Seminar 1

I What is the aim of academic study?

Exercise 1 *Rank the aims 1—11 where 1 gets the highest grade and 11 gets the lowest.*

- to meet intelligent people (a)
- to ensure having a career or future job (b)
- to discover more about theories and certain known facts (c)
- to discuss philosophy (d)
- to enjoy learning (e)
- to develop personal growth (f)
- to enable members of society to exchange ideas which are intellectually stimulating (g)
- to contribute to social and economic development of society (h)
- to pass examinations (i)
- to gain a higher-level degree (j)
- to improve cooperation between different members of world society (k)

Exercise 2 *Complete the table with the results of the members of your group*

	a	b	c	d	e	f	g	h	i	j	k

Exercise 3 *Draw a graph showing preferences of the members of your group in the field of aims of academic study.*
Write a short report summarizing the results and read it in class.

II Academic skills

Exercise 4 *How important is it for you? Rank each point H (high importance), M (medium importance) and L (low importance)*

a) How important is it for you to develop the following characteristics while studying at university?
- knowing your strengths and weaknesses
- thinking about how to develop your abilities further
- thinking about how to approach a particular task using a logical, reasoned approach to study
- approaching your subject in depth
- being interested in finding things out
- learning how to study
- communicating results successfully

b) To write well academically, how important are the following?
- studying grammar
- studying vocabulary
- imitating other writers
- writing a lot
- inviting others to comment on your writing
- going back and thinking again about what you have written
- rewriting repeatedly until you are satisfied
- understanding the process of writing
- meeting the needs of your reader
- reading a lot

c) How important do you think the following are when writing academic texts?
- grammatical correctness
- spelling and punctuation
- an appropriate style
- overall organization
- vocabulary
- good ideas
- good use of sources (appropriate citation, bibliography)
- relevance of subject content
- response to the task

d) In which of the following ways can you support your ideas when writing academic text? Using:
- personal anecdotes
- facts
- statistics
- examples
- news
- information from books, articles, reports, the Internet
- analogies
- views and attitudes of others
- research data

e) Which of the following contribute to successful academic writing?
- presenting information clearly and precisely
- analyzing questions and issues clearly and precisely
- distinguishing between relevant and irrelevant material
- recognizing key assumptions
- identifying competing points of view
- demonstrating excellent reasoning and problem-solving
- abilities to adopt a critical stance
- understanding the context for which you are writing

f) When persuading your tutors or other members of your academic community that your argument is valid, how important are the following?
- analyzing questions
- stating facts
- reasoning your argument logically from facts
- explaining key terms
- using language appropriate to a particular subject area
- using other points of view to strengthen your argument or research
- demonstrating the weaknesses of other people's arguments
- acknowledging the limitation of your own argument or research
- supporting your argument with examples
- frequently summarizing your argument
- referring to well-argued conclusions

Exercise 5 *Make a short summary based on your answers. Present it in class.*

III Learning together

Exercise 6 *Which of the following learning situations are most effective for you?*
1) Being part of a large group and listening to a lecturer or teacher talking
2) Being part of a smaller group and actively participating in class
3) Being in a one-to-one situation and discussing your work with your teacher

Exercise 7 *Which three of the following factors are most important for you in selecting a university for undergraduate and postgraduate study? Give reasons.*
1) The location of the university
2) Course fees and living costs
3) The influence of your parents
4) The reputation of the university
5) The age of the university
6) Class sizes
7) Facilities (technology, sports, etc.)
8) Language of instruction
9) Language support
10) The number of international students

Exercise 8 *Evaluate your ability to take part in discussions in your native language and in English.*

		always	usually	sometimes	never
1	I can speak confidently in a group discussion				
2	I can think of something interesting to say				
3	I can find the right language to express my ideas				
4	I can use grammar accurately				
5	I prepare for a discussion by reading and thinking about ideas				
6	I speak clearly and people understand me				
7	I can respond intelligently to other people's ideas				

Exercise 9 *Listen to an extract from a group discussion between three students about the education systems in their countries. (s1-1; s1-2)*
   1) Where are the students from?
   2) What's the main point each student makes about their education system?

IV Speaking

Exercise 10 *Do you agree with the statement? Note down five points to support your view. Compare your ideas with other students.*

Education should be a priority for government spending, even more than health, transport, and defence.

Seminar 2

I Types of Academic Writing

Scientific and technical articles and essays are mainly published in journals, magazines and newspapers. They are normally intended to reach a wider audience than research papers.

How **scientific articles** are written depends on who the readers are likely to be. A more scholarly, academic or discipline-specific journal will allow specialized vocabulary, while a piece in a more popular magazine, for example, will present and explain the data in an accessible manner for a wider audience. The writer must know what kind of people he or she is writing for.

Articles and essays need to be a seamless whole: paragraph flowing into paragraph, ideas presented smoothly in logical order. Structurally they can be broken down into these three parts:

- Introduction
- Main body
- Conclusion

Articles and essays need to be well thought out and ordered. How the writer introduces the piece, builds on the introduction through the body, and concludes will largely determine how the information is accepted. Step by step, the writer must present main ideas, supporting evidence, analyses and conclusions in a logical and organized manner. The writing must not wander, but keep to its task of presenting the writer's information in the clearest possible way.

Research papers are generally written for scientists working in the same field and therefore have a more limited, and more specialized, readership than articles. Research papers can appear in specialist journals or be presented at conferences.

A research paper has a more closely defined structure than an article or essay. There are normally 8 sections in a research paper or scientific report, and these tend to follow each other in a fixed sequence. Obviously these may vary, depending on the nature of the research done. ƒ

1) *Title.* It must precisely describe the report's contents.
2) *Abstract*. A brief overview of the report.
3) *Introduction*. Includes the purpose of the research. States the hypothesis. Gives any necessary. background information. Provides a review of pertinent literature.
4) *Methods and materials*. Provides a description of material, equipment and methods used in the research.
5) *Results*. States the results of the research. Visual materials are included here.
6) *Discussion*. Evaluation and interpretation. Was the hypothesis supported? If so, how? If not, why not? Relevant results are cited in support.
7) *Conclusion.* Conclusions to be drawn from the results. Conclusions about the hypothesis. Implications of the research and results. Additional research proposed.
8) *References cited.* A list of the references cited. Include references to any works cited in the review of literature in the introduction. Use the documentation style required by your specific field.

Exercise 1 How is writing a scientific article different from writing a research paper?
Compare the structures of a scientific article and a research paper.

II Titles

The purpose of a piece of scientific writing is to present information clearly and concisely so that it can be easily understood. Clarity therefore begins with the title.

In scientific and technical writing, a poetic or stylized title does not help the reader at all. For example, the following title *The Kopje Drummers of the Karoo* does not tell the reader that the paper is about birds, woodpeckers to be exact. However, this title *The mating rituals of Geocolaptes olivaceus, South Africa's Ground Woodpecker* tells the reader very clearly what the subject of the paper is.

Elements in a title

In technical and scientific writing the title is a precise description of the contents. It should include specific words to indicate the following:

- *the topic*, that is, the main, general subject you are writing about

- *the focus*, that is, a detailed narrowing down of the topic into the particular, limited area of your Research.
- optionally, for a scientific article, *the purpose* of your writing. This means including a word such as the following, which tells the reader what kind of argumentation to expect:
An analysis of…   An assessment of …   A comparison of …   A description of …
A discussion of …   An evaluation of …   An explanation of …   An outline of …

Some sample titles:

purpose	topic	focus
An analysis of	carp culture management	as a tool for Mexican crayfish conservation.
An overview of	nutritional needs	before, during and after an endurance event.
A discussion of	genetic engineering technology	and its effects on the environment.
An evaluation of	sewage treatment	as a tool in environmental protection.

Punctuation of titles: capital letters
• It is clearer to type your title in lower case rather than in capital letters.
• Use capital letters for the first letter of all the main words in the title, including nouns, pronouns, verbs, adjectives, adverbs, longer prepositions, conjunctions
• Do not use capital letters for short structural words (except when they are the first word of the title), such as articles (a, an, the), short prepositions (of, in, to ,at), coordinating conjunctions (and, or, nor, but, for)

Points to check in your own writing
- Be precise and concise; strive for clarity and avoid terms with multiple meanings which might lead to misunderstanding.
- Use key words from the paper to inform readers of the content, but try not to choose too many technical words as this will not attract a wider audience.
 - Titles stand alone; they are not a part of the opening sentence or paragraph.

Exercise 2 Identify the topic, the focus and the purpose
Which of the titles can be of a research paper? an article? a scientific book? a popular book?

A Mathematical Approach to Psychology
A Semantic Differential Experiment in the Interpretation and Grouping of Environmental Hazards
An Integrated Theory of Linguistic Descriptions
An Introduction to the Pronunciation of English
Can Syllabic Division Have Phonological Importance?
Guide to Technical Editing
How to Be Sure You're Spending Your Time in the Right Places
How to Write and Publish a Scientific Paper
Managing Management Time: Who's Got the Monkey?
Mind, Self, Society
Models and Methods for Three-way Multidimensional Scaling
On Relationship between Cognitive and Objective Distance
Preliminary Attempt at Outlining a System of Linguistic Signs in Terms of the Theory of Categories
Prosodic Systems and Intonation in English
Rhythmic Units and Syntactic Units in Production and Perception
Text and Context. Explorations in the Semantics and Pragmatics of Discourse
The Genesis of Schizophrenic Thought Disorder: a Serial Invalidation Hypothesis
The Visual Display of Quantitative Information
Writing and Speaking in the Technology Professions

Exercise 3 Write the title to your draft.

III Planning Your Writing

A primary tool for a writer is making a plan or outline before starting to write. Planning enables you to:
 - organize your thoughts efficiently
- decide on the most effective way to present your information.
 - keep to a logical sequence of points and not wander off on a tangent
 - remember all the information that must be included
- cut out unnecessary or irrelevant bits
Of course a plan can be changed. Writing is an exploratory process and as the piece is being written and assembled the outline can be amended to take account of additional points or to change emphasis.
A plan is simply a tool to ease the writer's task: it should remind you of what to do, not dictate to you.

Different kinds of plans

A simple plan. Only the main points are jotted down in an order that best serves the argument and information sharing of the paper.
A complete plan. Below the main points of the simple plan, you can list more specific points. Generally you do not have to be over-specific, but this is a way of making sure that the detailed points you want to make are not forgotten.
A question plan. In these you write down the questions that you are trying to answer at each stage of your work. This form helps you to understand the reader's position and may help focus the plan and organize your strategy.
A sentence plan. A simple sentence summarizing the main point of each paragraph and section.
These give you direction, and can sometimes form the first or 'topic' sentences of your paragraphs.

Putting your ideas in order

Written work must be ordered. Though information and ideas may come to you randomly, it is your job as a writer to clarify and structure your data and present it in a sane, sensible and logical fashion. Here are some points to think about when planning, selecting and sequencing your material:
- Have a goal, a main idea and intent. Every idea, sentence and paragraph must lead towards that goal effectively. Stick to the matter at hand; omit anything that does not lead towards the goal, no matter how interesting.
- Have a reason for ordering your paper as you do, and then convince the reader of your argument by developing it smoothly and logically.
- Each idea and concept (with its substantiation) should flow logically from one to the next.

Different ways of ordering your material

chronological or sequential	Step by step. Points are made one after another in the order of occurrence.
from simple to complex	Used when proving an assertion made in the introduction. Each step builds on the one before, from the obvious to the complicated, building the reader's understanding gradually. It builds naturally to a climax in the conclusion.
from complex to simple	Used when urging the reader to apply a solution to a problem. It states the problem, and then begins to direct towards a specific solution
from general to specific	Used when contrasting and comparing, from similarity to difference
from specific to genera	Used when contrasting and comparing, from difference to similarity

Layout of a sample plan

In a typical layout, a combination of numerals and letters are organised in a hierarchy. For example:
Roman numerals (I, II, III, IV, V ...), signifying main points
capital letters (A, B, C, D …)
Arabic numerals (1, 2, 3, 4 …)
lower case letters (a,b,c,d,…)
numerals in parentheses ((1), (2), (3), (4) …)
lower case letters in parentheses ((a), (b), (c), (d)…)

In the text each lower level is indented further.
I   first main point
A   part of I
1   part of I.A
a   part of I.A.1
(1)   part of I.A.1.a
(a)   part of I.A.1.a.(1)
(b)   part of I.A.1.a.(1)
(2)   part of I.A.1.a
(a)   part of I.A.1.a.(2)
b   part of I.A.1
(1)   part of I.A.1.b
2   part of I.A
a   part of I.A.2
B   part of I
1   part of I.B
II   second main point
The plan continues …

Exercise 4 *Choose any article of approximately ten paragraphs and write a simple plan, a complete plan, a question plan, and a sentence plan.*

Exercise 5 *Write a simple plan and a question plan to your draft.*

IV Style

When publishing in English you need to take account of the general rules which have become accepted as the norm in academic communication. In writing technical and scientific papers in particular, you should aim to achieve objectivity, clarity and precision. In addition, there are conventions governing the use of formal patterns, though the need to establish rapport with your audience and to make your writing reader-friendly has an influence on determining your selection of formal or informal language phrases. This implies that there still is a certain amount of creative use of language in the dissemination of research information and that scientific writing does not simply follow a set of mechanical writing procedures for reporting results. The written text also reflects, though to a very limited extent, cultural and rhetorical assumptions about what is presented and how the material is organized.

Objectivity is generally governed by the research topic although obviously it is individuals who actually have to select, arrange and present their findings. Thus it is your task, as the writer, to deal with your topic in a fair, objective and responsible manner, keeping your personal feelings out of your writing.
From a language point of view, objectivity and a neutral approach (impersonal style) may be achieved by using the passive voice and by avoiding ambiguous statements. Avoidance of confusing metaphoric elements, use of precise and well-established technical terms may add to effective writing and help to produce explicitness of standard academic description.
Using the **passive voice** in impersonal writing
Scientific writing is usually done in an impersonal style. Information and facts are more important than personal opinions or attitudes. This style is also used to put a certain distance between the writer and the arguments proposed and thus makes them more objective.

Personal / informal	Impersonal / formal
We can distinguish limits to other technical systems by…	Limits to other technical systems can be distinguished by…
In the present article I want to…	The present article is intended to contribute…
… and as a result we selected the superior variants	…and as a result, the superior variants were selected…
I assume that…	It is assumed that…
The authors consider these results to be …	These results are considered to be…
Because we want to evaluate …	In order to evaluate…
If there aren`t any…	If there are no…

Precise references to data in tables, graphs and diagrams also lead to greater objectivity in research findings.

Clarity. Simplicity of text and of text composition are important prerequisites to readability. You should always try to write in a plain, clear and straightforward manner. Overlong sentences or lengthy chains of clauses and groups of words can easily prevent your reader from understanding what you want to say. As a rule, you should not add more than 2 to 3 clauses of any sort to form one sentence. Repeating words, signposting and using linking devices which help the reader to connect and relate information are useful ways of achieving clarity and readability.

Example paragraphs:

1 The following overlong sentence is almost unintelligible:

> Axis-boundary conditions for the SGS stresses in case of scale similarity and mixed-type models are specified in terms of GS velocities at the axis so as to be compatible in the statistical mean with expressions for the axis values of… following from the kinematics of homogeneous axis symmetric turbulences as well as from the statistically averaged dynamic equations for the GS velocity field taking into account statistically steady and homogeneous flow conditions.

This can be re-written, as below, in order to make the meaning clearer. The text is divided into three shorter sentences and linking words and phrases added.

> Axis-boundary conditions for the SGS stresses in case of scale similarity and mixed-type models are specified in terms of GS velocities at the axis. This is done so that they are compatible in the statistical means…for the GS velocity field. Statistically steady and homogeneous flow conditions are also taken into account.

2 In the following paragraph, notice the use of the linking phrases, or semantic markers in italics, which have been used in order to shorten sentences and make them understood more easily, thus improving readability:

> In the first of this two-paper sequence, a highly automated method for generating reduced-order dynamic macromodels for electrostatically MEMS devices was presented. The approach was to use selected linear elastic modes of the device as basic functions, and to express the kinetic and potential energy in terms of basis-function amplitudes and their time derivatives. It was demonstrated that this procedure could, indeed, be executed nearly automatically, requiring only a few inputs from the designer to select parameters for the macromodel. However, while the procedure works well for nonlinearities produced outside the electric body, such as the non-linear electrostatic force betweenthe plates of a parallel-plate capacitor with one plate being flexible, it fails to capture the correct mechanical structural stiffness when the deflections become comparable to a typical thickness. This effect is generally referred to as…

Expressing your ideas concisely

Being concise in your writing means expressing your ideas in as few words as possible. This involves not repeating what you say, cutting out irrelevant details and avoiding redundancy, that is, the use of unnecessary words. If your sentences are too 'wordy', they are difficult for the reader to understand.

"wordy" sentence The different materials that contribute to an environmental impact have quantitatively different potential environmental effects.

more concise sentence: Different materials have different environmental impacts.

Academic writing follows certain rules of **formality** which non-native writers should not violate without very good reasons.

Contracted verb forms These are the representations in writing of verb forms normal in speech; a letter in the verb has been omitted, as indicated by an apostrophe. These contractions should be avoided in academic writing.

wrong This is a problem of linear algebra which won`t be discussed here.

correct This is a problem of linear algebra which will not be discussed here.

It is true that nowadays contracted verb forms can be found in scientific publications as they are increasingly regarded as a way of producing informality, thus creating communication with the audience. However, as a general principle, contractions are still not acceptable in technical-scientific papers and should be written out in full.

Use of the first person pronoun. It is normal practice to avoid using the personal pronoun "I" in scientific articles. Instead, "we" or "the team" are preferred. Some kind of switching between the different forms may nevertheless be appropriate in order to make the reader more involved in the argumentation. The switch from "we" or impersonal forms to "I" may help to establish the sometimes more desirable informal relationship with the reader.

Hedging means not making blunt, absolute or categorical statements; it means avoiding overgeneralisations; it means toning down the positiveness of your statements to allow for others to disagree with them.

Authors of scientific articles generally write in an impersonal style in order to sound more objective and convincing. They also want to avoid showing their personal attitude to their subject or an over-strong commitment to a particular conclusion, so hedging what they say is a way of accomplishing this. It thus involves not expressing the truth of a claim too strongly.

Too direct and straightforward argumentation may give the impression of over-confidence and this could puzzle some readers, particularly British or Asian ones who may consider it offensive.

In order to avoid overgeneralising (especially in experimental descriptions) or to avoid being too critical or direct, there are a number of hedging phrases and other techniques that can be used to help establish better communication and rapport with the reader. These hedging devices are found quite frequently in introductions and conclusions.

- *Use of first person pronouns*. It is best for writers to avoid describing their findings in the first person I / me / my, since normally these pronouns would only be used by famous and important researchers or representatives of schools. In general, structures with we / us / our are preferred. This also has a rhetorical function: it implies the inclusion of the author as a co-member of a group. Thus if you want to state whether you are able to present positive, successful results or not, you can say: We do not yet know ….

- *Using tentative verb forms*. Statements that are too direct or over-positive can be softened as in these examples:

Over-positive statement	Hedged statement
The investigations of the present work contribute to the model and filter components of LES…	The investigations of the present work are intended as a contribution to the model and filter components of LES…
We propose a methodological approach…	We would therefore propose…
The use of equivalence factors for ecotoxic effect should be rejected…	It is better for the use of equivalence factors for ecotoxic effect to be avoided…
Different variants of the disposal structures must be transferred in computer-aided modes…	It is recommended that different variants of the disposal structures be transferred in computer-aided modes…

Particularly useful verbs for hedging are seem to… / appear to … / tend to…, as in these phrases:

Our data seem/ appear to demonstrate that … /indicate that … /suggest that… /imply that …
Our data do not appear to confirm that …
Our data tend to support the hypothesis that …

- Using modal verbs. Many modal verbs indicate tentativeness or a lack of certainty and can therefore be used to soften what you want to say. Particularly useful modal verbs for this are can / could / may / might / would.

Direct sentence	Hedged sentence
It will be of interest to compose …	It might be of interest to compose…
X is due to Y	X might / could be due to Y…
Our data are expected to show …	Our data would be expected to show…
From these results we conclude…	From these results we may conclude…
This assumption also explains why …	This assumption may also help to explain why …
The present model is particularly useful ..	The present model should be particularly useful…

- Using adverbs

Using certain adverbs of degree and attitudinal adverbs can be used to soften what you say. They are especially useful when making generalisations, circumventing giving exact numerical data (when necessary) or avoiding making a claim for absolute truth.

Looking for oval pieces from the past, we found a long list but certainly there are more examples…

Other modifying expressions:
a little, rather, somewhat, almost, nearly, quite, approximately, about

Signposting
A good style is characterized as plain, clear and straightforward. Research findings, ideas and arguments should be connected in such a way that readers may follow and can be convinced of the given argumentation. Signposting devices or discourse markers are used to provide the linking of sentences and the relationship between them.

- **Noun substitution**. A synonym, a more general term or a personal pronoun can be used to refer back to a previously mentioned noun, sentence or fact.

> A highly automated method was presented …. The approach was to use….
> Large-Eddy Simulation has developed… . It is gaining…

- **Addition.** When you want simply to add a point or idea to reinforce or support what you have already said, you can use these conjunctions, adverbs and phrases:
* also, again, furthermore, moreover, too, in addition
* equally, likewise, similarly, correspondingly

- **Sequencing**: referring backwards or forwards

Time relationships may be signalled by various phrases and words, such as adjectives, adverbs and verbs or noun phrases. These can also be used to show the logical relationship between ideas or to connect what you are saying with something you said previously. Words and phrases include:
* so far, earlier, previous(ly), before that, until now, already, formerly
* at present, presently, meanwhile, at this point
* first of all, to begin with, to start with
* secondly, then, next
* finally, eventually, afterwards, later, above all, last but not least

- **Reformulation.** This is where you want to express an idea in a different way, either to reinforce its importance or to make something clearer. Sometimes you want to suggest an alternative to what you said before. Phrases you can use include:
* to put it simply, better, rather, that is to say
* in other words, alternatively, again

- **Inference.**This indicates a deduction from what you implied in the previous sentence. You can use phrases like:
* otherwise, or else, that being so, in that case

- **Highlighting.** You can emphasize or pick out particular words, points or ideas by using the following phrases.
* namely, particularly, specifically
* especially, notably, mainly, mostly, chiefly

- **Cause and effect.** Words and phrases for expressing cause and effect are necessary for linking the different parts of a text. They are used to establish a logical connection between facts. This connecting function may be expressed by conjunctions, adjectives, adverbs, verbs and/or nouns. The most common phrases for introducing cause are:
* due to, owing to, because of, resulting from
* be caused by, spark off, give rise to, provoke, generate, bring about, stem from, arise out of, originate from, result from, enable
* cause of, reason for, purpose of, with the aim of
* since, for, because

Effect may be expressed by:
* hence, thus, consequently, as a consequence, as a result, therefore, that is why, eventually, so, finally
* result in, lead to, produce
* the result of, the consequence of

Phrases for expressing result include:
* as a result, with the result that, so that, thus, therefore, consequently, as a consequence, hence, thereby, for this reason, because of this

- **Contrasting ideas**. Useful phrases include the following.
* although, despite, in spite of
* but, however, nevertheless, nonetheless, yet
* on the contrary, by comparison, by contrast, in contrast to, on the one hand…on the other hand
* instead, alternatively, conversely, whereas

- **Marking transition to a new topic**. Useful phrases include:
* with reference to, with respect to, with regard to, as for
* let us now turn to, it follows that

- **Generalising.** This sometimes involves summation, or the summing up of what has gone before. Phrases include the following.

* *in general, on the whole, by and large, in total, as a rule, for the most part, broadly speaking, speaking generally, usually*
* *altogether, overall, thus, obviously*

Exercise 6 *Compare these two explanations or definitions of economics. What are the main differences?*

Informal/Spoken. Economics? Yes, well.... economics is, I suppose, about people trying to ... let me see ... match things that are scarce, you know, with things that they want, . . . oh, yes, and how these efforts have an effect on each other ... through exchange, I suppose.
Formal/Written. Economics is the social science that studies how people attempt to accommodate scarcity to their wants and how these attempts interact through exchange.

Exercise 7 *The following sentences are mixed formal and informal. Write F(formal) or I (informal).*

a The project will be completed next year.
b I showed that his arguments did not hold water.
c I wonder why he put up with those terrible conditions for so long.
d Five more tests will be necessary before the experiment can be concluded.
e It is possible to consider the results from a different viewpoint.
f It has been proved that the arguments so far are without foundation.
g He'll have to do another five tests before he can stop the experiment.
h It isn't clear why such terrible conditions were tolerated for so long.
i There are a number of reasons why the questionnaire should be revised.
j We'll finish the job next year.

Exercise 8 *The following sentences are all informal. Rewrite them in a formal style.*
a She said it wasn't good enough.
b I thought the lecture was terribly difficult to follow.
c They've got to find out how to carry out a survey of old folks' opinions of little kids.
d The results were a lot better than I expected.
e None of our other student friends knew the answer either.
f He said: 'It's hell being on your own.'

Exercise 9 *Cautious or hedging language is important in academic writing. Look at the following sentences, which all contain definite statements. Rewrite the sentences so that the statements are more cautious.*
a A survey has shown that lecturers use the terms 'seminars' and `tutorials' interchangeably.
b The rate of inflation will not increase this year.
c Reading is effective when it has a particular purpose.
d The answer to problems is found in asking the right questions.
e Countries disagree on the interpretation of democracy.

Exercise 10 *The following passage is written in a mixed style with some colloquialisms and other inappropriate words. Rewrite it in an academic style with appropriate vocabulary, structures and cautious language.*

Causes of Writing Errors
Research has shown (James) that learners of English find writing the most difficult thing they've got to do. There are 3 main types of error that the learner will make.
The biggest sort of error leads to misunderstanding or a total breakdown in communication. There are lots of causes of this: the biggest is the use of translation from the mother tongue. By translating word for word the student uses the wrong sentence patterns (grammar) and the wrong words (vocabulary). Another cause is choosing to write long and complicated sentences with far too many supplementary clauses. The longer the sentence the bigger is the chance of making mistakes and failing to communicate the meaning. Therefore, in the early stages of your writing, you shouldn't write sentences longer than 3 lines.

Seminar 3

I Clauses

Independent Clauses
An independent clause contains a subject and a verb and expresses a complete thought. It can stand alone as a sentence by itself. An independent clause is formed with a subject and a verb and often a complement.

Subject	**Verb**	**(Complement)**
The sun	rose.	
Water	evaporates	rapidly in warm climate zones.

Dependent Clauses
• dependent clause begins with a subordinator such as *when, while, if that*, or *who*.
• dependent clause does not express a complete thought, so it is not a sentence by itself. A dependent clause is also called a sentence fragment. By itself, it is an incomplete sentence, and it is an error. A dependent clause is formed with a subordinator, a subject, and a verb.

Subordinator	**Subject**	**Verb**	**(Complement)**
when	the sun	rose ...	
because	water	evaporates	rapidly in warm climate zones ...
whom	the voters	elected ...	
if	the drought	continues	for another year ...

A few of the most common subordinators

after	*whenever*	*whom*	*unless*
although	*where*	*whose*	*if*
as, just as	*wherever*	*before*	*until*
as if	*whether*	*that*	*since*
as soon as	*which*	*even though*	*what*
because	*while*	*though*	*so that*
when	*who*	*how*	

Exercise 1 Remember that an independent clause by itself is a complete sentence, but a dependent clause by itself is an incomplete sentence. Write Indep. next to the complete sentences and put a period (.) after them. Write Dep. next to the incomplete sentences. The first two have been done for you as examples.

Indep. 1. Globalization means more travel for businessmen and women.
Dep. 2. As business executives fly around the globe to sell their companies' products and services
     3. Jet lag affects most long-distance travelers
     4. Which is simply the urge to sleep at inappropriate times
     5. During long journeys through several time zones, the body's inner clock is disrupted
     6. For some reason, travel from west to east causes greater jet lag than travel from east to west
     7. Also, changes in work schedules can cause jet lag
     8. When hospital nurses change from a day shift to a night shift, for example
     9. Although there is no sure way to prevent jet lag
     10. There are some ways to minimize it
     11. Because jet lag is caused at least partially by loss of sleep, not just a change in the time of sleep
     12. A traveler should plan to arrive at his or her destination as late as possible
     13. Upon arriving, he or she should immediately go to bed
     14. Then the traveler should start to live in the new time zone immediately
     15. Even when the traveler arrives early in the morning and cannot go to bed immediately

II Kinds of Sentences

A sentence is a group of words that you use to communicate your ideas. Every sentence is formed from one or more clauses and expresses a complete thought.
The four basic kinds of sentences in English are simple, compound, complex, and compound-complex. The kind of sentence is determined by the kind of clauses used to form it.

Simple Sentences
A simple sentence is one independent clause.

```
____ s ____  _v_
```
Freshwater boils at 100 degrees Celsius at sea level.

```
____ s ____  _v_                    ___v___
```
Freshwater boils at 100 degrees and freezes at 0 degrees Celsius.

```
_____s_____    ____s____    ____v_____    _____v_____
```
Freshwater and salt water do not boil and do not freeze at the same temperatures.

Notice that the second sentence has two verbs, boils and freezes. This is called a compound verb. The third sentence has both a compound subject and a compound verb. All three examples are simple sentences because they have only one clause.

Exercise 2 *Use a separate sheet of paper for this exercise.*

1. Write two simple sentences with one subject and one verb.
2. Write two simple sentences with one subject and two verbs.
3. Write two simple sentences with two subjects and one verb.
4. Write two simple sentences with two subjects and two verbs.

Compound Sentences
A compound sentence is two or more independent clauses joined together. There are three ways to join the clauses:
1. With a coordinator
Salt water boils at a higher temperature than freshwater, so food cooks faster in salt water.
2. With a conjunctive adverb
Salt water boils at a higher temperature than freshwater; therefore, food cooks faster in salt water.
3. With a semicolon
Salt water boils at a higher temperature than freshwater; food cooks faster in salt water.

III Compound Sentences with Coordinators

A compound sentence can be formed as follows:
Independent clause, + coordinator + independent clause
Salt water boils at a lower temperature than freshwater, so food cooks faster in salt water.

There are seven coordinators, which are also called coordinating conjunctions. You can remember them by the phrase FAN BOYS (For, And, Nor, But, Or, Yet, So). The following sentences illustrate the meanings of the seven FAN BOYS coordinators. (Punctuation note: There is a comma after the first independent clause.)

Coordinators (Coordinating Conjunctions)

To add a reason	
for	Japanese people live longer than most other nationalities, for they eat healthful diets.
To add a similar, equal idea	
and	They eat a lot of fish and vegetables, and they eat lightly.
To add a negative equal idea	
nor	They do not eat a lot of red meat, nor do they eat many dairy products. Note: *Nor* means "and not." It joins two negative independent clauses. Notice that question word order is used after nor.
To add an opposite idea	
but	Diet is one factor in how long people live, but it is not the only factor.

To add an alternative possibility	
or	However, people should limit the amount of animal fat in their diets, or they risk getting heart disease.
To add an unexpected or surprising continuation	
yet	Cigarette smoking is a factor in longevity, yet Japanese and other long-lived Asians have a very high rate of tobacco use.
To add an expected result	
so	Doctors say that stress is another longevity factor, so try to avoid stress if you wish to live a longer life.

But and *yet* have similar meanings: They both signal that an opposite idea is coming. *But* is preferred when the two clauses are direct opposites. When the second clause is an unexpected or surprising continuation because of information given in the first clause, *yet* is preferred. (*But* is acceptable for both meanings; *yet* for only one meaning.) Compare:

I want to study art, **but** my parents want me to study engineering. (direct opposite)
I am very bad at math, **yet** my parents want me to study engineering. (surprising continuation after "I am very bad a math")

Exercise 3 *Which coordinator would you use to connect the two clauses in these sentences? Write either* but *or* yet *in the blank space.*

I a. Too much sun damages the skin, _____ many people still do not use sunscreen.
  b. Too much sun damages the skin, _____ too little sun also causes health problems.
2 a. The company's sales increased last year, _____ its profits declined.
  b. The company moved its marketing division to Phoenix, _____the operations division stayed in Boston.
3 a. Population growth has slowed in most developing countries, _____it has not slowed enough to avoid serious problems.
  b. The fertility rate in India has decreased from 6 to 3 births per female, _____India's population is expanding at the rate of 18 million per year.

Exercise 4 *Form compound sentences by adding another independent clause to the following independent clauses. Be sure to write a complete clause containing a subject and a verb. Circle the coordinator and add punctuation. The first one has been done for you as an example.*

1. The college campus is located in the center of the city, so *it is very easy to get there by public transportation.*
2. According to the Big Bang Theory, the universe began expanding about 13.7 billion years ago and ___
_____
3. Does the universe have an outer edge or _____
_____?
4. Scientists predict that intelligent life exists somewhere in the universe but _____
_____.
5. Mars probes have photographed rocks with water markings on them yet _____
_____.
6. We may not be able to communicate with other life forms for _____
_____.
7. Instead of taking the psychology final exam, we can write a 10-page research paper or _____
_____
8. I want to write a research paper yet _____
_____.
9. Three weeks before the end of the term, I had not started my paper nor _____
_____.
10. I needed help choosing a topic so _____
_____.

Exercise 5 *For each pair of the following sentences form a compound sentence by joining the two independent clauses with a coordinator that best fits the meaning. Use each FAN BOYS coordinator once. Write your new sentences on a separate sheet of paper, and punctuate them correctly. The first one has been done for you as an example.*

1. Nuclear accidents can happen. Nuclear power plants must have strict safety controls.

Nuclear accidents can happen, so nuclear power plants must have strict safety controls.

2. The accident at the nuclear power plant at Three Mile Island in the United States created fears about the safety of this energy source. The disaster at Chernobyl in the former Soviet Union confirmed them.
3. Solar heating systems are economical to operate. The cost of installation is very high.
4. Energy needs are not going to decrease. Energy sources are not going to increase.
5. Burning fossil fuels causes serious damage to our planet. We need to develop other sources of energy.
6. Ecologists know that burning fossil fuels causes holes in the ozone layer. People continue to do it.
7. Developing nations especially will continue this harmful practice. They do not have the money to develop "clean" energy sources.
8. All nations of the world must take action. Our children and grandchildren will suffer the consequences.

Exercise 6 Write seven compound sentences of your own, using each coordinator once.

IV Compound Sentences with Conjunctive Adverbs

A second way to form a compound sentence is as follows:
Independent clause; + conjunctive adverb, + independent clause
Salt water boils at a higher temperature than freshwater; therefore, food cooks faster in salt water.

Punctuation note: Put a semicolon before and a comma after the conjunctive adverb.

Several transition signals, such as *on the other hand*, *as a result*, and *for example*, act like conjunctive adverbs; they can also connect independent clauses with a semicolon and a comma. The following chart lists common conjunctive adverbs and a few transition signals that can be used in this way.

Conjunctive Adverbs

To add a similar, equal idea	
also besides furthermore in addition moreover	Community colleges offer preparation for many occupations; **also/besides/furthermore/in addition/ moreover**, they prepare students to transfer to a four-year college or university.
as well	Community colleges offer preparation for many occupations; they prepare students to transfer to a four-year college or university **as well**.
too	Community colleges offer preparation for many occupations; they prepare students to transfer to a four-year college or university, **too**.
To, add an unexpected or surprising continuation	
however nevertheless nonetheless still	The cost of attending a community college is low; **however/nevertheless nonetheless/still**, many students need financial aid.
To add a complete contrast	
on the other hand in contrast	Tuition at a community college is low; **on the other hand/in contrast**, tuition at private schools is high.
To give an alternative possibility	
otherwise	Students must take final exams; **otherwise**, they will receive a grade of Incomplete.
To add an expected result	
accordingly as a result consequently hence therefore thus	Native and nonnative English speakers have different needs; **accordingly/as a result/ consequently/hence/therefore/thus**, most schools provide separate English classes for each group.
To add an example	
for example for instance	Most colleges now have a writing requirement for graduation; **for example/for instance**, students at my college must pass a writing test before they register for their final semester.

Exercise 7 Form compound sentences by adding a second independent clause to each independent clause. Be sure to add a complete clause containing a subject and a verb. Circle the conjunctive adverb and add punctuation. The first one has been done for you as an example.

1. The college campus is located in the center of the city; (therefore) *it is very easy to get there by public transportation.*
2. According to the Big Bang Theory, the universe began expanding about 13.7 billion years ago moreover

_____ .
3. Students must pay their tuition and fees before they register for classes otherwise _____

_____.

4. Scientists predict that intelligent life exists somewhere in the universe however _____

_____.

5. Mars probes have photographed rocks with water markings on them nevertheless _____

_____.

6. My roommate scored high on the English placement test as a result _____

_____.

7. Tuition and fees increase every year for example _____

_____.

8. The class thought the teacher would give a test last Friday instead _____

_____.

Exercise 8 On a separate sheet of paper, combine the pairs of sentences using conjunctive adverbs. Punctuate your new sentences correctly. The first one has been done for you as an example.

1. Nuclear accidents can happen. Nuclear power plants must have strict safety controls.
Nuclear accidents can happen; therefore, nuclear power plants must have strict safety controls.
2. Solar heating systems are economical to operate. The cost of installation is very high.
3. Burning fossil fuels causes serious damage to our planet. We need to develop other sources of energy.
4. Ecologists know that burning fossil fuels causes holes in the ozone layer. People continue to do it.
5. All nations of the world must take action. Our children and grandchildren will suffer the consequences.

Exercise 9 Write five compound sentences, using each of these conjunctive adverbs once: in addition, nevertheless, on the other hand, therefore, *and* for instance.

V Compound Sentences with Semicolons

A third way to forma compound sentence is to connect the two independent clauses with a semicolon alone:

---independent clause ---   ----independent clause -----
Poland was the first Eastern European country to turn away from communism; others soon followed
This kind of compound sentence is possible only when the two independent clauses are closely related in meaning. If they are not closely related, they should be written as two simple sentences, each ending with a period.

Exercise 10 Place a semicolon between the two independent clauses in the following compound sentences.

1. The practice of yoga strengthens the body and promotes flexibility it also strengthens the mind and refreshes the soul.
2. Motherhood causes some women to quit their jobs others continue working despite having young children to care for.
3. Three hundred guests attended his wedding two attended his funeral.

Exercise 11 On a separate sheet of paper, write three compound sentences of your own, using a semicolon to join the independent clauses.

Exercise 12 Use what you have learned about forming compound sentences to improve the following mini-essay, which contains many short, simple sentences. Combine sentences wherever possible. Try to use each of the three methods at least once. There are many possible ways to combine sentences.

Robots

[1]A robot is a mechanical device that can perform boring, dangerous, and difficult tasks. [2]First of all, robots can perform repetitive tasks without becoming tired or bored. [3]They are used in automobile factories to weld and paint. [4]Robots can also function in hostile environments. [5]They are useful for exploring the ocean bottom as well as deep outer space. [6]Finally, robots can perform tasks requiring pinpoint accuracy. [7]In the operating room, robotic

equipment can assist the surgeon. [8]For instance, a robot can kill a brain tumor.[9]It can operate on a fetus with great precision.

[10]The field of artificial intelligence is giving robots a limited ability to think and to make decisions. [11]However, robots cannot think conceptually. [12]Robots cannot function independently. [13]Humans have to program them. [14]They are useless. [15]Therefore, humans should not worry that robots will take over the world—at least not yet.

VI Complex Sentences

A complex sentence contains one independent clause and one (or more) dependent clause(s). In a complex sentence, one idea is generally more important than the other. We place the more important idea in the independent clause and the less important idea in the dependent clause.
There are three kinds of dependent clauses: adverb, adjective, and noun.

Complex Sentences with Adverb Clauses
An adverb clause acts like an adverb; that is, it tells where, when, why, and how. An adverb clause begins with a subordinator, such as *when, while, because, although, if, so*, or *that*. It can come before or after an independent clause.

----------------------DEPENDENT ADVERB CLAUSE ----------------------   - -----INDEPENDENT CLAUSE ------
Although women in the United States could own property, they could not vote until 1920.

---------INDEPENDENT CLAUSE --------------   ---DEPENDENT ADVERB CLAUSE---
A citizen can vote in the United States when he or she is 18 years old.

Complex Sentences with Adjective Clauses
An adjective clause acts like an adjective; that is, it describes a noun or pronoun. An adjective clause begins with a relative pronoun, such as *who, whom, which, whose*, or *that*, or with a relative adverb, such as *where* or *when*. It follows the noun or pronoun it describes.

              DEPENDENT
       - ADJECTIVE CLAUSE -

Men who are not married are called bachelors.

                              -------DEPENDENT ADJECTIVE CLAUSE----
Last year we vacationed in Cozumel, which features excellent scuba diving.

Complex Sentences with Noun Clauses
A noun clause begins with a *wh-* question word, *that*, *whether,* and sometimes *if*. A noun clause acts like a noun; it can be either the subject or an object of the independent clause.

------------------------DEPENDENT NOUN CLAUSE -------------------------------
That there is a hole in the ozone layer of Earth's atmosphere is well known.

                DEPENDENT
              -- NOUN CLAUSE--
Scientists know what caused it.
In the first example, *That there is a hole in the ozone layer of Earth's atmosphere* is the subject of the verb *is.* In the second example, *what caused it* is the object of the verb *know.*

Exercise 13 Step I *Underline the independent clause of each sentence with a solid line.*
Step 2 *Underline the dependent clause with a broken line. One sentence has two dependent clauses.*
Step 3 *Write* Sub. *above the subordinator.*

1. Because the cost of education is rising, many students must work part-time.
2. When students from other countries come to the United States, they often suffer from culture shock.
3. Because financial aid is difficult to obtain, many students have to work part-time.
4. Please tell me where the student union is.
5. Engineers, who have an aptitude for drafting and mechanics, must also be artistic and imaginative.
6. While the contractor follows the blueprint, the engineer checks the construction in progress.
7. Since the blueprint presents the details of the engineer's plans, it must be interpreted accurately by the contractor.
8. Students should declare a major by their junior year unless they have not made up their minds.
9. Even though students declare a major now, they can change it later.

10. The government says that inflation is holding steady.
11. Economists are concerned that the rate of inflation will double if the government does not take immediate steps to control it.

Exercise 14 Step I *Add a logical independent clause to each of the dependent clauses.*
Step 2 *Punctuate each sentence correctly.*

1._____ until I pay my tuition.
2. Unless I take 12 units each term _____.
3. _____that computer engineering is a popular major.
4. _____who taught this course last term?
5. Because I had to look for a part-time job _____
_____.
6. _____ if I want to get to school on time.
7. _____whether I should take advanced calculus.
8. _____ whom I met at the math club meeting last week.
9. When I left my country _____.
10. _____that my college adviser recommends.

VII Compound-Complex Sentences

A Compound-complex sentence has at least three clauses, at least two of which are independent. You can use almost any combination of dependent and independent clauses. Just be sure that there is at least one independent clause. In the following examples, independent clauses are underlined with a solid line and dependent clauses are italicized.
1. I wanted to travel *after I graduated from college*; however, I had to go to work immediately.
2. *After I graduated from college*, I wanted to travel, but I had to go to work immediately.
3. I wanted to travel *after I graduated from college*, but I had to go to work immediately *because I had to support my family*.
4. I could not decide *where I should work* or *what I should do*, so at first I did nothing.

Punctuate the compound part of a compound-complex sentence like a compound sentence; that is, use a semicolon/comma combination (sentence 1), or put a comma before a coordinator joining two independent clauses (sentences 2, 3, and 4).
Punctuate the complex part like a complex sentence. With adverb clauses, put a comma after a dependent adverb clause (sentence 2) but not before it (sentence 3). With noun clauses (sentence 4), use no commas.

Exercise 15 *Punctuate the following sentences.*
Step 1 *Underline the independent clauses with a solid line and the dependent clauses with a broken line.*
Step 2 *Add commas and/or semicolons as necessary.*
1. Information and communication technology is reaching out to help people in the poorest countries improve their lives for example fishermen on the Bay of Bengal can now receive online weather reports that tell them when it is safe to go out.
2. Furthermore, when the fishermen bring in a boatload of fish they can find out the current market prices for their fish, which will help them bargain with the middlemen to whom they sell their catch.
3. The cost of the cheapest computer is at least $200 and since this is more than an individual fisherman can afford several fishing villages together can pool their money and buy one to share.
4. The worldwide reach of the Internet is also providing employment opportunities in developing countries and as greater numbers of people learn the technology these opportunities will expand.
5. When you call your U.S. bank you may find yourself speaking to a customer service representative who is sitting in the Philippines or Puerto Rico and when you need technical support for your home computer you will probably get help from a programmer in New Delhi.

VIII Sentence Types and Writing Style

Exercise 16 As you read the model essay, notice the kinds of sentences.
- *Paragraphs 1 and 4 have too many compound sentences. This style is boring because so many sentences use and as the connector.*
- *Paragraph 2 has too many simple sentences. This style sounds choppy.*
- *Paragraph 3 uses a good mixture of sentence types.*

MODEL
Problems with Style

Rosa Parks

[1] Rosa Parks is a famous African-American woman, **and** she is often called "the mother of the civil rights moverriont'Shewas born into a poor but hardworking African-American family in, Alabama, **and** no one suspected that she would become the spark that ignited the civil rights movement in the United States. This movement - changed U.S. society forever, **and** it helped African-Americans attain equal rights under the law.

[2] Parks became famous quite by accident. One day in 1955, she was on her way home from her job in a Montgomery, Alabama, department store. She boarded a city bus with three other African-Americans. They sat in the fifth row. The fifth, row was the first row African-Americans were allowed to sit in. A few stops later, the front four rows filled up. A white man was left standing.

[3] According to the laws of that time, African-Americans had to give up their seats to whites, so the bus driver asked Parks and the three other African-Americans to get up and move. Although the others complied, Parks refused. She later said she was not tired from work, but tired of being treated like a second-class citizen, The bus driver called the police, who arrested Parks and took her away in handcuffs,

[4] Over the weekend, a protest was organized, **and** on the following Monday, African-American people in Montgomery began a boycott of the public buses, **and** the boycott was tremendously successful, **and** it lasted more than a year. The Supreme Court of the United States finally ruled that segregation on public transportation was unconstitutional. African-Americans had won a huge victory, **and** they realized their power to change the system.

Now read the same essay with the sentence structure revised.

MODEL
Revised Essay

Rosa Parks

[1] Rosa Parks is a famous American African-American woman who is often called "the mother of the civil rights movement." When she was born into a poor but hardworking African-American family in Alabama, no one suspected that she would become the spark that ignited the civil rights movement in the United States. This movement changed U.S. society forever by helping African-American people attain equal rights under the law.

[2] Parks became famous quite by accident. One day in 1955, on her way home from her job in a Montgomery, Alabama, department store, she boarded a city bus with three other African-Americans. They sat in the fifth row, which was the first row African-Americans were allowed to sit in. A few stops later, the front four rows filled up, and a white man was left standing.

[3] According to the laws of that time, African-Americans had to give up their seats to whites, so the bus driver asked Parks and the three other African-Americans to get up and move. Although the others complied, Parks refused. She later said she was not tired from work, but tired of being treated like a second-class citizen. The bus driver called the police, who arrested Parks and took her away in handcuffs.

[4] Over the weekend, a protest was organized, and on the following Monday, African-American people in Montgomery began a boycott of the public buses. The boycott was tremendously successful, lasting for, more than a year. The Supreme Court of the United States finally ruled that segregation on public transportation was unconstitutional. Because they had won a huge victory, African-Americans realized their power to change the system.

Exercise 17 Improve this paragraph, which contains too many compound sentences. Change compound sentences into complex sentences, using one of the subordinators listed. Use each subordinator once. Rewrite the paragraph on a separate sheet of paper.

because   although   when   after   as soon as   since

Equal Rights for Women

Russian women started to gain equality earlier than women in the United States. In the former Soviet Union, men and women had access to equal education and job opportunities, and that reflected the Soviet philosophy. The 1937 Soviet constitution declared that women and men had equal rights and responsibilities, and women joined the workforce. Also, millions of Russian men were away in the military during World War II, so Russian women filled their places at work. Soviet women worked full time at their jobs, but they also had the primary responsibility for taking care of the family. They finished their work, and they had to shop, cook the evening meal, and perhaps wash, iron, or mend the family's clothes. U.S. women started to demonstrate that they could do the work of men during World War II.

Exercise 18 Use what you know about the different kinds of sentences to improve this short essay, which contains too many simple sentences. Use different methods of combining the sentences. Rewrite the essay on a separate sheet of paper.

Nonverbal Communication

[1] Nonverbal communication, or body language, is used everywhere in the world. It is a very powerful means of communication. It communicates much more than spoken words.

[2] One example of nonverbal communication is what occurs between parents and child. Parents smile at their child. They communicate love, acceptance, and reassurance. The child feels comfortable and safe. The smile signifies approval. The child is happy and well adjusted.

[3] Another example of nonverbal communication is the image a person shows in public. A woman is walking alone on an unfamiliar and possibly dangerous street. She wants to appear confident. She walks quickly. She may be tired. She walks with her shoulders straight and her head held high. Her eyes are focused straight ahead. Someone is looking at her. She returns the glance without hesitation. In contrast, a nervous woman appears afraid. She walks slowly with her shoulders and eyes down.

[4] Indeed, body language can express more than spoken language. Merely by raising an eyebrow, clenching a jaw, or softening the eyes, a person can express disapproval, anger, or love. It is a very strong method of communication.

IX Listening

Exercise 19 Listen to the first part of the lecture and find English equivalents for the Russian words and phrases

1) возможность для выпускника устроиться на работу
2) в будущем станут учеными
3) заставить задуматься
4) давать возможность, обеспечивать
5) будем надеяться

Exercise 20 Listen to the second part of the lecture and choose the correct answers.

1) Engineering graduates were asked to
a) list skills they find crucial at their work.
b) name the most important requirements for their job.
c) describe the five current roles they play at their jobs.

2) Which statement is true?
a) Graduates were provided with the list of about 50 skills to choose from.
b) Most graduates named two or three basic skills.
a) Former students listed approximately 50 essential skills.

3) Communication skills

a) imply experience to present information successfully.
b) are the skills most graduates have.
c) include only oral activities.

4) Employers consider communication skills
a) to be as important as other skills.
b) to be the most important skills of all.
c) not to be important for engineering students.

5) Which statement is not true?
a) Graduates believe that constant upgrade of their technical knowledge is essential.
b) Technical ability suggests understanding technical issues and problems only.
c) Technical ability was mentioned more often than creative skills.

6) The essential skills should be
a) developed at university.
b) developed early in the engineering career.
c) engaged in the academic studies.

Exercise 21 *Fill the gaps with words or phrases from the third part of the lecture.*

1) The opinions of whether essential skills were developed during university courses differed _____.
2) Some graduates said that the university should only provide _____ to develop the necessary skills.
3) Some people mentions that the degree of how well the skills were developed greatly depended on the _____ of the academic staff to help.
4) Some universities teach _____ which give students a head start in their careers.
5) If university departments have strong links to university business, it is considered _____ for students to develop their business-oriented skills.

Seminar 4

Using Parallel Structures and Fixing Sentence Problems

I Parallelism

Parallelism is an important element in English writing, especially when you are listing and comparing items or ideas. Parallelism means that each item in a list or comparison follows the same grammatical pattern. If you are writing a list and the first item in your wring is a noun, write all the following items as nouns also. If the first item is a n –*ing* word, make all the others –*ing* words; if it is an adverb clause, make all the others adverb clauses.
In the examples that follow, the sentences in the column on the right follow the rule of parallelism.

Not Parallel	**Parallel**
My English conversation class is made up of Chinese, Spaniards, and some are from Bosnia. The students who do well attend class, they do their homework, and practice speaking in English. The teacher wanted to know which country we came from and our future goals. The language skills of the students in the evening classes are the same as the day classes.	My English conversation class is made up of **Chinese, Spaniards,** and **Bosnians.** *(The items are all nouns.)* The students who do well **attend class, do their homework,** and **practice speaking in English.** *(The items are all verbs + complements.)* The teacher wanted to know **which country we came from** and **what our future goals were.** *(The items are both noun clauses.)* **The language skills of the students in the evening classes** are the same as **the language skills of the students in the day classes.** *(The items are both noun phrases.)*

Notes:
1.You may substitute a pronoun for the second "the language skills" in the last example:
The language skills of the students in the evening classes are the same as **those** of the students in the day classes.
2. All the words in the first item do not always have to be repeated in the second. You may repeat all or some of the words, depending on what you wish to emphasize. The following sentences are both correct:
Before you write a paper or **before you take a test,** you must organize your thoughts.
Before you **write a paper** or **take a test,** you must organize your thoughts.

Parallelism with Coordinators: *And, Or, But*

Words, phrases, and clauses that are joined by *and, or,* and *but* are written in parallel form. Notice the parallel structures joined by coordinators in the following sentences.
The Federal Air Pollution Control Administration regulates automobile exhausts, **and** the Federal Aviation Administration makes similar regulations for aircraft.
The states regulate the noise created by motor vehicles **but** not by commercial aircraft.
Pesticides cannot be sold if they have a harmful effect on humans, on animal life, **or** on the environment.

Parallelism with Correlative (Paired) Conjunctions

Use parallel forms with the paired conjunctions *both . . . and, either . . . or, neither . . . nor,* and *not only . . . but also.*
Paired conjunctions are placed directly *before* the elements they join in the sentence. Notice the parallel structures in these clauses joined by paired conjunctions:
A new law provides the means for **both** regulating pesticides **and** ordering their removal if they are dangerous.
Air pollutants may come **either** from the ocean as natural contaminants given off by sea life **or** from the internal combustion engines of automobiles.
If **neither** industry **nor** the public works toward reducing pollution problems, future generations will suffer.
Many people are **neither** concerned about pollutants **nor** worried about their future impact.

At the present time, air pollution is controlled through laws passed **not only** to <u>reduce the pollutants at their sources</u> **but also** <u>to set up acceptable standards of air quality</u>.

Exercise 1 *Two or more items in each of the following sentences are written in parallel grammatical form. Underline the items or ideas that are parallel, and circle the word or words that connect the parallel structures. The first one has been done for you as an example.*

1. An ideal environment for studying includes <u>good lighting, a spacious desk</u> (and) <u>a comfortable chair</u>.
2. You know you are truly fluent in another language when you can calculate in it and when you begin to dream in it.
3. People often spend as much time worrying about the future as planning for it.
4. You can learn a second language in the classroom, at home, or in a country where the language is spoken.
5. My new personal computer is both fast and reliable.
6. My old typewriter is neither fast nor reliable.
7. Ann is growing older but unfortunately not wiser.
8. Young people buy computers not only to do schoolwork but also to play games.
9. If industrial nations continue to burn fossil fuels and if developing nations continue to burn their rain forests, the level of CO_2 in the atmosphere will continue to increase.
10 Before the judge announced the punishment, he asked the murderer if he wanted to speak either to the victim's family or to the jury.
11. The criminal neither admitted guilt nor asked for forgiveness before he
was sent to prison.

Exercise 2 *Rewrite the following sentences in parallel form. Underline the part of the sentence that is not parallel and correct it. Remember that you do not have to repeat all the words in the second item. The first one has been done for you as an example.*

1. The disadvantages of using a credit card are overspending and <u>you pay</u> high interest rates.
<u>The disadvantages of using a credit card are overspending and paying high interest rates.</u>
2. Credit cards are accepted by department stores, airlines, and they can be used in some gas stations.

_____

_____

3. You do not need to risk carrying cash or to risk to miss a sale.

_____

4. With credit cards, you can either pay your bill with one check, or you can stretch out your payments.

_____

_____

5. You can charge both at restaurants and when you stay at hotels.

_____

6. Many people carry not only credit cards but they also carry cash.

_____

7. Many people want neither to pay off their balance monthly not do they like paying interest.

_____

_____

8. Not making any payment or to send in only the minimum payment every month is poor money management.

_____

_____

Exercise 3 *On a separate sheet of paper, write seven original sentences in parallel form, using the following conjunctions one time each. Write sentences on the topics suggested, or choose topics of your own.*

and	two weekend activities you enjoy
or	two foods you would not eat/give to a baby
but	one school subject that you excel at and one that you struggle with
both… and	two advantages of being bilingual
either… or	two places you might spend a month's vacation or a honeymoon
neither… nor	two places you would never spend a month's vacation or a honeymoon
not only… but	also two reasons to get a college degree

II Sentence problems. Sentence fragments

Sentence fragments are incomplete sentences or parts of sentences. Remember that a complete sentence must contain at least one main or independent clause.
Study the following examples of sentence fragments and the suggested methods for correcting them.
1. *Because some students work part-time while taking a full load of classes.*
Problem: This is a dependent clause. It begins with a subordinator *(because).* It does not express a complete thought because there is no independent clause.
To correct: (1) Add an independent clause.
Because some students work part-time while taking a full load of courses, **they have very little free time.**
(2) Delete the subordinator *(because).*
Some students work part-time while taking a full load of classes.
2. For example, the increase in the cost of renting an apartment. To live and work for at least a year in a foreign country.
Problem: Neither sentence has a verb.
To correct: Rewrite each sentence so that it has a verb.
For example, the increase in the cost of renting an apartment is one reason for more people being homeless.
To live and work for at least a year in a foreign country **has** always **been** my dream.
3. Teachers who give too much homework.
Problem: This is a noun *(teachers)* + an adjective clause *(who give too much homework).* The noun is the beginning of an independent clause that was never finished.
To correct: Finish the independent clause.
Teachers who give too much homework **are unpopular.**

Always check your own writing for sentence fragments. Pay particular attention to sentences beginning with subordinators *(although, since, because, if, before,* and so on). These are DANGER WORDS! Make sure that every clause beginning with these words is attached to an independent clause.

Exercise 4 *Read the following sentences. Mark them Frag, if they are sentence fragments, or Comp. if they are complete sentences. On a separate sheet of paper, rewrite each fragment to make a complete sentence.*

_____ 1. The desire of all humankind to live in peace and freedom, for example.
_____ 2. Second, a fact that men are physically stronger than women.
_____ 3. The best movie I saw last year.
_____ 4. *Titanic* was the most financially successful movie ever made, worldwide.
_____ 5. For example, many students have part-time jobs.
_____ 6. Although people want to believe that all men are created equal.
_____ 7. Finding a suitable marriage partner is a challenging task.
_____ 8. Many of my friends who did not have the opportunity to go to college.
_____ 9. Working during the morning and attending classes during the afternoon.
_____ 10. Because I do not feel that grades in college have any value.
_____ 11. A tsunami that occurred in the Indian Ocean in December 2004, killing more than 200,000 people.
_____ 12. The total energy of the tsunami was about five megatons of TNT.
_____ 13. More than twice the total explosive energy used during all of World War II, including two atomic bombs, according to one expert.

_____ 14. Evidence that the wave reached a height of 80 feet (24 metres) when coming ashore along the coastline and rose to 100 (30 metres) in some areas when travelling inland

_____ 15. Despite a lag of up to several hours between the earthquake and the tsunami, nearly all of the victims were taken completely by surprise.

Exercise 5 *Read the following short essay. Put brackets around any sentence fragment you find and mark them Frag. Then correct fragments on a separate sheet of paper.*

Women Drivers

1   Sexism[1] extends even into the area of automobile driving, it seems. Believing that they are far better drivers than women. Men consider women drivers incompetent, inattentive, and even dangerous behind the wheel.

2   However, statistics prove that women are, in fact, safer drivers than men. For example, insurance rates. Insurance rates for women are 20 percent lower than they are for men. Another proof is that more accidents are caused by male drivers between the ages of 18 and 25 than by any other group. Also, the greater percentage of accidents involving deaths caused by men. Although women are criticized for being too cautious. They are really just being safe drivers.

3   The reasons for women drivers' safer driving habits can perhaps be found in the differing attitudes of the sexes toward automobiles. On the one hand, women drivers who regard the automobile as a convenience. Like a washing machine. On the other hand, men regard the automobile as an extension of their egos. Using it as a weapon when they feel particularly aggressive. Or using it as a status symbol.

4   All in all, women are safer drivers. Because of their attitude. Men can learn to become safe drivers. If they adopt the attitude that an automobile is merely a convenience.

III Choppy sentences

Choppy sentences are sentences that are too short. Short sentences can be effective in certain situations. For instance, when you want to make an impact, use a short sentence.
Despite countless doctors' warnings, news stories, and magazine articles about the importance of eating a nutritious, balanced diet, many people resist developing healthy eating habits. Some people just like junk food.
A sentence of 25 words is followed by one of 6 words. The second sentence has greater impact because it is so short.
However, overuse of short sentences is considered poor style in academic writing.
Choppy sentences are easy to correct. Just combine two or three short sentences to make one compound or complex sentence. Your decision to make a compound or a complex sentence should be based on whether the ideas in the short sentences are equal or whether one idea is dependent on the other.
1. If the sentences express equal ideas, use coordination to combine them.
Choppy sentences: Wind is an enduring source of power. Water is also an unlimited energy source. Dams produce hydraulic power. They have existed for a long time. Windmills are relatively new.
Corrected: Both wind and water are enduring sources of power. Dams have produced hydraulic power for a long time, but windmills are relatively new.
2. If the sentences express unequal ideas, that is, if one sentence expresses a less important idea than the other, use subordination to combine them.
Choppy sentences: We must find new sources of energy. Natural sources of energy are decreasing. Solar energy is a promising new source of energy. Solar energy is energy from the sun.
Corrected: We must find new sources of energy because natural sources of energy are dwindling. Solar energy, which is energy from the sun, is a promising new source.

Exercise 6 *Improve the following choppy sentences by combining them.*

Step 1 Decide what the relationship between the sentences is.

   • Do they express equal ideas? If yes, write a compound sentence.
   Both sentences present the main idea.

Similar or equal idea	**and**
Negative equal idea	**nor**
Opposite idea	**but**
Alternative possibility	**or**
Surprising continuation	**yet**
Expected result	**so**
Reason	**for**

   • Is one idea more important than another idea? If yes, go on to Steps 2 and 3 and write a complex sentence.

Step 2 Decide which sentence expresses the most important idea. This will be the independent clause.

Step 3 Then decide what the relationship of other sentences to the main idea is and choose a subordinator that expresses that relationship.

Time	**when, after, as soon as,** and so on
Reason	**because, since,** or **as**
Contrast	**although, whereas,** and so on
Descriptive information	**who, which, that,** and so on

The first one has been done for you as an example. As you can see from the example, there may be more than one way to combine the sentences.

1. (a) Gasoline became expensive, (b) Automobile manufacturers began to produce smaller cars, (c) Smaller cars use less gasoline.
Equal /(Not equal)? Not equal.
Main idea? Sentence (b)
Relationships: Sentence (a) could be time (when) or reason (because). Sentence (c) could be reason (because) or descriptive information (which).
Combined sentence: When gasoline became more expensive, automobile manufacturers began to produce smaller cars because they use less gasoline. OR Because gasoline became more expensive, automobile manufacturers began to produce smaller cars, which use less gasoline.

2. (a) Electric cars are powered solely by batteries, (b) The new hybrid vehicles switch between electricity and gasoline.
Equal /(Not equal)?
Main idea?
Relationships:
Combined sentence:

3. (a) Government and private agencies have spent billions of dollars advertising the dangers of smoking, (b) The number of smokers is still increasing.
Equal /(Not equal)?
Main idea?
Relationships:
Combined sentence:

4. (a) Some students go to a vocational school to learn a trade, (b) Some students go to college to earn a degree.
Equal /(Not equal)?
Main idea?
Relationships:
Combined sentence:

5. (a) The grading system at our college should be abolished, (b) The students do not like getting grades, (c) The instructors do not enjoy giving grades.

Equal /(Not equal)?
Main idea?
Relationships:
Combined sentence:

6. (a) Education in a free society teaches children how to think, (b) Education in a dictatorship teaches children what to think.
Equal /(Not equal)?
Main idea?
Relationships:
Combined sentence:

IV Run-on sentences and comma splices

A run-on sentence is a sentence in which two or more independent clauses are written one after another with no punctuation. A similar error happens when two independent clauses are incorrectly joined by a comma without a coordinating conjunction. This kind of error is called a comma splice.

run-on   My family went to Australia then they emigrated to Canada.
comma splice   My family went to Australia, then they emigrated to Canada.
The ways to correct these two sentence errors are the same.
1. Add a period: My family went to Australia. Then they emigrated to Canada.
2. Add a semicolon: My family went to Australia; then they emigrated to Canada.
3. Add a coordinator: My family went to Australia, **and** then they emigrated to Canada.
4. Add a subordinator: My family went to Australia **before** they emigrated to Canada. **After** my family went to Australia, they emigrated to Canada.

Exercise 7 Correct the following run-on/comma splice sentences using the method indicated.

1. A newly arrived international student faces several challenges, for example, he or she has to cope with a new culture.
a. Add a period: _____

b. Add a semicolon: _____

2. New York City is very cosmopolitan, people from many cultures and ethnic groups live there.

a. Add a period:_____

b. Add a semicolon:_____ _____

c. Add a subordinator: _____

d. Add a coordinator: _____

3. Learning a new language is like learning to swim it takes a lot of practice.

Add a coordinator: _____

4. Ask for assistance at the reference desk in the library, a librarian is always on duty.

Add a semicolon: _____

5. Skiing is a dangerous sport you can easily break your leg or your neck.

Add a subordinator:_____

Exercise 8 *Some of the following sentences are run-ons or comma splices, and some are correct. Check each sentence. If it is incorrect, write RO or CS in the space at the left. If it is correct, leave the space blank. Then, on a separate sheet of paper, correct the incorrect sentences.*

1. Two letters arrived on Monday a third one came on Wednesday.
2. An encyclopedia is a valuable source of information it contains summaries of every area of knowledge.
3. Because of the rapid expansion of human knowledge, it is difficult to keep encyclopedias current.
4. A printed encyclopedia becomes out of date almost as soon as it is published also it is quite expensive to purchase.
5. Online encyclopedias are available to everyone with access to the Internet.
6. Articles in encyclopedias are written by experts in each subject, who are often university professors.
7. An editor of an encyclopedia does not write articles he only collects and edits articles written by subject experts.
8. To find a book on a certain subject, you used to look in a card catalog, to find a magazine article on a subject, you used to look in a periodical index.
9. Now, most libraries have thrown away their card catalogs, they have computerized catalogs that are much more efficient to use and update.
10. Many periodical indexes, which list only titles of magazine articles and indicate where to find them, have been replaced by computer indexes, some of which display abstracts and even entire articles instantly.
11. If you cannot find any information on a subject, you can always ask a librarian to help you, they are paid to assist students.

Exercise 9 *Locate the run-on/comma splice sentences in the following paragraphs. Mark them by writing RO or CS above them. Then, on a separate sheet of paper, rewrite both paragraphs, correcting the mistakes that you found. There are four errors.*

[1]Teachers at Stone Mountain State College give higher grades than teachers at 12 of the 19 other colleges in the state college system, according to a recent report from the State Institutional Research Committee. [2]This report showed that more than one-third of the undergraduate grades awarded in the spring semester 2005 were A's only 1.1 percent were F's. [3]The percentage of A's awarded to graduate students was even higher, almost two-thirds were A's.

[4]While students may be happy to receive high grades, evidence suggests that this trend is having negative consequences, investigation of the admissions criteria[2] of some graduate and professional schools indicates that the admissions offices of these schools are discounting high grades on the transcripts of SMSC students, this means that an A from SMSC is not equal to an A from other universities. [6]Grade inflation may, therefore, hurt a student from Stone Mountain State College who intends to apply to a graduate or professional school he or she may not be accepted despite a high grade point average.

V Stringy sentences

A stringy sentence is a sentence with too many clauses, usually connected with *and, but, so,* and sometimes *because*. It often results from writing the way you speak, going on and on like a string without an end. To correct a stringy sentence, divide it and/or recombine the clauses, remembering to subordinate when appropriate.

Stringy sentence: Many students attend classes all morning, and then they work all afternoon, and they also have to study at night, so they are usually exhausted by the weekend.

corrected sentence: Many students attend classes all morning and work all afternoon. Since they also have to study at night, they are usually exhausted by the weekend. OR Because many students attend classes all morning, work all afternoon, and study at night, they are usually exhausted by the weekend.

Exercise 10 *Improve these stringy sentences.*

1. He enrolled in an intermediate calculus class, but he found it too easy, so he dropped it, and he signed up for the advanced class. _____

_____

2. First-born children in a family often have more responsibility than their younger siblings, and they feel pressure to set a good example, so they often become superachievers. _____

_____

_____

3. Last-born children, on the other hand, often have little responsibility, and they may be pampered as the "baby" of the family, but they are the smallest, and they have to get people to like them, so they often develop superior social skills. _____

_____

_____

4. The students in my engineering class could not do the homework, so we got together and worked for several hours, and we finally solved all the problems. _____

_____

_____

5. The lack of rainfall has caused a severe water shortage, so people have to conserve water every day, and they also have to think of new ways to reuse water, but the situation is improving. _____

_____

_____

Exercise 11 the following paragraphs for errors in parallel structure and other sentence problems. *Identify the problem sentences and correct them. Rewrite the paragraphs on a separate sheet of paper. {Note: Not every sentence has a problem.)*

The United States: Melting Pot or Salad Bowl?

[1]The United States counts its population every 10 years, and each census[1] reveals that the racial and ethnic mix is changing dramatically, so by the year 2050, the "average" person in the United States will not be descended from[2] Europeans, but the majority of U.S. residents will trace their ancestry[3] to Africa, Asia, the Hispanic world, the Pacific Islands, or the Middle East. [2]Once the United States was a microcosm[4] of European nationalities, today the United States is a microcosm of the world. [3]The United States is no longer considered a "melting pot" society by many of its residents. [4]Instead, many people prefer the term "salad bowl." [5]They use this term to describe U.S. society. [6]U.S. society will soon be predominantly nonwhite. [7]"Melting pot" implies that the different ethnic groups blend together into one homogeneous mixture, "salad bowl" implies that nationalities, like the ingredients in a mixed green salad, retain their cultural identities.

[8]Earlier generations of immigrants believed that they had to learn English quickly not only to survive but also for success. [9]Now, many immigrant groups do not feel the same need. [10]Because there are many places in the United States where you can work, shop, get medical care, marry, divorce, and die without knowing English. [11]For example, Chinatown in San Francisco and New York. [12]Also, Los Angeles has many Vietnamese immigrants and immigrants from Mexico. [13]In addition, many immigrant groups want their children to know their own culture. [14]Many Hispanics, for instance, want their children to learn both English and study the Spanish language in school. [15]They are fighting for the right to bilingual education in many communities. [16]In many communities they are in the majority.

Exercise 12 *Listen to the podcast and fill the gaps with words or phrases*

A botnet (also known as a 1_____) is a number of Internet computers that, although their owners are 2 _____ of it, have been 3 _____ (including spam or viruses) to other computers on the Internet. Any such computer is referred to as 4 _____ - in effect, a computer "robot" or 5 _____ that serves the wishes of some master 6 _____ originator. According to a report from 7 _____, botnets -- not spam, viruses, or worms -- currently pose the biggest 8 _____ to the Internet. A report from 9 _____ came to a similar conclusion.

Computers that are coopted to serve in this unaware army of the "walking dead" are often those whose owners fail to provide effective 10 _____ . A zombie or bot is often created through an Internet port that has been left open and through which a little 11 _____ can be left for future activation. At a certain time, the 12 _____ can unleash the effects of the army by sending a single command, possibly from an Internet Relay Channel (IRC) site.

The computers that form a botnet can be programmed to 13 _____ to a specific computer, such as a Web site that can be closed down by having to handle too much traffic – 14 _____ - or, in the case of spam distribution, to many computers. The motivation for a zombie master who creates a 14 _____ may be to cripple a competitor. The motivation for a zombie master sending spam is in the money to be made. Both of them rely on 15 _____ computers that can be turned into zombies.

Exercise 13 *Listen to the podcast and fill the gaps with words or phrases*

Six degrees of separation is the theory that anyone on the planet can be connected to any other person
on the planet through a chain of acquaintances that has no more than five (1) _____. The theory was first proposed in 1929 by the Hungarian writer Frigyes Karinthy in a short story called "Chains."

In the 1950's, Ithiel de Sola Pool (MIT) and Manfred Kochen (IBM) set out to prove the theory (2) _____. Although they were able to phrase the question (given a set N of people, what is the probability that each member of N is connected to another member via $k_1, k_2, k_3...k_n$ links?), after twenty years they were still unable to solve the problem to their own satisfaction. In 1967, American sociologist Stanley Milgram devised a new way to test the theory, which he called (3)"_____." He randomly selected people in the mid-West to send packages to a stranger located in Massachusetts. The senders knew the (4)_____ name, occupation, and general location. They were instructed to send the (5)_____ to a person they knew on a first-name basis who they thought was most likely, out of all their friends, to know the target personally. That person would do the same, and so on, until the package was personally delivered to its target (6)_____. Although the (7) _____ expected the chain to include at least a hundred (8) _____, it only took (on average) between five and seven (9) _____ to get each package delivered. Milgram's findings were published in Psychology Today and inspired the phrase "six degrees of separation." Playwright John Guare (10) _____ the phrase when he chose it as the title for his 1990 play of the same name. Although Milgram's findings were (11) _____ after it was discovered that he based his conclusion on a very small number of packages, six degrees of separation became an accepted (12) _____ in pop culture after Brett C. Tjaden published a computer game on the University of Virginia's Web site based on the small-world problem. Tjaden used the Internet Movie Database (IMDB) to document (13) _____ between different actors. Time Magazine called his site, The Oracle of Bacon at Virginia, one of the "Ten Best Web Sites of 1996." In 2001, Duncan Watts, a professor at Columbia University, continued his own earlier research into the phenomenon and recreated Milgram's experiment on the Internet. Watts used an (14) _____ message as the "package" that needed to be delivered, and surprisingly, after reviewing the data collected by 48,000 senders and 19 targets (in 157 countries), Watts found that the average number of (15) _____ was indeed, six. Watts' research, and the advent of the computer age, has opened up new areas of inquiry related to six degrees of separation in (16) _____ areas of network theory such as power grid analysis, disease (17) _____, graph theory, corporate (18) _____, and computer circuitry.

VI grammar

Exercise 14 *Read the passage and analyze the use of tenses*

My research <u>lies</u> in the field of software engineering. A common theme, and long-term goal, of my research <u>is</u> *development and evolution of adaptable and dependable large-scale software systems*. Software practitioners <u>have traditionally faced</u> many problems with designing, implementing, deploying, and evolving software modules and/or systems. These problems <u>are</u> often the result of poor understanding of a system's overall architecture, unintended dependencies among its modules, decisions that <u>are made</u> too early in the development process, over-reliance on specific implementation technologies, and so on. Traditional techniques that <u>are intended</u> to remedy these problems (e.g., separation of concerns or isolation of change) <u>are</u> only partially adequate in the case of development with pre-existing, large, multi-lingual components that <u>originate</u> from multiple sources.

Exercise 15 *Put the verbs in correct tenses*

The main hypothesis of my research _____(be) that an explicit architectural focus _____ <u>(can)</u> remedy many of these difficulties and _____(enable) flexible construction and evolution of large software systems. I _____(center/ therefore) on *software architecture* as a key to developing techniques, tools, and methodologies for engineering flexible, large-scale software. Architecture _____ <u>(present)</u> a set of high-level design views of a system, enabling developers to abstract away the unnecessary details and focus on the system's building blocks (*components*), interactions (*connectors*), their structure (*configuration*), and key *properties*. A given system's architecture _____<u>(adhere/frequently)</u> to one or more *architectural styles*, which _____ <u>(be)</u> design guidelines shown in practice to result in systems with certain desired characteristics.
My Ph.D. thesis _____ <u>(be/indeed)</u> in the area of software architecture. It _____ <u>(introduce)</u> and _____ <u>(investigate)</u> C2, an architectural style for graphical user interface (GUI) intensive systems [J12]. Specifically, my thesis _____ <u>(focus)</u> on software architecture modeling and analysis mechanisms within the C2 style to support design-time system evolution. This work _____ <u>(help)</u> to motivate and inform my research over the past five years. At the same time, the scope of my research during this period _____ <u>(broaden/significantly)</u>. I _____ <u>(conduct)</u> work in four related areas:
1. the principles underlying software architectures;
2. software architecture modeling and analysis;
3. the relationship of software architectures to other software system artifacts; and
4. the role of software architecture at system runtime.
In doing so, I _____ <u>(expand)</u> my focus beyond a single style (C2) to a large class of architectural styles for modern distributed systems (client-server, pipe-and-filter, peer-to-peer, publish-subscribe, and so on). Another significant facet of my work _____ <u>(be)</u> applying the principles of software architecture to the emerging class of mobile, possibly embedded systems running on resource-constrained platforms.
In the remainder of this document, I _____ <u>(outline)</u> the challenges and major results of my work in the above four areas. I _____ <u>(highlight/also)</u> the research grants that _____ <u>(support)</u> the different efforts, and technology transition opportunities that _____ <u>(emerge)</u> from my work. I _____ <u>(conclude)</u> the research summary by discussing my future research plans. While I _____ <u>(use)</u> first person singular in my exposition for convenience, a number of the described research results _____ <u>(emerge)</u> from collaborative efforts, as indicated in the references cited.

I Introductions to articles

The introduction does more than tell the reader what the subject of the paper or article is, though obviously it must do that. It must also capture the reader's attention at the beginning, or they will never continue to the end. A good introduction gets the reader wanting more.

Points to include in an introduction

In the introduction to an article you present your topic in general, then narrow the focus on the topic and make a clear thesis statement. Your thesis statement expresses the central idea of your paper. Everything else you write flows from this and depends on it. The thesis statement needs to be clear, and concisely and precisely stated.

Topic, Topic Sentence, Thesis, Hypothesis

These terms are all often associated with introductory paragraphs. They are different and not all are found in every type of paper.

ƒ *Topic*

It is the subject of the paper. *Chemistry* or *Amino Acids, Biology* or *Aquatic Invertebrates* could all be topics.

ƒ *Topic sentence*

It states the topic of the paragraph; in an introduction it states the topic of the paper. It is generally at the beginning of a paragraph.

ƒ *Thesis*

A proposition phrased in a thesis statement. In the thesis statement the whole of what the writer is arguing is said in one clear and concise sentence.

ƒ *Hypothesis*

A conjecture, a tentative or working theory, proposition or explanation used as a premise for reasoning, argument or investigation.

A hypothesis proved false is as important as one proved true.

Sample introduction to an article

The Use of Hemp in Reprocessed Paper Manufacture

As recycling paper becomes more common throughout the world, new uses for the reprocessed product are increasing. Paper bags and cardboard boxes, the pages of the latest best-selling paperback, disposable cups, paper towels and toilet paper all use recycled paper with varied effectiveness. The paper bags tear easier than those made of virgin paper. The paperbacks begin to crumble in a few short years, the paper towels break down quickly into mush and the paper cups leak before the coffee has even had a chance to cool. It is the nature of recycled paper. In the recycling process the waste paper is broken down and reformed. A result of the process is that the new paper has shorter fibres and is more brittle, with less tensile strength than the original paper.

Finding ways of adding strength to the recycled product, thereby making it a more usable and reliable material, has given rise to a whole research industry. Scientists are exploring changes to the recycling processes hoping to do less damage to the fibers. Additives to the paper are being tried at different stages of manufacturing with mixed results. The adding of non-recyclable materials to the papers does make them stronger, but defeats the purpose.

Finding suitable materials that meet the structural, recyclable and cost effective requirements are driving more and more researches to marijuana. No, not to smoke but for the fibres found in the marijuana plants. Marijuana, or Hemp (Cannabis sativa), fibres are proving to be one of the most promising recyclable additives. Papers with hemp fibres added in the pulp stage are proving to be stronger and more durable than those made of recycled paper alone. Hemp is the solution for the paper industry, certainly to the structure problems of recycled papers.

Analysis of the introduction

ƒ The introduction presents the topic *Recycled Paper* by stating very general information that most readers are already aware of.

ƒ The topic is narrowed down to a particular problem with recycled paper: its lack of structural strength.

ƒ This is then further narrowed down to a thesis statement, saying that hemp is the solution to the problem.

ƒ Note that the write suggests that hemp may perhaps have something more to offer the paper industry than just its strength

ƒ Note how the writer goes beyond the basic information in order to capture the reader's attention by planting a **hook**. Here the hook was Marijuana. A hook causes the reader to pause and pay attention, here to find out what marijuana has to do with recycled paper. The writer goes onto explain that it is a specific product of the hemp plant, fibre, that is a solution to the problem of weak and brittle recycled paper.

II Introductions to research papers

Introductions to scientific research papers differ from those in articles in certain respects:

ƒ In papers, the introduction is direct and to the point. It is therefore somewhat shorter than in an article, maybe only one paragraph long.

ƒ In some papers, the introduction is actually a named section of the paper. It follows the title, and in this case it is itself entitled 'Introduction'.

ƒ It may have additional paragraphs containing a review of the literature and any pertinent background information. Even though it is a section, you should still be brief.

ƒ Although you need to capture the reader's interest as in an article introduction, you should avoid anecdotes and illustrations. You need to

* tell the reader what the paper is about
* say what the paper contains and says
* explain why what it says is important and worth reading

Points to be covered in the introduction to a research paper

The introduction to a research paper should involve the reader by answering these questions:

ƒ What was your reason for doing the research? What in general was the research attempting to find out?

ƒ What was your hypothesis or thesis? What specifically was the research attempting to prove?

ƒ What background information is pertinent to an understanding of the paper?

ƒ What literature is pertinent? What other studies have explored the subject? Note that all literature must be fully documented.

Key features of introduction:

a) Introduction to the topic of your research paper;
b) Background information about your topic
c) Justification for your choice of topic focus
d) Outline of the structure of your research statement
e) Definition of key terms related to the topic
f) Thesis statement (your view point or perspective)
g) Your purpose in writing the research statement

Exercise 1 Which features of introduction must always be included in the introduction and which are optional?

Example of an introduction to a research paper

As recycling paper becomes more common throughout the world, new uses for the reprocessed product are increasing. In the recycling process the waste paper is broken down and reformed. A result of the process is that the new paper has shorter fibres and is more brittle, with less tensile strength than the original paper. Finding ways of adding strength to the recycled product, therefore making it a more usable material was the purpose behind this research project.

This passage would then be followed by a thesis statement or by a hypothesis.

ƒ

A sample thesis statement for this opening would be:

> Recycled paper products with added Hemp (Cannabis sativa) fibres are
> stronger and more durable than products made of recycled paper alone.

Your thesis statement expresses the central idea of your paper. It is your conclusion, and the rest of the paper has to prove it through evidence and examples. The thesis statement needs to be clearly, concisely and precisely stated.

ƒ Many research papers propose a hypothesis instead of a thesis statement, especially if they are presenting research and findings and the conclusions are only tentative. The hypothesis states succinctly what the research is attempting to prove and this directs the structure of the experiment.
A hypothesis for the above research might be:

> It was hypothesised that the longer fibres of the Hemp plant (Cannabis
> sativa), when added to theshorter recycled paper fibres during the
> manufacturing process, will result in stronger recycled paper products.

Sample phrases you can use in introductions
Stating your purpose
In this paper, it will be shown that …
In this paper, … will be discussed / are considered.
The present paper examines / presents …
In this article, we report on …
Our / My intention here is to highlight …
In the following pages, we shall propose…
This article will concentrate/ focus on the arguments …
The key question that this article will address is whether …
This paper will report on work already carried out in this area.
Relating your paper to current work
In recent years, … has become a topic of lively debate.
The issue of … has become controversial recently.
The question of … has been thoroughly researched over the last few years.
Indicating the structure of your paper
The article has (6) main sections.
Firstly, we shall examine the question of…
The next section briefly outlines …
After a short discussion of …, an overview of … will be given.
This will be followed by …
The final section will present …
I / We shall then go on to suggest …

Exercise 2 *Discuss the features and then look at how certain features can be identified*

The application of renewable energy technology in remote areas
Our life is heavily dependent on the supply of energy. After World War II, especially, developed countries received the great benefits of electricity. However, today more than 30% of the global population still live in off-grid areas, without electricity. This is mostly in developing countries or remote parts of developed countries, such as mountainous areas or isolated islands. Economically, it would be very challenging to produce electricity for these areas. As developing countries grow economically, the demand for energy will increase rapidly, thus adding to the pollution problems caused by fossil fuels. Renewable energy technology is the solution to these problems. This essay will first demonstrate the need for electricity in remote areas, and then the extent to which renewable energy technology can meet this need in remote areas will be examined by looking at some examples.

feature	example from the text
Introduction to the topic	Our life is heavily dependent on the supply of energy.
Background information	After World War II, especially, developed countries received the great benefits of electricity. However, today more than 30% of the global population still live in off-grid areas, without electricity. This is mostly in developing countries or remote parts of developed countries, such as mountainous areas or isolated islands.
Justification	To show the problems related to the production of electricity in developing countries, as well as the pollution caused by using fossil fuels.

Outline of the structure	This essay will first demonstrate the demand for electricity in remote areas, and then the extent to which renewable energy technology can meet this need in remote areas will be examined by looking at some examples.
Definition of key terms	not included
Thesis statement	Renewable energy technology is the solution to these problems.
purpose	To show how to overcome the problem (by using renewable energy technology).

From your discussion about the introduction, it will be clear that certain features overlap, e.g., background information may be considered in part as justification, and the thesis statement may be linked with the writer's purpose. Furthermore, certain features are not always included, for example, in this introduction there is no definition of *renewable energy.*

Exercise 3 Identify the features listed above in each of Introductions 2-4. Underline these features and write the letter (a-g) in the margin opposite each feature.

(1) Brand communication in China

Since China began to develop economically and to open up to world trade in the early 1980s, many international companies have entered the Chinese market. In the beginning, many worldwide companies entered the market with confidence and kept their customary management system and market strategy approach. However, they soon found this approach was not suitable for the Chinese economic environment, and they had to find a way to adapt to the new situation. Some of the European and American companies cooperated with Japanese companies, because they wanted to utilise the Japanese experience in the Asian market when marketing their products. They were interested in brand communication, which involves using a series of effective marketing strategies. This approach appears to work well in China. The issue of brand communication, including examining why this approach is necessary, and the steps involved in setting up promotion techniques to promote the prestige of a brand, will be discussed in this project.

(2) Downsizing as a necessity for survival

Over the past decade, *an uncertain economic climate and* the rapid development of *technology* have led to an increasingly sophisticated business environment. Under these rapid changes, in order to gain competitive advantages, organisations are being increasingly reoriented or converged. Downsizing (Steven et al., 1998) is a response to the external environment, as companies are attempting to reposition themselves so as to gain a competitive advantage in an uncertain marketplace. Emphasis is on lean and mean' as an effective way for organisations to achieve the lean' purposes of downsizing. Downsizing is necessary for survival in many cases. If human resource managers lack an appropriate downsizing programme, they will be faced with negative feedback from employees. As a result, it will lead to the opposite effect to the lean' performance and efficient purposes of downsizing. This project will examine how to present a positive vision of downsizing to employees. First, the purpose of downsizing will be addressed. Then, examples of the characteristics of an effective downsizing process will be examined. In the final part, three sets of data that evaluate the process of downsizing will be explored.

(3) The development of a global company

'Global' means worldwide. But now does a company become a global company? Are there benefits to becoming a global company? This essay will first explain what a global company is, and then look at the difference between this and a non-global company. Secondly, the essay will explain global strategy and the benefits of global strategies. Finally, a case study of the globalising development of Philips will be considered.

III Article conclusions

A good introduction encourages the reader to read on; it sets the tone for the article but it may fade in the reader's memory. What is remembered, on the other hand, is the conclusion. The conclusion should be an anchor in the reader's mind, a place where the whole of the essay is attached; a weak ending soon loses its hold and the essay is forgotten.

The last paragraph is a conclusion, an ending, not just a stopping. It should not simply be a repetition of the introduction, but should take account of all that has been developed in the main body. However, it is also not just a summary of your main points; it is the ending, so you should add something extra, something to 'complete' the work, to round it off.

Points to include in a conclusion

What you may include in your conclusion

* a summary of your main points, but written in a different way, so that the reader can get a different perspective on them

* your evaluation of the topic - this may be a restatement of your introduction, or modified in light of the evidence
* an amplification or extension of your thesis statement, logically following on from your main points in the body
* your proposed solution to the problem you have discussed
* a reconciliation between two opposing points of view
* suggestions for further investigations into the topic or issue

What you should not include in your conclusion
* the presentation of your thesis statement
* completely new evidence or points in support of your thesis statement
* the start of a new topic
* anything which requires a detailed exposition
* an opposing argument which puts into question or undermines your own

Example of a conclusion

Refer back to the sample introduction in **I introductions to articles** *The Use of Hemp in Reprocessed Paper Manufacture*
After the introduction, the body of the paper presents arguments for the use of hemp:
The recycling process and the structure of the hemp plant are briefly explained.
It is said that comparatively fewer natural and human resources are used to grow hemp rather than a tree to produce the same amount of fibre. Other paper additives are discussed and shown to be less acceptable and cost effective than hemp.
Hemp is offered as an alternative to wood-based papers altogether.
Other uses of hemp are briefly mentioned, pointing out that the plant is more than a solution to a single problem.

Sample conclusion

Society tends to view certain topics through narrow lenses and from one viewpoint, as either black or white, good or evil – but the viewpoints and attitudes change. In the recent past, hemp was primarily considered a fibre for use in ropes and fabrics, but with the rise of the counter-culture of the mid-twentieth century and its focus on drugs, the lowly source of fibre, hemp, became the infamous marijuana, pot, dope. It was stigmatized, outlawed and vilified, forced into hiding. Today that attitude bears re-evaluation.
Apart from the medicinal qualities of marijuana, its other practical applications surely warrant a second look at the plant and the controversy surrounding it. Today, new varieties of hemp are available which are easily and quickly grown and resource-stingy but do not have enough THC (tetrahydrocannabinol) to have any narcotic or intoxicating effects, yet society still fearfully turns its back on one of the least expensive, most versatile natural fibres available.
As societies seek ways to protect the forests and the environment as a whole, abandoning such a useful and environmentally friendly raw material as hemp seems particularly shortsighted. Still, this is not the first, and doubtless not the last, time that society has turned its back on the potential benefits of something because it has already acquired a bad name.

Points to note
 The conclusion is mainly a comment on what the paper has said, drawing conclusions.
 After devoting the paper to supporting and promoting the qualities of hemp, the author briefly and effectively deals with the opposition to the plant.
 The author then finishes with a last appeal that pointedly leaves the readers to re-evaluate their attitudes about hemp.

IV Research paper conclusions

In a research paper 'Conclusions' is a separate section, as is the Introduction. It is clearly labelled Conclusions, and follows the sections Methods and Materials, Results, and Discussion.
In most ways the Conclusion section of a research paper is easier to write than that of an essay or article. It must contain four straightforward elements:
1) Conclusions about the hypothesis posed in the introduction

Did the hypothesis prove to be correct or incorrect? How? Why? How may the problem be rehypothesized?

2) Results of the research – and their theoretical implications

What did the research actually reveal? What was observed? Not only what do the findings indicate about the research done, but also what broader aspects might they reveal and explain?

3) Possible hypotheses raised by the results

What questions do the results raise? What possible answers or explanations can be hypothesised?

4) Specific lines of additional research raised by the results

At each step of the research new questions arose; how might they be answered or explained?

How these conclusions are presented depends on the research done and the demands of the Style sheet for the particular field.

Sample phrases you can use in conclusions

Summarising what you have done

In conclusion, we can say that…

In this paper, we have seen that …

This research paper has clearly shown that …

The discussion in this article has given an overview of…

This paper has provided a systematic study of …

From the research that has been carried out, we can conclude that…

The aim of the present paper was to examine whether … and this has now been achieved.

Finally, it is worth pointing out that …

Indicating the limitations of your own work

This article has only been able to touch on the most general features of …

Even a preliminary study, such as the one reported here, has highlighted the need for …

Looking to the future and further research

Clearly, further studies are needed to understand / prove …

In order to validate the work we have carried out, a more in-depth investigation into … is needed.

The results of this research could assist policy makers to…

Exercise 4 Identify the features in each of the following conclusions

Conclusion 1

Whereas the aim of this essay was to evaluate the effect of technology transfer brought about by multinational corporations (MNCs), it has become a kind of summary of some researchers' theories. However, certain conclusions can be drawn.

Although investment into less developed countries by multinational corporations has many positive effects, there are also some problems. One of these is the problem of employee training. As mentioned in Section 3, with the present state of affairs, technology diffusion into developing countries via vocational training is not working effectively. One possible reason is that MNCs have to protect their advantage of knowledge and investment-intensive technology in order not to lose their competitiveness in the market. The reason MNCs invest in less developed countries is to achieve the comparative advantage of low wages and cheap resources. Although vocational training is essential for multinational corporations to succeed in the markets of these countries, they do not directly aim to develop the level of technology in less developed countries. In other words, the progress of technology in less developed countries is the secondary product of multinational enterprises. The original idea that this technology would transfer beyond efficient employee training for a specific purpose seems to have been an idealistic theoretical concept. However, if this situation is not changed, the technological gap between developed countries and developing countries will increase, leading to a widening of the gap between rich developed countries and poor developing countries.

Fortunately, as mentioned in Section 4, sophisticated companies have begun to realise their social responsibility, and recently have been trying to cooperate with governments and non-governmental organisations. It is to be hoped that this trend will continue, and thus MNCs will make a contribution to less developed countries through the development of transferable skills that can be applied to technological development, rather than using less developed countries purely for their own benefit.

Conclusion 2

Industrialised countries have received a considerable number of benefits from energy, especially electricity, and the demand for energy has been increasing. However, as discussed above, there are still many people who do not have access to electric light, as a conventional energy supply system is not suitable in remote areas. In order to solve the

energy crisis in remote areas, renewable energy technology has great potential. Although only two kinds of technologies have been examined in this work, other renewable energy technologies are advantageous, and these technologies have also been accepted in some areas as a main energy supply system. Nevertheless, even if renewable energy technologies are applied, it is not easy to establish the technology in poor societies. When this technology is applied, the concept of appropriate technology is extremely important. The designer needs to grasp the economic, technical, social and cultural background of the area. He/she also needs to think of the characteristics of each technology, as well as climatic conditions. Only well-planned appropriate technology that takes these factors into consideration will work in solving the serious energy problems in remote areas.

Conclusion 3
This essay has discussed the features of language aptitude. It has emerged that language aptitude is often applied to the classroom situation, but not in real-life situations. As second language acquisition is such a complicated process, it is necessary to explore the influence of age, motivation, attitude, personality and the mother tongue, in order to understand the process more fully. It would be interesting to examine how these factors can influence language learning, and compensate for the natural aptitude that learners possess to a greater or lesser extent, as this project has shown.

Conclusion 4
In the spate of bank crises in Asia, Korea's banking system also suffered the hardest time in its history. Seventeen commercial banks were closed and more than 40,000 bank employees were expelled from their companies. It cost 137.1 trillion won (equivalent to 110 billion US dollars) to restore the banking system. The crisis was inevitable because it was an eruption of deep-rooted problems, such as policy mistakes and poor bank management. However, Korea's banks successfully weathered the crisis. As of June 2002, Korea's banks recorded an historically high net profit, and their capital structures are the soundest in the world. Future prospects are good.
There are a number of factors which contributed to this success. Of these success factors, the following seem to be key. First, the Korean government followed many valuable lessons suggested by empirical studies. For example, it set up prompt and massive action plans, including a huge amount of public funds. It also maintained its strict stances at all times. It introduced a considerable number of standard global regulations and incentive systems to enhance the competition. Secondly, change in the political power of the time played a key role in implementing strict policies for restructuring. As the new government was relatively free from responsibility for the crisis and political interests, they could undertake firm action. Thirdly, nationwide consensus for changes strongly supported government reforms. The Korean people knew that change was needed in order to survive. Eventually, encouraged by nationwide consensus, the new government dared to challenge the tough task of restructuring the banking system.

V The concluding sentence

The concluding sentence in a paragraph can:
-summarise the main ideas of your paragraph;
-restate the main topic;
-make a conclusion from the information given in the paragraph;
-predict the future;
-suggest possible solutions;
-link the ideas of the paragraph to the ideas of the following paragraph;
-limitations of the work

Exercise 5 *Read the following paragraphs, adapted from Held, D. et al. (1999), Global Transformations, Polity Press. What function does the final sentence in each paragraph have?*

(1) The rapidity or velocity of migration can be assessed in two ways. First, the movement of people across regions in given time periods can be considered, assessing the length of time a mass migration takes from its inception to its conclusion. Second, velocity in individual terms can be considered - the amount of time it takes a migrant to get from his or her original locale to a new host country. Clearly, changes in transportation technology have made a major difference in this respect.

(2) Trade in the sense of the exchange of goods and services between people over distance has a long history. Great trading empires have arisen periodically ever since regular long-distance travel became possible. But international trade, the exchange of goods and services between nations, by definition only emerged with the establishment of

the nation state. Trade has been entwined with the rise of the modern state and its fortunes: states required revenues, above all to wage military campaigns, and trade offered an obvious source of funds. Identifying historical patterns of trade globalization is the primary objective of this chapter, and this entails deploying the analytical framework developed in the introduction.

(3) Rapid demographic growth is a key factor in explaining the increasing immiseration of sub-Saharan Africa and processes of desertification and soil decline. This has contributed to the growing economic problems of the region and its mounting international debts. Thus environmental problems in single African states have spilt over into the international politics of banking. The resolution of these international issues has involved political contests and struggles between Western governments and their financial sectors. In the future, the demographic and environmental squeeze on the South may contribute towards political instability and outward migration, both of which will affect a widening pool of other nations, internationally and domestically.

(4) In the last twenty years, a series of technological and political changes have transformed the televisual landscape and have contributed to the globalization of television as a medium and as an industry. First and foremost, the number of countries with broadcasting systems and number of televisions available on which to watch their output has steadily risen. From its Western core, television has spread in the postwar years across Eastern Europe and the Soviet Union, into Latin America, Asia and Africa. Second, first within the West, but later in other areas as well, the number of terrestrial channels has steadily climbed. In part, this has been because governments have been prepared to enlarge the funding base for television companies, for there is clearly a limit to the numbers of channels and programmes that can be funded by subsidy/licence fee alone. By allowing advertising revenue and sponsorship into the television funding mix - be it through public corporations taking advertising or wholly private stations - the potential output and funding base of national TV has risen. However, the expansion of output has rarely, if ever, been matched by a corresponding increase in the capacity of national audiovisual industries to supply all of the potential broadcast slots. Thus, the expansion of television output across and within countries has fuelled the demand for television imports.

Exercise 6 The concluding sentences from the following paragraphs from student essays have been removed. Can you write a suitable one for each paragraph?

(1) Global warming has had a number of negative effects on the environment. Agricultural crops have been damaged; for example, last year's rice production decreased, so many people are suffering from famine. Many African countries, especially, have a much lower yield of agricultural production. Furthermore, the sea levels are rising around the world, which has led to the disappearance of many islands. Global warming can also affect people's health, in particular, excessive ultraviolet radiation, which results from the hole in the ozone layer, can cause potentially fatal skin cancers. It can also affect the immune system.

_____

_____

(2) There are two major reasons for the declining quality in the teaching. One problem is the pressure of the increasing population on the demand for school places. This situation has placed excessive strain on the system as it tries to meet these demands, and it has also led to a declining quality in the teaching. As a result, although a large proportion of students may enter the school system, only a small percentage proceed to high school level, and an even smaller number finish high school. The other reason is that teachers' salaries are low. Watson (1980) states that 'teachers in Thailand remain ill paid'; until more money can be injected into teachers' salaries, thereby attracting better staff, the quality of teaching will remain low, and continue to be one of the causes of poor performance.

_____

_____

(3) The development of information technology has meant that many businesses have been able to reduce their running costs. This revolution has helped reduce the need for paper-handling operations and other routine work. However, it has also enabled companies to dismantle their main offices, and thus cut overhead costs, as many employees can now work at home or in satellite offices, using computers and telecommunication devices.

_____

_____

Exercise 7 The following sentences form the conclusion to an essay about the benefits of higher education. How would you rearrange the following sentences to form a more effective conclusion?

___ In that sense, the educational level is more likely to be improved and more efficient.

___ To conclude, it seems that the universities and higher education establishments have been of widespread importance in the improvement and developments realised in modern societies.

___ However, more should be done to ensure further improvement and participation of those bodies in the development process, for instance the cancellation of tuition fees, or at least a reduction.

Exercise 8 *How would you rearrange the following sentences to form a more effective conclusion?*

___ However, as most people recognise, many developed countries use international organisations as a curtain to achieve their purposes, as by far the biggest beneficiaries of tobacco production are the developed countries, which gain $100 billion a year from taxes on tobacco.

___ This is why a consideration of this situation should lead to a ban on tobacco consumption being introduced, resulting in fewer casualties. However, there are many who believe that, despite repeated efforts to instigate change, the present situation will remain indefinitely.

___ To conclude, it is known that there are so many possible solutions to tobacco consumption's problems that it would be impossible to consider them in an essay of this length.

___ On the other hand, they often respond to tobacco problems by suggesting alternatives that benefit their interests, but not those of the developing countries, as discussed in this paper, and they use international organisations to introduce them.

VI Grammar

Exercise 9 *Explain the use of articles*

Underlying Principles of Software Architecture
Software architecture has emerged as a research discipline within the past 15 years. A number of key concepts, characteristics, and relationships within this area still remain unexplored and poorly understood. A part of my work has tried to remedy this shortcoming. My work in this area comprises four broad-based, foundational studies. These studies have served to inform and directly motivate my other research efforts.
Architectural Description — The first foundational study deals with the nature of software architecture modeling notations, referred to as architecture description languages (ADLs). I have developed a classification framework for ADLs that identifies the key dimensions of architectural description at the level of individual components and connectors, as well as entire architectures. I have applied this framework to a large cross-section of existing ADLs. In the process, I have also shown how the framework can be used for ADL comparison. The paper that resulted from this work [J9] is included in this packet. This paper has become widely cited and has been selected by Grady Booch, a software design pioneer, as one of the 50 "seminal papers in software architecture".
I have recently also conducted a study of the applicability of existing ADLs to the domain of embedded systems [C10], and a collaborative project whose goal was to assess the use of multiple ADLs in concert in an actual embedded system project [C2, C3].

Exercise 10 *Fill in the articles where necessary*

Architectural vs. Design Models — … closely related study to that of … ADLs has dealt with … relationship of … architectural modeling, which has only relatively recently become … topic of … interest to … software engineering researchers, with … design modeling, which has been studied comparatively much longer. Specifically, I have selected … Unified Modeling Language (UML) as … target design language for this study. UML is … extensible collection of … loosely integrated notations that are intended to model … different aspects of … software system's design. … UML has become … de-facto standard software design language. Soon after its emergence, it was frequently claimed that … UML can also be used for … architectural modeling. My study was … first to show … precise relationship between … ADLs and … UML, and to provide … evidence of … UML's strengths, but also … deficiencies as … possible ADL. This study resulted in … series of … publications [J7, C47, C50, I6].

Exercise 11 *Fill in the articles where necessary*

Software Connectors — One distinguishing aspect of software architectures is their explicit focus on and support for software connectors. Connectors capture interactions among components and are widely considered to be first-class modeling constructs in software architectures. My third foundational study has dealt with understanding nature, types, and key characteristics of software interactions. Study resulted in identification of four fundamental

roles of software connectors (communication, coordination, conversion, and facilitation), eight connector types, and comprehensive classification of their dimensions and values [C18, C37, C41, I5]. Primary publication that emerged from this study [C37] has been widely cited as definitive study of its kind to date and is included in this packet.

Exercise 12 Fill in the articles and pronouns (my/this/these)

Architectural Styles — Fourth foundational study has investigated shared properties of architectural styles. Characterization of software connectors directly enabled study. While components are application-specific processing and storage elements in software architecture, connectors are application-independent (and thus potentially style-wide) interaction facilities. Analysis of large number of distributed systems' styles has identified five orthogonal dimensions of style characterization: data, structure, topology, behavior, and interaction [C19]. Characterization has been used as basis for supporting style-based system design and development in emerging world of handheld computing (further discussed below) [J5]. Novel characterization also has allowed identification of small number of recurring architectural *primitives* that can be composed to describe five style dimensions [C6, C12]. Resulting project will be referred to as *Alfa* below.

Research Grants — Two primary sources of support for studies have been NSF CAREER [G4] and DARPA DASADA [G7] grants. Study of ADLs in context of embedded systems was supported by NASA HDCP [G3] grant. Recent grant from Boeing [G5] is geared to applying Alfa in development of architectural styles for military tactical radio systems.

Ph.D. Students — Studies of software connectors and architectural styles (including Alfa project) have been spearheaded by doctoral student Nikunj Mehta, who graduated in September 2004. Study of applicability of ADLs to domain of embedded systems has been led by doctoral student Roshanak Roshandel.

VII Listening

Exercise 13 Listen to the first part of the lecture and find English equivalents for the Russian words and phrases

1) общий, в целом
2) цель, направленность
3) касаться, затрагивать, иметь дело
4) распознать, определить

Exercise 14 Listen to the second part of the lecture and find English equivalents for the Russian words and phrases

1) набор убеждений
2) относительно (чего-л)
3) повсеместно разделяется
4) восприятие
5) относительно надежный

Exercise 15 Listen to the third part of the lecture and choose the best answer

1) Australia today
a) is much similar to the Australia forty years ago.
b) is oriented at the global market.
c) tries to preserve its culture

2) If you want to expand internationally,
a) you should market your product regardless the values of different countries.
b) local awareness is used to market the product.
c) it is necessary to take into account feelings of people in different countries.

3) China had been an unfriendly market for mid-range fashion clothes because
a) there was no demand for them.
b) people preferred luxury clothes.

c) consumer tastes were oriented at traditional clothes.

4) European retailers have been successful in China in recent years because
a) office workers created a demand for European clothes.
b) Zara and H&M launched their businesses there.
c) consumer tastes there were unique.

Exercise 16 *Listen to the fourth part of the lecture and choose the best answer*

1) Which statement is true?
a) Businesses prefer operating in the English language as almost all foreigners can speak English.
b) One-third of business executives in Europe can conduct business in two foreign languages.
c) British companies are less willing to operate in a customer's own language than mainland companies.

2) Which statement is not true?
a) The brand name of Kentucky Fried Chicken is different in French-speaking Quebec and in France.
b) Kentucky Fried Chicken translated their brand name for some parts of the USA.
c) Spanish-speaking countries have another brand name for Kentucky Fried Chicken.

3) Which thing is not taken into account when considering the best way to advertise a product in a foreign country?
a) language style
b) intonation
c) words

4) What was the problem with KFC?
a) They translated their slogan in a wrong way.
b) Their original slogan was offensive for the Chinese.
c) Their slogan did not reflect the company's image.

Seminar 6

I Paragraph structure

Paragraphs are the essential building blocks of your writing. They mark the flow of your argument, with each paragraph focusing on one main idea and a cluster of connected sentences to expound upon and amplify it. Your argument progresses by moving from the main idea in one paragraph to the main idea in the next. Paragraphs also provide the reader with visual help in following your argument as they appear as separate blocks of text on the printed page.

Length of a paragraph

• There is no ideal length that can apply to all paragraphs since length depends largely on the content. However, as a general guide, it is helpful to the reader to keep most of your paragraphs to between seven and fourteen lines in length (say, between three and six or seven sentences).

• Occasionally, paragraphs can be shorter than this (where a point needs to be made briefly or with special emphasis) or longer (where more detailed elaboration of a point is needed).

• For the reader, too many short paragraphs make your writing too bitty, while too many long ones makes it rather heavy and difficult to follow.

Number of ideas in a paragraph

There is normally only one main idea in each paragraph and this is expressed in a topic sentence. The other sentences support and expand on the idea in the topic sentence in different ways. The last sentence can often be important too, as it can be used to summarise the gist of the paragraph.

Structure of a paragraph

There is no single pattern that will apply to all paragraphs. Following the topic sentence, the other sentences can have a variety of functions, e.g.:

• clarifying or re-stating the main idea
• explaining the idea
• qualifying the main point in someway
• providing examples
• giving supporting evidence
• commenting on the main idea.

There is also some linking, either stated or implied, with the previous and the following paragraphs.

Exercise 1 *Read the text about gold and answer the questions:*

1) What is the topic of the paragraph?
2) What two main points does the writer make about the topic?
3) In which two sentences does the writer say that there are two main points?
4) What examples does the writer use to support each point?

[1]Gold, a precious metal, is prized for two important characteristics. [2]First of all, gold has a lustrous beauty that is resistant to corrosion. [3]Therefore, it is suitable for jewelry, coins, and ornamental purposes. [4]Gold never needs to be polished and will remain beautiful forever. [5]For example, a Macedonian coin remains as untarnished today as the day it was made 25 centuries ago. [6]Another important characteristic of gold is its usefulness to industry and science. [7]For many years, it has been used in hundreds of industrial applications, such as photography and dentistry. [8]The most recent use of gold is in astronauts' suits. [9]Astronauts wear gold-plated heat shields for protection when they go outside spaceships in space. [10]In conclusion, gold is treasured not only for its beauty but also for its utility.

II Parts of a paragraph

All paragraphs have a topic sentence and supporting sentences, and some paragraphs also have a concluding sentence.

The topic sentence states the main idea of the paragraph. It not only names the topic of the paragraph, but it also limits the topic to one specific area that can be discussed completely in the space of a single paragraph. The part of the topic sentence that announces the specific area to be discussed is called the controlling idea. Notice how the topic sentence of the model states both the topic and the controlling idea:

   topic   controlling idea
Gold, a precious metal, is prized for <u>two important characteristics</u>.

Supporting sentences develop the topic sentence. That is, they explain or prove the topic sentence by giving more information about it. Following are some of the supporting sentences that explain the topic sentence about gold.

First of all, gold has a lustrous beauty that is resistant to corrosion.

For example, a Macedonian coin remains as untarnished today as the day it was made 25 centuries ago.

Another important characteristic of gold is its usefulness to industry and science. The most recent use of gold is in astronauts' suits.

The concluding sentence signals the end of the paragraph and leaves the reader with important points to remember:

In conclusion, gold is treasured not only for its beauty but also for its utility.

Concluding sentences are customary for stand-alone paragraphs. However, paragraphs that are parts of a longer piece of writing usually do not need concluding sentences.

III Topic sentence

Every good paragraph has a topic sentence, which clearly states the topic and the controlling idea of the paragraph. A topic sentence is the most important sentence in a paragraph. It briefly indicates what the paragraph is going to discuss. For this reason, the topic sentence is a helpful guide to both the writer and the reader. The writer can see what information to include (and what information to exclude). The reader can see what the paragraph is going to be about and is therefore better prepared to understand it. For example, in the model paragraph on gold, the topic sentence alerts the reader to look for *two* characteristics.

Here are three important points to remember about a topic sentence.

1. A topic sentence is a complete sentence; that is, it contains at least one subject and one verb. The following are *not* complete sentences because they do not have verbs:

Driving on freeways.

How to register for college classes.

The rise of indie films.

2. A topic sentence contains both a topic and a controlling idea. It names the topic and then limits the topic to a specific area to be discussed in the space of a single paragraph.

Driving on freeways)requires <u>skill and alertness</u>.

The rise of indie films is due to <u>several factors.</u>

3. A topic sentence is the most general statement in the paragraph because it gives only the main idea. It does not give any specific details. A topic sentence is like the name of a particular course on a restaurant menu. When you order food in a restaurant, you want to know more about a particular course than just "meat" or "soup" or "salad." You want to know generally what kind of salad it is. Potato salad? Mixed green salad? Fruit salad? However, you do not necessarily want to know all the ingredients. Similarly, a reader wants to know generally what to expect in a paragraph, but he or she does not want to learn all the details in the first sentence.

Following is a general statement that could serve as a topic sentence.

The Arabic origin of many English words is not always obvious.

The following sentence on the other hand, is *too specific.* It could serve as a supporting sentence but not as a topic sentence.

The slang expression *so long* (meaning "good-bye") is probably a corruption of the Arabic *salaam.*

This sentence is *too general.*

English has been influenced by other languages.

The topic sentence is usually (but not always) the first sentence in a paragraph. Experienced writers sometimes put topic sentences in other locations, but the best spot is usually right at the beginning. Readers who are used to the English way of writing want to know what they will read about as soon as they begin reading.

Synonyms

Synonyms, words that have the same basic meaning, do not always have the same emotional meaning. For example, the words *stingy* and *frugal* both mean "careful with money." However, calling someone stingy is an insult, but calling someone frugal is a compliment. Similarly, a person wants to be slender but not skinny, aggressive but not pushy. Therefore, you should be careful in choosing words because many so-called synonyms are not really synonymous at all.

Sometimes a topic sentence comes at the end. In this case, the paragraph often begins with a series of examples. Other paragraphs may begin with a series of facts, and the topic sentence at the end is the conclusion from these facts.

Medical Miracles to Come

By the year 2009, a vaccine against the common cold will have been developed. By the same year, the first human will have been successfully cloned. By the year 2014, parents will be able to create designer children. Genetic therapy will be able to manipulate genes for abilities, intelligence, and hair, eye, and skin color. By 2020, most diseases will be able to be diagnosed and treated at home, and by 2030, cancer and heart disease will have been wiped out. <u>These are just a few examples of the medical miracles that are expected in the next few decades.</u>

Exercise 2 *Remember that a topic sentence is a complete sentence and is neither too general nor too specific.*

 Step 1 Read the sentences in each group, and decide which sentence is the best topic sentence. Write best TS (for "best topic sentence") on the line next to it.

 Step 2 Decide what is wrong with the other sentences. They may be too general, or they may be too specific, or they may be incomplete sentences. Write too general, too specific, or incomplete on the lines next to them.

   The first one has been done for you as an example.

(1) <u>too specific</u>   a. A lunar eclipse is an omen of a coming disaster.
   <u>too general</u>   b. Superstitions have been around forever.
    <u>best TS</u>   c. People hold many superstitious beliefs about the moon.
   <u>incomplete</u>   d. Is made of green cheese.

(2) _____ a. The history of astronomy is interesting.
   _____ b. Ice age people recorded the appearance of new moons by making scratches in animal bones.
   _____ c. For example, Stonehenge in Britain, built 3500 years ago to track the movement of the sun.
   _____ d. Ancient people observed and recorded lunar and solar events in different ways.

(3) _____ a. It is hard to know which foods are safe to eat nowadays.
   _____ b. In some large ocean fish, there are high levels of mercury.
   _____ c. Undercooked chicken and hamburger may carry *E. coli* bacteria.
   _____ d. Not to mention mad cow disease.
   _____ e. Food safety is an important issue.

(4) _____ a. Hybrid automobiles more economical to operate than gasoline-powered cars.
   _____ b. The new hybrid automobiles are very popular.
   _____ c. Hybrid cars have good fuel economy because a computer under the hood decides to run the electric motor, the small gasoline engine, or the two together.
   _____ d. The new hybrid automobiles are popular because of their fuel economy.

(5) _____ a. The North American Catawba Indians of the Southeast and the Tlingit of the Northwest both see the rainbow as a kind of bridge between heaven and earth.
   _____ b. A rainbow seen from an airplane is a complete circle.
   _____ c. Many cultures interpret rainbows in positive ways.
   _____ d. Rainbows are beautiful.
   _____ e. The belief that you can find a pot of gold at a rainbow's end.

Exercise 3 *Read the following scrambled paragraphs and decide which sentence is the topic sentence.*

(1) a. A notes/memo function lets you make quick notes to yourself.
b. Other capabilities include word processing, spreadsheets, and e-mail.
c. A voice recorder that uses a built-in microphone and speaker works like a tape recorder.
d. Basic tools include a calendar to keep track of your appointments, an address and phone number book, to-do lists, and a calculator.
e. MP3 playback lets you listen to digital music files, and a picture viewer lets you look at digital photos.
f. Most personal digital assistants (PDAs) have tools for basic tasks as well as for multimedia functions.
g. A few models also include a built-in digital camera and keyboard.

(2) a. Twelve years after *Sputnik,* the United States caught up by becoming the first nation to land a man on the moon.
b. The Europeans have joined the competition, vowing to land European astronauts on the moon by 2025 and on Mars by 2035.
c. The number of nations competing in the "space race" has grown since the early days of space exploration.
d. China joined the competition in 2003 when it launched *Shenzhou 5.*
e. Initially, the former Soviet Union took the lead when it sent the first man into Earth orbit in the spaceship *Sputnik* in 1957.
f. For almost 50 years, the United States and Russia were the only competitors in the contest to explore space using manned spacecraft.

(3) a. Another important change was that people had the freedom to live and work wherever they wanted.
b. The earliest significant change was for farming families, who were no longer isolated.
c. The final major change brought by the automobile was the building of superhighways, suburbs, huge shopping centers, and theme parks such as Disney World in Florida.
d. The automobile revolutionized the way of life in the United States.
e. The automobile enabled them to drive to towns and cities comfortably and conveniently.
f. In fact, people could work in a busy metropolitan city and drive home to the quiet suburbs.

(4) a. In time, this melted part rises as magma.
b. The formation of a volcanic eruption is a dramatic series of events.
c. As the plate sinks, friction and Earth's heat cause part of it to melt.
d. The magma produces heat, steam, and pressure.
e. First of all, most volcanoes are formed where two plates collide.
f. Then one of the plates is forced under the other and sinks.
g. When the heat, steam, and pressure from the magma finally reach the surface of Earth, a volcanic eruption occurs.

IV The two parts of topic sentence

As noted earlier a topic sentence has two essential parts: the topic and the controlling idea. The topic names the subject of the paragraph. The controlling idea limits or controls the topic to a specific area that you can discuss in the space of a single paragraph.

                  topic   controlling idea
a) Convenience foods are <u>easy to prepare</u>.
The reader immediately knows that this paragraph will discuss how easy it is to prepare convenience foods and perhaps give some examples (canned soup, frozen dinners, and so on).

                 controlling idea   topic
b) <u>Immigrants have contributed many delicious foods</u> to U.S. cuisine.
The reader of this topic sentence expects to read about various ethnic foods popular in the United States: tacos, egg rolls, sushi, baklava, pizza, and so on.

A topic sentence should not have controlling ideas that are unrelated. The three parts of the following controlling idea are too unrelated for a single paragraph. They require three separate paragraphs (and perhaps more) to explain fully.
Indie films are characterized by experimental techniques, low production costs, and provocative themes (*too many ideas*)
Independent films are characterized by experimental techniques. *(good)*

Exercise 4 Circle the topic and underline the controlling idea in each of the following sentences.

1) Driving on freeways requires skill and alertness.
2) Driving on freeways requires strong nerves.
3) Driving on freeways requires an aggressive attitude.
4) The Caribbean island of Trinidad attracts tourists because of its calypso music.
5) Spectacular beaches make Puerto Rico a tourist paradise.
6) Moving away from home can be a stressful experience for young people.
7) Many religious rules arose from the health needs of ancient times.
8) A major problem for many students is the high cost of tuition and books.

9) Participating in class discussions is a problem for several different groups of students.
10) In my opinion, television commercials for cosmetics lie to women.
11) Owning an automobile is a necessity for me.
12) It is an expensive luxury to own an automobile in a large city.
13) Taste and appearance are both important in Japanese cuisine.

When you write a topic sentence, remember these three points:

A topic sentence must be a complete sentence, with a subject and a verb.
A topic sentence should be neither too general nor too specific. If it is too general, the reader cannot tell exactly what the paragraph is going to discuss. If it is too specific, the writer will not have anything to write about in the rest of the paragraph.
A topic sentence should not have unrelated controlling ideas.

Exercise 5 *Write good topic sentences for the following paragraphs. Remember to include both a topic and a controlling idea.*

(1)_____
English speakers relaxing at home, for example, may put on *kimonos,* which is a Japanese word. English speakers who live in a warm climate may take an afternoon *siesta* on an outdoor *patio* without realizing that these are Spanish words. In their gardens, they may enjoy the fragrance *of jasmine* flowers, a word that came into English from Persian. They may even relax on a *chaise* while snacking on *yogurt,* words of French and Turkish origin, respectively. At night, they may *shampoo* their hair and put on *pajamas,* words from the Hindi language of India.

(2) _____
In European universities, students are not required to attend classes. In fact, professors in Germany generally do not know the names of the students enrolled in their courses. In the United States, however, students are required to attend all classes and may be penalized if they do not. Furthermore, in the European system, students usually take just one comprehensive examination at the end of their entire four or five years of study. In the North American system, on the other hand, students usually have numerous quizzes, tests, and homework assignments, and they almost always have to take a final examination in each course at the end of each semester.

(3) _____
For example, the Eskimos, living in a treeless region of snow and ice, sometimes build temporary homes out of thick blocks of ice. People who live in deserts, on the other hand, use the most available materials, mud or clay, which provide good insulation from the heat. In Northern Europe, Russia, and other areas of the world where forests are plentiful, people usually construct their homes out of wood. In the islands of the South Pacific, where there is an abundant supply of bamboo and palm, people use these tough, fibrous plants to build their homes.

V Supporting sentences

Supporting sentences explain or prove the topic sentence. One of the biggest problems in student writing is that student writers often fail to support their ideas adequately. They need to use specific details to be thorough and convincing.
There are several kinds of specific supporting details: examples, statistics, and quotations.

Exercise 6 *Analyze the two paragraphs with and without supporting details. In the second paragraph find examples, statistics, and quotations.*

(1) **Red-Light Running**
Although some people think that red-light running is a minor traffic violation that is no worse than jaywalking, it can, in fact, become a deadly crime. Red-light runners cause accidents all the time. Sometimes people are seriously injured and even killed. It is especially a problem in rush hour traffic. Everyone is in a hurry to get home, so drivers run red lights everywhere. The police do not do much about it because they are too busy. The only time they pay attention is when there is an accident, and then it is too late. In conclusion, running a red light is a serious offense.

(2) **Red-Light Running**
[1]Although some people think red-light running is a minor traffic violation that is no worse than jaywalking, it can, in fact, become a deadly crime. [2]Red-light runners cause hundreds of accidents, including deaths and injuries as

well as millions of dollars in damages. [3]Each year more than 900 people die, and nearly 200,000 are injured in crashes that involve red-light running. [4]Motorists run red lights all the time. [5]For example, in Fairfax, Virginia, a five-month-long survey at five busy intersections revealed that a motorist ran a red light every 20 minutes. [6]Red-light runners are seldom caught. [7]According to the Insurance Institute for Highway Safety, "Communities don't have the resources to allow police to patrol intersections as often as would be needed to ticket all motorists who run red lights" ("Q&A").

VI Examples

Examples are perhaps the easiest kind of supporting detail to use because you can often take examples from your own knowledge and experience. You don't have to search the library or the Internet for supporting material. Furthermore, examples make your writing lively and interesting, and your reader is more likely to remember your point if you support it with a memorable example.
Words and phrases that introduce examples include *for example, for instance,* and *such as.*

Exercise 7 *Find examples in the text.*

Language and Perception

Although we all possess the same physical organs for sensing the world— eyes for seeing, ears for hearing, noses for smelling, skin for feeling, and mouths for tasting—our perception of the world depends to a great extent on the language we speak, according to a famous hypothesis proposed by linguists Edward Sapir and Benjamin Lee Whorf. They hypothesized that language is like a pair of eyeglasses through which we "see" the world in a particular way. A classic example of the relationship between language and perception is the word *snow.* Eskimo languages have as many as 32 different words for snow. For instance, the Eskimos have different words for falling snow, snow on the ground, snow packed as hard as ice, slushy snow, wind-driven snow, and what we might call "commeal" snow. The ancient Aztec languages of Mexico, in contrast, used only one word to mean snow, cold, and ice. Thus, if the Sapir-Whorf hypothesis is correct and we can perceive only things that we have words for, the Aztecs perceived snow, cold, and ice as one and the same phenomenon.

VII The concluding sentence

A concluding sentence serves two purposes:

1. It signals the end of the paragraph.
2. It leaves the reader with the most important ideas to remember. It can do this in two ways:
• By summarizing the main points of the paragraph
OR
• By repeating the topic sentence in different words

A paragraph does not always need a concluding sentence. For single paragraphs, especially long ones, a concluding sentence is helpful to the reader because it is a reminder of the important points. However, a concluding sentence is not needed for every paragraph in a multiparagraph essay.

End-of-Paragraph Signals Followed by a Comma:

Finally,	Lastly,
In brief,	Therefore,
In conclusion,	Thus,
Indeed,	To sum up,
In short,	

End-of-Paragraph Signals Not Followed by a Comma:
The evidence suggests that
There can be no doubt that
These examples show that
We can see that. . .

Exercise 8 *The models that follow demonstrate the two ways of writing a concluding sentence. As you read them, determine which concluding sentence summarizes the main points and which concluding sentence repeats the topic sentence in different words.*

Greeting Cards

Have you noticed how many different kinds of greeting cards you can buy these days? In the old days, the local drugstore had one rack displaying maybe five or six basic kinds of cards. You could walk into the store and choose an appropriate card in five minutes or less. Nowadays, however, the display space for greeting cards is as big as a soccer field, and it may take an hour or two to hunt down exactly the right card with exactly the right message. There are at least 30 categories of birthday cards alone: birthday cards for different ages, from different ages, for different relatives, from different relatives, for different genders, from different genders, from a couple, from the office, for dog owners, for cat owners, and so on. There are cards for getting a job, for retiring from a job, for acquiring a pet, for losing a pet, for becoming engaged, for breaking up. There are also greeting cards to send for no reason—"Thinking of you" or "Just because" cards. The newest type of card is the "encouragement card." An encouragement card offers comforting thoughts and helpful advice to someone who is sad or distressed in these troubled times. In short, there is now a greeting card for every possible life event and for a few nonevents as well.

_____

A Hawaiian Legend

Native people create legends to explain unusual phenomena in their environment. A legend from the Hawaiian island of Kauai explains how the naupaka flower, a flower that grows on beaches there, got its unusual shape. The flower looks like half a small daisy—4here are petals on one side only. The legend says that the marriage of two young lovers on the island was opposed by both sets of parents. The parents found the couple together on a beach one day, and to prevent them from being together, one of the families moved to the mountains, separating the young couple forever. As a result, the naupaka flower separated into two halves; one half moved to the mountains, and the other half stayed near the beach. This story is a good example of a legend invented by native people to interpret the world around them.

Exercise 9 *Underline the topic sentence in each paragraph.*
Add a good concluding sentence to each paragraph. You may either paraphrase the topic sentence or summarize the main points.
Practice using end-of-paragraph signals by starting each concluding sentence with one.

Paragraph 1
You can be a good conversationalist by being a good listener. When you are conversing with someone, pay close attention to the speaker's words while looking at his or her face. Show your interest by smiling and nodding. Furthermore, do not interrupt while someone is speaking; it is impolite to do so. If you have a good story, wait until the speaker is finished. Also, watch your body language; it can affect your communication whether you are the speaker or the listener. For instance, do not sit slumped in a chair or make nervous hand and foot movements. Be relaxed and bend your body slightly forward to show interest in the person and the conversation.

_____
_____

Paragraph 2
Modern communication technology is driving workers in the corporate world crazy. They feel buried under the large number of messages they receive daily. In addition to telephone calls, office workers receive dozens of e-mail and voice mail messages daily. In one company, in fact, managers receive an average of 100 messages a day. Because they do not have enough time to respond to these messages during office hours, it is common for them to do so in the evenings or on weekends at home.

_____
_____

VIII Unity

Exercise 10 *The three paragraphs that follow all discuss the same topic. Only one of them shows unity. First read the paragraphs. Then answer these questions.*

1. Which paragraph has unity?

2. Which paragraph does not have unity because it discusses two different topics?

3. Which paragraph does not have unity because it has sentences that are not related to the main topic?

Paragraph 1

Effects of Color

Colors create biological reactions in our bodies. These reactions, in turn, can change our behavior. In one study, prisoners were put in a pink room, and they underwent a drastic and measurable decrease in muscle strength and hostility within 2.7 seconds. In another study, athletes needing short bursts of energy were exposed to red light. Their muscle strength increased by 13.5 percent, and electrical activity in their arm muscles increased by 5.8 percent. Athletes needing more endurance for longer performances responded best when exposed to blue light. Other studies have shown that the color green is calming. Green was a sacred color to the Egyptians, representing the hope and joy of spring. It is also a sacred color to Moslems. Many mosques and religious temples throughout the world use green (the color of renewal and growth) and blue (the color of heaven) to balance heavenly peace with spiritual growth. To sum up, color influences us in many ways.

Paragraph 2

Effects of Color

Colors create biological reactions in our bodies. These reactions, in turn, can change our behavior. In one study, prisoners were put in a pink room, and they underwent a drastic and measurable decrease in muscle strength and hostility within 2.7 seconds. In another study, athletes needing short bursts of energy were exposed to red light. Their muscle strength increased by 13.5 percent, and electrical activity in their arm muscles increased by 5.8 percent. Athletes needing more endurance for longer performances responded best when exposed to blue light. Other studies have shown that the color green is calming. After London's Blackfriars Bridge was painted green, the number of suicides decreased by 34 percent. These and other studies clearly demonstrate that color affects not only our moods but our behavior as well.

Paragraph 3

Effects of Color

Colors create biological reactions in our bodies. These reactions, in turn, can change our behavior. In one study, athletes needing short bursts of energy were exposed to red light. Their muscle strength increased by 13.5 percent, and electrical activity in their arm muscles increased by 5.8 percent. Athletes needing more endurance for longer performances responded best when exposed to blue light. Blue is not a good color for dinnerware, however. Food looks less appetizing when it is served on blue plates, perhaps because very few foods in nature are of that color. Other studies have shown that the color green is calming. After London's Blackfriars Bridge was painted green, the number of suicides from it decreased by 34 percent. It is clear that color affects not just our moods, but our behavior as well.

Exercise 11 Both of the following paragraphs break the rule of unity because they contain one or more sentences that are off the topic.

Step 1 *Locate and underline the topic sentence of each paragraph.*

Step 2 *Cross out the sentence or sentences that are off the topic.*

Paragraph 1

Adventure travel is the hot trend in the tourism industry. Ordinary people are no longer content to spend their two weeks away from the office resting on a sunny beach in Florida. More and more often, they are choosing to spend their vacations rafting down wild rivers, hiking through steamy rain forests, climbing the world's highest mountains, or crossing slippery glaciers. People of all ages are choosing educational study tours for their vacations.

Paragraph 2

Daredevil sports are also becoming popular. Young people especially are increasingly willing to risk life and limb while mountain biking, backcountry snowboarding, or high-speed skateboarding. Soccer is also popular in the United States now, although football is still more popular. One of the riskiest new sports is skysurfing, in which

people jump out of airplanes with boards attached to their feet. Skysurfing rivals[4] skydiving and bungee jumping for the amount of thrills— and risk.

Exercise 12 *Both of the following paragraphs not only have sentences that are off the topic but also discuss two or more topics.*

Step 1 *Decide where each paragraph should be divided into two paragraphs. Underline the topic sentence of each.*
Step 2 *Find sentence(s) that are off the topic and cross them out.*

Paragraph 1
Because the Internet makes the world a smaller place, the value of having a common language is greatly increased. The question is—which language? Because the Internet grew up in the United States, the largest percentage of its content is now in English. Bill Gates, Microsoft's president, believes that English will remain valuable for a long time as a common language for international communication. His company spends $200 million a year translating software into other languages. He says, "Unless you read English passably well, you miss out on some of the Internet experience." Someday, software may be available to instantly translate both written and spoken language so well that the need for any common language could decline. That day is decades away, however, because flawless machine translation is a very tough problem. Computer spelling checkers also exist for various languages. Software that does crude translations already exists. It is useful if all you are trying to do is understand the general idea of something you see on your computer screen. However, if you are trying to negotiate a contract or discuss a scientific subject where details are important, machine translation is totally useless (Gates).

Paragraph 2
Even when you try to be polite, it is easy to do the wrong thing inadvertently in a new culture. For example, when someone offers you food or a beverage in the United States, accept it the first time it is offered. If you say, "No, thank you" because it is polite to decline the first one or two offers in your culture, you could become very hungry and thirsty in the United States. There, a host thinks that "no" means "no" and will usually not offer again. Meals in the United States are usually more informal than meals in other countries, and the times of meals may be different. Although North Americans are usually very direct in social matters, there are a few occasions when they are not. If a North American says, "Please drop by sometime," he may or may not want you to visit him in his home. Your clue that this may not be a real invitation is the word "sometime." In some areas of the United States, people do not expect you to visit them unless you have an invitation for a specific day and time. In other areas of the United States, however, "dropping by" is a friendly, neighborly gesture. Mioms are often for newcomers to understand.

IX Coherence

Another element of a good paragraph is coherence. The Latin verb *cohere* means "hold together." For coherence in writing, the sentences must hold together; that is, the movement from one sentence to the next must be logical and smooth. There must be no sudden jumps. Each sentence should flow smoothly into the next one.
There are four ways to achieve coherence:
1. Repeat key nouns.
2. Use consistent pronouns.
3. Use transition signals to link ideas.
4. Arrange your ideas in logical order.

Repetition of Key Nouns
The easiest way to achieve coherence is to repeat key nouns frequently in your paragraph.
Read the model paragraph about gold to see how it uses this technique to smooth the flow of sentences. The key noun in this paragraph is gold. Circle the word gold and all pronouns that refer to it.

[1]Gold, a precious metal, is prized for two important characteristics. [2]First of all, gold has a lustrous beauty that is resistant to corrosion. [3]Therefore, it is suitable for jewelry, coins, and ornamental purposes. [4]Gold never needs to be polished and will remain beautiful forever. [5]For example, a Macedonian coin remains as untarnished today as the day it was made 25 centuries ago. [6]Another important characteristic of gold is its usefulness to industry and science. [7]For many years, it has been used in hundreds of industrial applications, such as photography and dentistry. [8]The most recent use of gold is in astronauts' suits. [9]Astronauts wear gold-plated heat shields for

protection when they go outside spaceships in space. [10]ln conclusion, gold is treasured not only for its beauty but also for its utility.

You should have circled the noun *gold* seven times, the pronoun *it* twice, and the pronoun *its* three times. (The word *it* in sentence 5 refers to *coin,* not *gold,* so you should not have circled it.)

There is no fixed rule about how often to repeat key nouns or when to substitute pronouns. You should repeat a key noun instead of using a pronoun when the meaning is not clear.

Throughout the following paragraph, the word *gold* has been replaced by pronouns, making the paragraph much less coherent.

Gold, a precious metal, is prized for two important characteristics. First of all, it has a lustrous beauty that is resistant to corrosion. Therefore, it is suitable for jewelry, coins, and ornamental purposes. It never needs to be polished and will remain beautiful forever. For example, a Macedonian coin remains as untarnished today as the day it was made 25 centuries ago. Another of its important characteristics is its usefulness to industry and science. For many years, it has been used in hundreds of industrial applications, such as photography and dentistry. Its most recent use is in astronauts' suits. Astronauts wear heat shields made from it for protection when they go outside spaceships in space. In conclusion, it is treasured not only for its beauty but also for its utility.

Exercise 13 In the following paragraph, the key noun is never repeated. Replace the pronoun it with the key noun English wherever you think doing so would make the paragraph more coherent.

English

[1] English has almost become an international language. [2]Except for Chinese, more people speak it than any other language. [3]Spanish is the official language of more countries in the world, but more countries have it as their official or unofficial second language. [4]More than 70 percent of the world's mail is written in it. [5]lt is the primary language on the Internet. [6]ln international business, it is used more than any other language, and it is the language of airline pilots and air traffic controllers all over the world. [7]Moreover, although French used to be the language of diplomacy, it has displaced it throughout the world. [8]Therefore, unless you plan to spend your life alone on a desert island in the middle of the Pacific Ocean, it is a useful language to know.

Exercise 14 In the following passage about dolphins, replace some of the pronouns with appropriate singular or plural nouns.

Dolphins

[1]Dolphins are interesting because they display almost human behavior at times. [2]For example, they display the human emotions of joy and sadness. [3]During training, when they do something correctly, they squeal excitedly and race toward their trainer. [4]When they make a mistake, however, they droop' noticeably and mope[2] around their pool, furthermore, they help each other when they are in trouble. [6]lf one is sick, it sends out a message, and others in the area swim to help it. [7]They push it to the surface of the water so that it can breathe. [8]They stay with it for days or weeks until it recovers or dies. [9]They have also helped trapped or lost whales navigate their way safely out to the open sea. [10]They are so intelligent and helpful, in fact, that the U.S. Navy is training them to become underwater bomb disposal experts.

Key Noun Substitutes

If you do not wish to repeat a key noun again and again, you can use synonyms or expressions with the same meaning. For example, in sentence 8 of the first paragraph about gold, the writer substituted the noun *use* as a synonym for *application* in sentence 7, thereby smoothing the flow of thought from one sentence to the next.

Exercise 15 Step 1 In the topic sentence of the following paragraph, underline the key noun that names the topic.
Step 2 Then circle (a) repetitions of the key nouns, (b) pronouns that refer to them, and (c) synonyms that are substitutes for them. You should have a total of 10 circles: 3 circles around key nouns, 3 around pronouns, and 4 around synonyms.

A Mardi Gras Custom

[1] "Throw me something, mister," is the customary plea for a Mardi Gras "throw." [2]ln the final days of Mardi Gras, the season of parties, parades, and revelry that precedes the Christian period of fasting and penance called Lent, crowds of spectators line the streets of New Orleans. [3]They hope to catch a Mardi Gras souvenir tossed from parading floats. [4]Mardi Gras organizations called "krewes" build the floats and sponsor the parades, and while cruising along parade routes, costumed krewe members throw plastic trinkets to the crowds below. [5]The trinkets, which are called "throws," consist of bead necklaces, coins, cups, toys, Frisbees, and figurines stamped with the krewe's symbol or the parade theme. [6]Mardi Gras throws are big business for the companies that supply them.[7]Krewe members spend an average of $800 on them, and some spend $2,000 or more. [8]By far the most treasured of the Mardi Gras mementos are gaudy bead necklaces. [9]Originally made of glass, they are now made of plastic (Roach).

Consistent Pronouns

When you use pronouns, make sure that you use the same person and number throughout your paragraph. Don't change from *you* to *he* or *she* (change of person) or from *he* to *they* (change of number).

Exercise 16 In the following paragraph, the pronouns are not consistent. Correct them to make this paragraph more coherent.

Olympic Athletes

Olympic athletes must be strong both physically and mentally. First of all, if you hope to compete in an Olympic sport, you must be physically strong. Furthermore, aspiring Olympians must train rigorously for many years. For the most demanding sports, they train several hours a day, five or six days a week, for ten or more years. In addition to being physically strong, athletes must also be mentally tough. This means that you have to be totally dedicated to your sport, often giving up a normal school, family, and social life. Being mentally strong also means that he or she must be able to withstand the intense pressure of international competition with its accompanying media coverage. Finally, not everyone can win a medal, so Olympians must possess the inner strength to live with defeat.

Transition Signals

Transition signals are expressions such *as first, finally,* and *however,* or phrases such as *in conclusion, on the other hand,* and *as a result.* Other kinds of words such as subordinators *{when, although),* coordinators *{and, but),* adjectives *{another, additional),* and prepositions *{because of, in spite of)* can serve as transition signals.

Transition signals are like traffic signs; they tell your reader when to go forward, turn around, slow down, and stop. In other words, they tell your reader when you are giving a similar idea *{similarly, and, in addition),* an opposite idea *{on the other hand, but, in contrast),* an example *(for example),* a result *{therefore, as a result),* or a conclusion *{in conclusion).*

Transition signals give a paragraph coherence because they guide your reader from one idea to the next.

Exercise 17 *Compare paragraphs 1 and 2 that follow. Which paragraph contains transition signals and is more coherent? Circle all the transition signals you can identify.*

Paragraph 1
One difference among the world's seas and oceans is that the salinity[7] varies in different climate zones. The Baltic Sea in northern Europe is only one-fourth as salty as the Red Sea in the Middle East. There are reasons for this. In warm climates, water evaporates rapidly. The concentration of salt is greater. The surrounding land is dry and does not contribute much freshwater to dilute the salty seawater. In cold climate zones, water evaporates slowly. The runoff created by melting snow adds a considerable amount of freshwater to dilute the saline seawater.

Paragraph 2
One difference among the world's seas and oceans is that the salinity varies in different climate zones. For example, the Baltic Sea in northern Europe is only one-fourth as saline as the Red Sea in the Middle East. There are two reasons for this. First of all, in warm climate zones, water evaporates rapidly; therefore, the concentration of salt is greater. Second, the surrounding land is dry; consequently, it does not contribute much freshwater to dilute the salty seawater. In cold climate zones, on the other hand, water evaporates slowly. Furthermore, the runoff created by melting snow adds a considerable amount of freshwater to dilute the saline seawater.

Exercise 18 Step 1 *Circle all the transition signals in the following paragraphs.*
Step 2 *Punctuate the transition signals if necessary.*

Genetic Engineering

Genetic research has produced both exciting and frightening possibilities. Scientists are now able to create new forms of life in the laboratory because of the development of gene splicing. On the one hand, the ability to create life in the laboratory could greatly benefit humankind. One beneficial application of gene splicing is in agriculture. For example, researchers have engineered a more nutritious type of rice that could help alleviate the serious problem of vitamin A deficiency. It is estimated that 124 million children worldwide lack vitamin A, putting them at risk of permanent blindness and other health issues. In addition genetic engineers have created larger fish, frost-resistant strawberries, and cows that produce more milk. Indeed agriculture has already benefited from the promise of genetic engineering.

On the other hand not everyone is positive about gene-splicing technology. Some people feel that it could have terrible consequences. In fact a type of corn engineered to kill a certain insect pest also threatened to annihilate desirable monarch butterflies. In another accident, a genetically engineered type of corn that was approved only for animal consumption because it was toxic to humans accidentally cross-pollinated with corn grown for humans. As a result many countries banned imports of genetically modified corn for several years. Furthermore the ability to clone human beings is a possibility that frightens many people. In 2004, two South Korean scientists reported that they had successfully cloned a human embryo (Dreifus). The embryo did not develop into a baby however it is possible that one could do so in the future, a possibility that not everyone is comfortable with.

Exercise 19 *From the choices given in parentheses, choose the transition signal that best shows the relationship between the sentences in each group. Write the signal in the space. Add punctuation and change capital letters to small letters if necessary.*
Note: All the transition signals in this practice are transition phrases and conjunctive adverbs. This is to give you more practice in using and punctuating these types of transition signals correctly.

1. A recent article in *Era* magazine suggested ways to reduce inflation. The article suggested that the president reduce the federal budget; _____ it suggested that the government reduce federal, state, and local taxes, **(however, in contrast, furthermore)**

2. The same article said that the causes of inflation were easy to find _____ the cure for inflation was not so easy to prescribe, **(however, for example, therefore)**

3. *Era* also suggested that rising wages were one of the primary causes of inflation _____ the government should take action to control wages. **(however, for example, therefore)**

4. In physics, the weight of an object is the gravitational force with which Earth attracts it _____ if a man weighs 150 pounds, this means that Earth pulls him down with a force of 150 pounds. **(moreover, therefore, for example)**

5. The farther away from Earth a person is, the less the gravitation force of Earth. _____ a man weighs less when he is 50,000 miles from Earth than when he is only 5,000 miles away. **(in conclusion, therefore, however)**

6. A tsunami is a tidal wave produced by an earthquake on the ocean floor. The waves are very long and low in open water, but when they get close to land, they encounter friction because the water is shallow _____ the waves increase in height and can cause considerable damage when they finally reach land, **(on the other hand, as a result, for example)**

Exercise 20 Fill in each blank with an appropriate transition signal from the list provided. Use each signal only once. Add punctuation if necessary.

for example	also	second
in fact	indeed	final and most convincing
similarly	third	

Time

One stereotype about North Americans says that they are obsessed with time. It sometimes seems true that for North Americans, time seems as valuable as money. (1)_____ they even say, "Time is money." (2) _____ have you noticed how many verbs can be followed by both time and money? (3) _____ you can *spend time, save time, lose time, find time, make time, waste time,* and *run out of time.* (4) _____ you can spend, save, lose, find, make, waste, and run out of money. (5) _____ North Americans seem to regard time as a "thing" that one can own. You can *have time, buy time,* and *take time.* (One wonders how much it costs and where it is taken.) A (6) _____ piece of evidence that North Americans are obsessed with time is their fanaticism about always being on time. (7) _____ people who are habitually late risk punishment ranging from frowning disapproval to losing their jobs. The (8) _____ proof is that these poor people sometimes take courses in time management! That is really overdoing it, don't you agree?

Exercise 21 Improve the coherence of the following paragraph by adding transitions in the blank spaces. Use the hints provided in parentheses to help you choose a transition.

Move Over, DVD. Here Comes BD!

First, CDs brought digital sound into our homes. Then DVD technology brought digital sound and video and revolutionized the movie industry. Soon there will be (1) _____ (*additional idea)* revolution: Blu-ray discs (BDs). A Blu-ray disc will have several advantages. (2) _____ *(list in order)* it has an enormous data storage capacity. A single-sided DVD can hold 4.7 gigabytes of information, about the size of an average 2-hour movie. A single-sided BD, (3) _____ *(contrast),* can hold up to 27 gigabytes, enough for 13 hours of standard video. A (4) _____*(list in order)* advantage is that a BD can record, store, and play back high-definition video because of its larger capacity. A double-layer BD can store about 50 gigabytes, enough for 4.5 hours of high-definition video. The cost will be about the same. (5)_____ (*additional idea*), a BD has a higher data transfer rate – 36 megabits per second – than today's DVDs, which transfer at 10 megabits per second. (6) _____ (*result*) a BD can record 25 gigabytes of data in just over an hour and a half. (7) _____ (*conclusion)* because of their large storage capacity and comparable cost, BDs will probably take over the market when they become widely available.

Exercise 22 The following paragraph has too many transition signals. Which ones are helpful to the reader? Which transition signals are an unnecessary distraction?

Step 1 Improve the paragraph by deleting some transition signals. You may want to rewrite sentences, and you may have to change the capitalization and punctuation.

Step 2 *There are many possible ways to do this assignment. Discuss your changes with a partner or in a group.*

How to Grow an Avocado Tree

After you have enjoyed the delicious taste of an avocado, do not throw out the seed! You can grow a beautiful houseplant or even your own tree by following these simple steps. **First,** wash the seed. **Second,** dry it. **Third,** insert three toothpicks into its thickest part. **Then** fill a glass or empty jar with water. **After that,** suspend the seed in the water with the pointed end up and the broad end down. The water should cover about an inch of the seed. **Next,** put the glass in a warm place, but not in direct sunlight. Add water when necessary to keep the bottom of the seed under water at all times. In two to six weeks, you should see roots begin to grow. **Furthermore,** the seed will crack open, and **then** a stem will emerge from the top. **However,** wait until the stem is 6 to 7 inches long. **Then** cut it back to about 3 inches. **Now** wait until the roots are thick and the stem has leafed out again. **Then** fill an 8- to 10-inch diameter clay pot with enriched potting soil. Plant the seed, leaving the top half exposed. **Then** water it well. **After that,** water frequently but lightly; **also** give the plant an occasional deep soaking. **However,** do not overwater your little tree. Yellow leaves are a sign of too much water. **Then** place the potted plant in a sunny window and watch it grow. The more sunlight, the better. **Then, when** the stem is 12 inches high, cut it back to 6 inches to encourage the growth of side branches. In just a few more weeks, you will have a beautiful indoor plant. **In conclusion,** enjoy your new plant, but do not expect it to bear fruit. Avocados grown from seed occasionally flower and bear fruit; **however, first** you will have to plant it outside and **then** wait anywhere from five to thirteen years.

Logical order

In addition to using transition signals and repeating key nouns and pronouns, a fourth way to achieve coherence is to arrange your sentences in some kind of logical order.

Your choice of one kind of logical order over another will, of course, depend on your topic and your purpose. You may even combine two or more different logical orders in the same paragraph. The important point to remember is to arrange your ideas in some kind of order that is logical to a reader accustomed to the English way of writing.

Some common kinds of logical order in English are *chronological order, logical division of ideas,* and *comparison/contrast.*

- *Chronological order* is order by time—a sequence of events or steps in a process.
- In *logical division of ideas,* a topic is divided into parts, and each part is discussed separately. The model paragraph about gold uses logical division. First, it discusses gold's beauty, and second its utility.
- In a *comparison/contrast* paragraph, the similarities and/or differences between two or more items are discussed. The paragraph about synonyms compares and contrasts word meanings.

Exercise 23 *Read the following paragraphs and decide which kind of logical order is used in each: comparison/contrast, chronological order, or logical division of ideas. Be able to discuss the reasons for your choice. Circle all transition signals.*

Paragraph 1
The process of machine translation of languages is complex. To translate a document from English into Japanese, for example, the computer first analyzes an English sentence, determining its grammatical structure and identifying the subject, verb, objects, and modifiers. Next, the words are translated by an English-Japanese dictionary. After that, another part of the computer program analyzes the resulting awkward jumble of words and meanings and produces an intelligible sentence based on the rules of Japanese syntax and the machine's understanding of what the original English sentence meant. Finally, a human bilingual editor polishes the computer-produced translation.

Paragraph 2
French and U.S. business managers have decidedly different management styles. French meetings, for example, are long and rambling and rarely end on time. Furthermore, meetings often end without closure. Managers in the United States, on the other hand, make an effort to start and stop a meeting on time, and North American business

meetings typically end with decisions and action plans. Another difference involves documentation. North Americans adore documentation; they have a procedure manual for everything. The French, in contrast, think this is childish. French managers find it difficult to stick to a schedule, but U.S. managers are intolerant of delays. In addition, the French prefer to work alone, whereas North Americans like to work in teams. Another major difference in management style is that in French companies, authority comes from the top; French managers do not share information with subordinates and make decisions with little participation by employees beneath them. In U.S. companies, however, top managers share information and frequently solicit input from subordinates ("How French Managers").

Paragraph 3

It took more than 2,500 years to develop the calendar used in most Western countries today. In about 700 B.C.E., the ancient Romans used a calendar that had 304 days divided into 10 months; March was the beginning of each year. There were more than 60 days missing from the calendar, so very soon the calendar did not match the seasons at all. Spring arrived when the calendar said that it was still winter. A few decades later, the Romans added the months of January and February to the end of the year. This calendar lasted about 600 years. Then in 46 B.C.E., Julius Caesar, the Roman ruler, made a new calendar. His calendar had 365 days, with one day added every fourth year. He also moved the beginning of the year to January 1, and he renamed a month for himself: Julius (July). In Caesar's calendar, February had 29 days. The very next emperor, Augustus, not only renamed a month for himself (August), but he also took one day from February and added it to August so that "his" month would be just as long as Caesar's. This calendar worked better than the previous ones, but it still was not perfect. By 1580, the first calendrical day of spring was 10 days too early, so in 1582, Pope Gregory XIII, the leader of the Roman Catholic religion, made a small change to make the calendar more accurate. In the Gregorian calendar, the year is still 26.3 seconds different from the solar year, but it will be a long time before this causes a problem.

Paragraph 4

The many different calendars used throughout the world are all based on the phases of the moon, on the revolution of Earth around the sun, or on a combination of the two. The first kind of calendar is the lunar calendar, based on the phases of the moon. A month is calculated as the time between two full moons, 29.5 days, and a year has 354 days. The Islamic calendar used in Muslim countries is a lunar calendar. It has 12 months and a cycle of 30 years in which the 2nd, 5th, 7th, 10th, 13th, 16th, 18th, 21st, 24th, 26th, and 29th years have 355 days, and the others 354 days. A second kind of calendar is the solar calendar, which is based on the revolution of Earth around the sun. The ancient Egyptians used a solar calendar divided into 12 months of 30 days each, which left 5 uncounted days at the end of each year. A very accurate calendar developed by the Mayan Indians in North America was also a solar calendar. It had 365 days, 364 of which were divided into 28 weeks of 13 days each. The new year began on the 365th day. Because the solar year is exactly 365 days, 5 hours, 48 minutes, and 46 seconds long, however, a solar calendar is not totally accurate, so many cultures developed a third kind of calendar, the lunisolar calendar. In a lunisolar calendar, extra days are added every so often to reconcile the lunar months with the solar year. The Chinese, Hebrew, and Gregorian calendars used today are lunisolar calendars.

X Vocabulary

Exercise 24 *Fill the gaps. You may need to change forms.*

Software Architecture Modeling and Analysis

address	enrich	focus	include	provide
be	expand	focus	indicate	relate
enable	expand	identify	influence	target

My study of ADLs mentioned above has _____ a number of open issues in architectural modeling and analysis. I have tried to _____ those in my work. Specifically, I have tried to _____ architectural models and analysis techniques to _____ the structural (external interfaces), functional (static and dynamic behaviors), interaction (protocols), and non-functional (e.g., availability, reliability, latency) system properties. This work has also _____ on architectures for families of applications.

Architectural Modeling — I have leveraged my study of ADLs mentioned above to _____ a number of open issues in architectural modeling, and have tried to _____ those specifically in my research. An early result of this was an ADL that _____ on modeling static behavioral properties of architectures [C46]. In the past five years, I have _____ this work in several directions. I have _____ a formal semantic basis for component conformance and evolution in an architecture via an architectural type system [C40]; this has _____ several automated analysis capabilities discussed below. I have also _____ the scope of architectural modeling to include, and _____,

dynamic behavior and interaction protocol models of components in the form of concurrent state machines [B1, C13, C24, I4]. A recent thrust of my research has _____ modeling at the architectural level the properties that _____ a distributed system's runtime characteristics, specifically availability, latency, and reliability [C4, C8, C9].

Exercise 25 *Fill the gaps. You may need to change forms.*

detail	explicitly	integrate	prior	reliable	significant
ensure	identify	present	provide	resulting	uniquely

Modeling Application Family Architectures — Software application families _____ promise of _____ reuse, and rapid and _____ development of software systems by leveraging their shared properties. At the same time, application families _____ several interesting challenges from an architectural perspective. Application family architectures must explicitly _____ the possible dimensions of system evolution (e.g., via optional components or variant connectors), and _____ that specific application architectures do not deviate from the "reference" family architecture unless _____ allowed by the architecture. To this end, I have worked on developing a highly extensible ADL [C36] for modeling application family architectures. The ADL was extended with configuration management facilities, which had not been applied at the architectural level _____ to this, and then _____ into a software architecture modeling and analysis infrastructure [J1, B3, C26, C30, C33]. The _____ technology, Mae, _____ manages the modeling and evolution of architecture-level artifacts both at system development time and at runtime. Mae is _____ in a paper included with this packet [J1].

Exercise 24 *Fill the gaps. You may need to change forms.*

allow	case	enable	properties	solutions
analyze	collaborate	ensure	reason	study
assess	employ	estimate	series	work

Architecture-Level Analysis — One _____ for modeling the architectures of software systems and system families is to _____ their early analysis for properties of interest. In the _____ of application family architectures, certain _____ can be _____ at the level of the entire family.

Recently, I have _____ on devising a _____ of metrics for analyzing the structural quality of application family architectures [C11, C25, I3]; this _____ has shown that even a highly simplified, partial model can be leveraged to provide useful feedback to system (family) architects. The Mae environment _____ the conformance of interacting software components in an architecture at the level of static behaviors [J8]; it also incorporates third-party _____ for doing so at the level of dynamic behaviors and interaction protocols [C24]. Mae's own component-based architecture _____ flexible introduction of analysis modules for _____ an architecture's conformance to different styles [J1, C46]. Recently, I have begun using Mae's rich architectural models as the basis of a technique that _____ a Hidden Markov Model to _____ system reliability [C4].

Finally, I have _____ on devising a series of novel, polynomial-complexity algorithms for analyzing a distributed system's deployment architecture, and improving the system's resulting availability and latency by suggesting a re-deployment [C7, C9].

XI Listening

Exercise 26 *Find equivalents to the following phrases*

1. круги компьютерных специалистов (сообщества)
2. внимательно следить за
3. самые современные способы атаки
4. эксперты (светила) в области безопасности
5. посвященный чему-либо \ ориентированный на
6. описание с большим количеством деталей
7. внутренние атаки для повышения привилегий
8. интересен для более широкого круга
9. обширный архив
10. дает возможность хорошо познакомиться (разобраться) с
11. ведущий \ крупнейший сайт
12. универсальный инструмент для обнаружения уязвимостей
13. представленные \ освященные на сайте
14. предвидеть следующие шаги злоумышленников

Seminar 7

I Referencing

Not everything in your writing need be documented. Facts and ideas that are 'common knowledge'(and not from a quotation), as well as your own thoughts, opinions and conclusions do not need to be documented. But whenever you rely on an idea or the writing of someone else in support of your own thesis, this must be credited. If you fail to do this, you will be guilty of plagiarism.

Types of references
As well as referring to another work within your text, you have to give more details about your sources in one or more of these places:
ƒ Footnote
- provides details about the source of an in-text citation
- placed at the bottom of the page where the citation appears
ƒ Endnote
- provides details about the source of an in-text citation
- placed at the end of the article or paper, on a separate sheet of paper
ƒ Bibliography
- complete list of reference books, articles and other source materials cited in your work, in alphabetical order by author
- placed at the end of the article or paper, on a separate sheet of paper

Style sheets
Every publisher and discipline has its own requirements and provides style sheets on how references should be laid out, even though they all require the same basic information. These style sheets are readily available, and provide style standards for writing in most fields, sciences and disciplines. As a professional writer, you are responsible for knowing and following the standard of your particular discipline.

Format of references
The basic guidelines below apply to how you lay out the details about a source in a footnote, an endnote or a bibliography.
The examples given follow APA style, as governed by The Publication Manual of the American Psychological Association. Check whether this style actually applies to your own discipline.
ƒ *Reference to a book.* Information to include*:*
- names of the author(s): surname first, with initials for given names
- year of publication, in parentheses
- title of the book, underlined or in italic; only the first word needs to have a capital letter
- city where published
- name of the publisher

authors	year	title	place	publisher
Kellogg, R.T.	(1994)	The psychology of writing	New York:	Oxford University Press
Barzun, J and Graff, H.F.	(1992)	The modern researcher 5th edn	Orlando:	Harcourt Brace Jovanovich

Notes:
- when there are more than three authors, generally only one is listed, followed by a comma and et al.

authors	year	title	place	publisher
Brown, S., et al.	(1996)	500 tips for research students	London:	Kogan Paul

- in your bibliography, if there are two or more works by the same author, they should be listed chronologically. If there are two by the same author in the same year, the date is followed by a, b, etc.

authors	year	title
Fitzgerald, R.F.	(1989)	Controlling oilspills
Fitzgerald, R.F.	(1990a)	Water purification systems
Fitzgerald, R.F.	(1990b)	Water waste today

Reference to an article from a journal. Information to include:
- name of the author(s)
- year of publication, in parentheses
- title of the article, without quotation marks or underlining, with only the first word capitalised
- name of the journal underlined or in italic, with all major words having a capital letter

- volume number, underlined
- inclusive page numbers, not preceded by p or pp.

authors	date	title	journal	volume	pages
Hartley, J.	(1991)	Tabling information	American Psychologist	46,6:	655-6
Eklundh, K.S.	(1994)	Linear and non-linear strategies in computerbased writing	Computers and Composition	11:	203-16

Note: Volume and issue numbers may also be written: Vol. 27 no.1

Reference to an unpublished work. The information would appear as follows:

authors	date	title	source / availability
Reese, R.A.	(unpublished)	Surveyof postgraduate student writers' use of computer software.	Paper available from the author, Computer Centre, Hull University

ƒ Reference to material from electronic media and the Internet. Information to include:
- names of the author(s), if known
- title of the extract
- title of the complete work (if known), underlined
- if CD-ROM, then: name of CD-ROM producer + publication date
- if Internet, then: name of producer of online website
- Internet address of the quoted material
- date that the site was accessed online

author	Title	Producer	Address	Date accessed
Middlebury	Citing electronic sources	MLA	<http://www.middlebury.edu/ ~lib/citing.mla.html>	(July 1999)

II Plagiarism

All academic, scientific, technical and research writing must document all sources used. If you purposely use another person's writing as if it was your own, then you are guilty of plagiarism, the literary form of theft. Not to cite a source used is a most serious offence and the integrity of the writer and the writer's work will be seriously compromised if not dismissed outright.
What sources must be documented?
ƒ Every reference to another's work, word or ideas must be cited.
ƒ Every paraphrase must acknowledge the original source.
ƒ Every citation from a book, magazine, journal, the Internet, or speech must be noted.
ƒ Every borrowing must be documented.
ƒ Every quotation (whole or partial) must be given due credit.
Not all plagiarism is intentional, but that in no way changes the seriousness of the offence – and the consequences suffered in reputation and integrity for the writer, the writer's research, and the writer's written results. Plagiarism can and has destroyed careers.
What are the basic ways of avoiding plagiarism?
- provide in-text documentation for each idea you have 'borrowed' from someone elseƒ
- put quotation marks round each item directly quoted
- make sure that your paraphrased material is written in your own style and language, and not simply copied from another person, or their sentences just rearrangedƒ
- provide detailed information in your footnotes (or endnotes) and bibliography about all the sources you have cited.

III Footnotes

A footnote is a note at the bottom (or foot) of a page in a book or journal: it is used to explain a word or other item, or to add some special information or a reference. Sometimes footnotes appear at the end of the essay or article, or even at the back of a book.
   A small number is written above the word or item in the text. The explanation of the item is then given the same number. If there are two or more footnotes, then they are numbered in sequence 1, 2, 3, etc. If they appear at the foot of each page, the numbering starts again on each page. If they appear at the end

of an essay, the numbering is continuous throughout the essay. There are several systems of giving footnotes but this is the simplest:

. . . has given rise to a school of thought called neo[1]-Marxism…

_____
[1] neo - a new or modern form or development of

IV quoting

When writing a research paper or report, it is normal to include references and quotations from the work of others. This is for one or more of the following reasons:
ƒ- to cite evidence or opinions from an authority on the subject in support of your argument
ƒ- to put forward someone else's viewpoint that you intend to argue against
ƒ- to show the range of source materials you have used to support or challenge your own ideas
   - to acknowledge that your arguments derive from the work of others and thereby put them into their academic context

Quotations in your text can either be
ƒ **direct**: that is, you use the actual words of the original writer, or
ƒ **indirect**: that is, you paraphrase what the original source says by putting the ideas in your own words. In general, it is preferable to use the indirect, or paraphrasing, method since this incorporates the other author's ideas better into the flow of your own text. However, there are occasions when direct quotations are better:
ƒ- when the author expresses an idea in a particularly succinct or memorable way that it is impossible to improve on it
ƒ- when the writer is such an important authority on the subject that his/her actual words are significant
ƒ- when you want to avoid any ambiguity about the quoted ideas

Quotation length
In principle, you should keep quotations as brief as is necessary for them to make their point. Avoid using long quotations in case they detract from your own argument; only quote longer passages if you intend to analyse the writer's argument in detail.

Punctuation in quotingƒ
If your quotation is short, maybe only two or three words, try to run it within the grammatical flow of your sentence. This means single quotation marks are sufficient (together with appropriate referencing)
The conclusion of their analysis is that commercial nodule mining is unlikely for 'the foreseeable future' (35).

If your quotation is a little longer and is preceded by an introductory phrase, then you can use a comma or a colon before the quotation itself.
In one of his many publications concerning the role of science, Freeman wrote: 'Much scientific research is concerned with the exploration of the unknown. By definition we cannot know the outcome of such explorations and still less can we know its future impact on technology.' (39)

Most importantly, you must make sure you keep grammatical and logical cohesion between the quotation and your own text. To do this, you may have to add or delete words from the original, though you should keep these changes as small as possible. Where you add words, put square brackets round them.
According to popular view of evolution, even after Darwin, 'each [species] could realise its inner potential, which gradually unfolded.' (Kuper, 1985, p. 4)

If you omit some of the author's original words which are not relevant to your purpose, use three dots (…) to show where you have left the words out.
Case argued that the stage concept is valid: '… children go through the same sequence of substages across a wide variety of content domains, and … they do so at the same rate, and during the same age range.' (Case, 1985, p.231)
ƒ
If the quotation contains another quotation, then use single quotation marks ('…') for your quotation and double quotation marks for the author's quotation ("…").

A New Scientist survey of 1982 concluded that this was 'in accord with the ideas expressed by C. P. Snow (1964) when he spoke of "the gulf of mutual incomprehension that lies between the literary and scientific worlds".' (3)
ƒ
 If your quotation is long, say, more than three lines, then it should be indented as a separate paragraph. In this case, there are no quotation marks at all.

James (1983) devoted a whole chapter to instinct. He began with the following statement:
Instinct is usually defined as the faculty of acting is such a way as to produce certain ends, without foresight of the ends, and without previous education in the performance…. They are functional correlates of structure. With the presence of a certain organ goes, one may say, almost always a native aptitude for its use. (p. 1004)

V In-text referencing

There are two ways in which an author can be cited, and you will need to check with your publisher which one to use:
ƒ- the name and year system: used mainly in biological and earth sciences, as well as the social sciences, education, linguistics.
ƒ- the number system: used in the applied sciences, such as chemistry, computer science, engineering, mathematics, physics and medicine.

The name and year system. Place the year in brackets immediately after the author's name. Add the page number reference, if needed, at the end of the sentence, again in brackets.
Jones(1992) found that 'these data of psychological development suggest that retarded adolescents are atypical in maturational growth.' (p.215)
The number system. Place the number in brackets immediately after the author's name when it occurs, or alone at the end of the sentence. The numbers you give to your citations refer to your list of references at the end of your work, and these can be arranged either alphabetically (by author) or consecutively as they appear in the text. You can add a page number reference too, if you want.
Kanner (1, p. 249) labelled the disorder as 'early infantile autism'.

All in-text citations, either name-and-year or number, must of course refer to your list of references at the end of your work.

Language to use to introduce quotations
ƒ
There are a wide variety of 'reporting' verbs and verb phrases that you can use to introduce a quotation. Here are some of the more common ones
acknowledge … admit … allege … argue … assert … assume… believe … claim… conclude … contend … demonstrate … describe … emphasise … explain … imply … indicate … make the point … observe … point out … postulate … predict … propose … prove … report … say … show … state … suggest … think … write

Be careful about the verb tenses of these verbs:
* If you use MLA Style, you should put the verbs in the present tense both for personal comments and for quotations.
* If you use APA style (more common for the natural sciences), you should put the verbs in the past tense for citations, and only use the present tense for generalisations and statements about unchanging facts.

ƒ You can introduce your citation with any of these longer phrases:
According toX, …
As X has shown, …
For X, …
In X's view, …
By this, X meant …
X was of the opinion that…
X distinguished between … and …
X characterised / considered / defined/ recognised / referred to / regarded … as …
X illustrated his / her argument by saying / stating / showing that …
X laid particular emphasis on …

X makes the following claim/ point / statement: …
X put forward the theory that …
Referring to …, X said / stated / showed …

Exercise 1 *There are a number of errors in the bibliography or list of references below. These may be to do with the order of items or the omission of some details. Mark the places where the errors occur and then write a description of the error and what is needed to correct it.*

Abbott, G. (1981). Encouraging communication in English: a paradox. *ELT Journal.*

James, K. (1984a). The writing of theses by speakers of English as a Foreign Language: the results of a case study. In R. Williams, J. Swales and J. Kirkman (Eds.). *Common ground: shared interests in ESP and communication studies. ELT documents: 117.*

James (1984b). *Speak to Learn.*

McDonough, J. (1984). *ESP in Perspective: A Practical Guide.* Collins ELT: London.

Mackay, R. & A. Mountford (Eds.) (1978). *English for Specific Purposes.* London: Longman.

Zamel, V. Responding to student writing. *TESOL Quarterly,* 19 (1).

Swales, J.M. (1995). The role of the textbook in EAP writing research. *English for Specific Purposes,* 14 (1).

Swales, J.M. and C.B. Feak (1994). *Academic Writing for Graduate Students.* Ann Arbor: University of Michigan Press.

Exercise 2 *Below are various references, quotations, notes and pieces of information on the topic 'Plagiarism and its history'. Write an account of this, making appropriate use of what is provided. Acknowledge the use of sources and list the references correctly at the end.*

1. to plagiarize = to take words, ideas etc. from someone else's work and use them in your work, as if they were your own ideas. (Taken from the 3rd edition of *Longman Dictionary of Contemporary English,* 1995, published by Longman Group Limited, Harlow, Essex.)

2. Tom McArthur (editor) noted in *The Oxford Companion to the English Language* in 1992, published in Oxford by Oxford University Press: The origin of plagiarism - from the obsolete noun 'plagiary' = a 'kidnapper or a kidnapping, theft or a thief of ideas' - from the Latin 'plagiarius' = a kidnapper or literary thief.

3. First recorded use of 'plagiary' = late sixteenth century. 'Plagiary' and 'plagiarism' appear in the eighteenth century dictionaries of Nathaniel Bailey and Samuel Johnson.

4. Plagiarism may be unintentional - unawareness of English-speaking academic conventions - acknowledge all sources … many study guides etc. give advice, examples, and ways sources cited.
   e.g. Waters, M. and A. Waters - *Study Tasks in English* -1995 - Cambridge University Press
   L. Hamp-Lyons and K.B. Courter - *Research Matters* -Cambridge, Massachusetts - Newbury House in 1984
   I. Leki, 1989 - *Academic Writing* - St. Martin's Press, New York

5. Article by T. Lynch and I. McGrath (Teaching bibliographic documentation skills in *English for Specific Purposes,* Vol.13 No.3, 1993) - clearly sets out format re bibliography - shows different layout for books, journals and other papers.

VI grammar

Exercise 3 fill in the prepositions

3. Relating Architecture to Requirements, Design, and Implementation
It is widely acknowledged that an effective architecture forms the necessary basis … a successful software project. At the same time, there are few documented processes and techniques whereby the architecture is arrived … … system requirements and refined … system designs (and, further, implementations). Moreover, many modern systems suffer … architectural "erosion" once they are … operation: changes … the implemented system are not (correctly) reflected … its architectural models, and eventually may even end up violating key architectural decisions.
My work has studied these important relationships and has resulted … several techniques … establishing and preserving them. These techniques are referred … as *model connectors*; the paper … which the notion … model connectors is introduced [J4] is one … "Journal of Systems and Software most downloaded articles" published … 2003.
Architecture and Requirements — The relationship … the requirements a software system must satisfy and the system's architecture is not well understood. Little guidance and few methods are available … "architectural discovery", i.e., consistent refinement … software requirements … an effective architecture that will satisfy those requirements. Part … the challenge stems … the fact that requirements and architectures use different terms and concepts to capture the model elements relevant … each. My work … this area has resulted … a technique, called *CBSP*, that provides a systematic way … reconciling requirements and architectures [J3, C27, C32, C38]. Specifically, CBSP leverages the basic set … architectural concepts (*C*omponents, connectors or *B*uses, configurations or *S*ystems, and their *P*roperties) to recast and refine the requirements … an intermediate model. This intermediate model leverages the characterization … architectural styles produced as part … the Alfa project discussed above, and is used to arrive … an architectural model that satisfies the requirements.
Architecture and Design — My work has directly leveraged the study … UML as a possible ADL, discussed above, to provide a technique … transforming an architectural model … a set … UML-based design models [J4, J7, C29, C31, C42, C43, C44]. When published initially [C43], this was the only technique … its kind. As demonstrated in [J7], a paper included with this packet, the technique is independent … the ADL or style used … modeling the architecture. The insights … the relationship … architecture and design gained … this work have directly helped my work … architectural recovery discussed below.

Exercise 4 fill in prepositions

Architecture and Implementation — A key aspect a software architecture's effectiveness is the ability to preserve architectural decisions in the system's implementation. One way ensuring this is to automatically generate implementations from architectural models, but very few practical approaches exist to support this. Another way is to restrict the space implementation decisions, e.g., imposing a particular implementation framework or middleware platform. I have extensively studied the role middleware implementing software architectures, and particularly implementing software connectors [J6, B2, C21, C39, C41, C45]. These studies have indicated that existing middleware platforms typically fail to support certain key aspects architecture-based software development, including communication ports, software connectors, explicit system topologies, architectural styles, and so forth. This influenced the development a family of middleware platforms, referred as *architectural middleware*, which provide native implementation-level support architectural concepts [J14, C14, C15, C20, C46]. As further discussed below, I have demonstrated that supporting architectural concepts architectural middleware does not come the expense of system efficiency, scalability, or flexibility.
Architectural Recovery — Architectural recovery is a process frequently used to cope architectural erosion whereby the current, "as implemented" architecture a software system is extracted the system's implementation. I have developed an evolution-driven, light-weight approach architectural recovery, called *Focus* [J2, C28, I1]. Focus uses a system's evolution requirements to incrementally recover the system's architecture: it allows engineers to direct their primary attention the part of the system that is immediately impacted the desired change; subsequent changes will uncover additional parts the architecture. Focus is unique that, in addition software components, which are the usual target recovery approaches, it also recovers software connectors and candidate architectural styles. To this end, Focus leverages my study of connectors and styles discussed above. Recently, I have recognized that architectural recovery may be effectively complemented by architectural discovery in stemming architectural erosion [C16, I2]; I am currently pursuing this new research direction.

VII listening

Exercise 5 *Listen to the podcast and fill the gaps with words or phrases*

SSI injection

SSI injection is a form of attack that can be used to (1) _____ Web sites that contain SSI (server-side include) statements. An SSI is a (2) _____ such as a "Last modified" date that a (3) _____ can place in an HTML file. Before sending the file to the requestor, the (3) _____ searches the file for CGI (common gateway interface) environment variables and inserts the appropriate values in the places where "include" statements appear. In SSI injection, the (2) _____ are modified by an external hacker. This can allow the hacker to add, alter or delete HTML files on the (3) _____. It can also make it possible for the hacker to gain access to (3) _____ resources.

According to security experts, the main reason that SSI injection and similar (4) _____ are on the rise is the fact that (5) _____ is not sufficiently emphasized in software development. To protect the integrity of Web sites and applications, experts recommend the (6) _____ of simple precautions during development, such as controlling the types and numbers of (7) _____ that are accepted by Web servers from users

Seminar 8

I paraphrasing

Paraphrasing is an important writing skill. It is used to express the same ideas or information as the original text but with different vocabulary and grammar structures. Paraphrasing is frequently used to include information from other sources in research papers, along with the correct attribution of the original source material.

A good paraphrase:
- uses different grammar structures;
- uses synonyms and expressions with similar meanings;
- is approximately the same length as the original;
- includes the same ideas as the original;
- includes correct documentation of the source (author, title, journal/book, date, publishing house, etc.) if the source is published material

Original 1:
Although the artist encountered many difficulties in his life, he became extremely well known and successful.

Possible paraphrases:
- ■ The painter was a popular success despite experiencing many problems during his lifetime.
- ■ The artist had many problems during his lifetime; nonetheless, he experienced considerable recognition and success.
- ■ Despite the fact that he had experienced many hardships, the artist had a successful and distinguished career.
- ■ The painter achieved fame and success, his many problems notwithstanding (вопреки).

Original 2:
The persistent errors made by the accountant caused the business to fail.

Possible paraphrases:
- ■ The accountant always made so many mistakes that eventually the company had to dose down.
- ■ The failure of the company was the consequence of the accountant's repeated miscalculations.
- ■ As a result of the long-standing incompetence of the accountant, the firm went bankrupt.
- ■ The bankruptcy of the company was due to the repeated mistakes of the accountant.

Exercise 1 *Read each sentence and choose the paraphrase that most closely matches its meaning. Then state the reasons for your choice.*

1. *Test anxiety can cause nervousness, memory loss, and an inability to concentrate.*
a. Test anxiety may cause nervousness, loss of memory, and lack of concentration.
b. Feelings of nervousness, forgetfulness, and a loss of ability to study are all signs of exam stress.
c. Students who are nervous about exams experience more loss of memory.
2. *Many college professors give their students cooperative-learning assignments that encourage them to work together as a team.*
a. Professors try to encourage team building by assigning group projects.
b. According to professors, students who study together experience greater benefits.
c. Team building projects assigned by university professors reinforce cooperative ways of learning among students.

Exercise 2 *Paraphrase the following sentences, using different vocabulary and grammar structures wherever possible.*
1. Students who live off-campus often have positive experiences if they have realistic expectations of their roommates and landlord.
2. Many people immigrate to the United States to find better jobs, higher salaries, and more opportunities for their families.

3. Currently, major corporations manufacture and market their products all over the world.
4. Diamond engagement rings are advertised to consumers as symbols of wealth and love.
5. Studies have shown that people in all cultures show similar facial expressions in response to specific emotions.

II Grammar and vocabulary

Exercise 3 Find odd words (no more than one in a line)

4. Role of Architecture at Runtime
Software architecture is the linchpin of a software system's development. As if such, it should play an important role in the system's execution, as argued in a paper I had co-authored on this subject [J10]. This is particularly important in the emerging class of highly distributed, mobile, and to embedded systems, possibly been running on large numbers of "small" (i.e., resource-constrained) platforms such as handheld devices. I have referred to this class of the systems, and the accompanying challenges they impose on to software development, as *Prism* (*Pr*ogramming *i*n the *s*mall and *m*any), both as a convenience and to distinguish it from the traditional software development paradigm of PitL (*Pr*ogramming *i*n *t*he *L*arge). Prism has just become a significant facet of my research over the past three years. The challenges of Prism have been outlined in three recent papers [J5, J14, C23]. In the particular, [J5] appeared in a special issue of IEEE Computer on handheld computing, and was the one of only five papers have accepted from 87 submissions. My work to date on Prism has studied the impact of the implementation platform on runtime system properties, as well as issues in system deployment and mobility (and the requisite runtime evolution).

Exercise 4 find mistakes (articles, tenses, wrong words, missing words, extra words, prepositions, spelling) (22 in total)

Implementation Platform — I have hipothesized that an explicit architectural focus will result in effective notations, techniques, and tools for developing and evolving Prism systems. With extension, it should have been possible develop architectural middleware (i.e., middleware that provides direct support into architectural abstractions, as discussed above) for Prism systems that is highly (1) profitable, to minimize the processing, memory, and communication overhead in resource-constrained computing environments; (2) scalable, to support arbitrarily large and widely distributed systems; and (3) extensible, to support the wide range of development and runtime scenarioes. To validate this hypothesis, I leveraged my priority work in the area of middleware (see above) to develop *Prism-MW* [J5, C14, C15], an event-based architectural middleware for Prism systems that satisfy the three requirements. Prism-MW couples extensive separation of concerns with several novel optimization technique described in [C14], a paper included with this packet, to result in a solution that natively supports architectural abstractions, scales to tens of thousands of components but connectors, and is significantly more smaller *and* faster than comparative existing solutions. Prism-MW has also successfully evaluated by two external software development organizations for use to their embedded systems; one of those evaluations has resulted in the ongoing technology transfer effort with JPL. A paper current in the submission [J14] discusses a recenter version of Prism-MW, which supports the implementation of software architectures according with the rules of different styles, while, at the same time, farther reducing the middleware's size and increasing their speed.

Exercise 5 Check the punctuation

Deployment, Mobility, and Runtime Evolution — Deploying a software system onto its target hardware hosts is particularly challenging in highly distributed and mobile environments with possibly unstable network connectivity. Effective support for this task requires a model of the system's planned deployment architecture the ability to analyze it for key properties as well as the ability to transfer components to their intended destinations load them and start the overall system in a synchronized manner. My work in this area has resulted in a deployment environment called *Prism-DE* [C22] that performs these tasks using Prism-MW as the underlying implementation migration and execution platform. This approach leverages Prism-MW's extensibility to support unintrusive monitoring [C5] of the running subsystem on each host and to inform Prism-DE of situations that may affect the system's availability or communication latency such as unreliable or overloaded network links. In response Prism-DE may invoke one or more of the algorithms discussed above [C7, C9] to remedy the situation by rapidly calculating a re-deployment architecture for the system. An extensive study of techniques for supporting

disconnected operation in distributed systems [J13, C17] indicates that Prism-DE calculates a system's re-deployment faster by several orders of magnitude than comparable approaches. Once the appropriate redeployment is selected Prism-MW's event-based nature explicit software connectors and extensibility are leveraged to provide support for safely adding removing packaging and transferring
software modules in a running system [C8, C9, C15, C34].

III Listening

Exercise 6 *You will hear extracts from a presentation "Web 2.0 in Action! How SAP is Leveraging Web 2.0 in CRM to Improve Customer Experience" given by one of SAP experts.*
Listen to the first part of the presentation by Volker Hildebrand and answer the questions:

1. Who is the presenter?

2. What two communities does Volker Hildebrand mention?

3. What is the focus of these communities?

4. With regard to the second community, Volker speaks about four aspects. What are they?

5. Speak about the channels in more detail.

Exercise 7 *Listen to the next part of the presentation and find English equivalents to the following phrases:*

1. любой может вступить (в сообщество)
2. начал действовать
3. последний выпуск
4. на данный момент у нас имеется
5. оживленный форум
6. вклад в обсуждение на форуме
7. члены сообщества
8. идейный лидер
9. похвала

Exercise 8 *Listen to the third part of the presentation and insert the missing words in the correct form to fit the blanks:*

Next Generation CRM

The development of the Internet and Web 2.0 applications enables customers **1** _____ as compared to the company staff.
Customers play an increasingly important role in businesses due to **2** _____ and **3** _____ provided by on-line communication.
The opinion of community members counts in customer's **4** _____
The new CRM is based on both **5** _____ and **6** _____
7 _____ should not be overlooked by companies in order to ensure positive customer experience.
According to SAP experts, **8** _____ is a valuable source of information on consumer attitudes to the company.
The flow of social community data should be **9** _____ and **10** _____

Seminar 9

I Summary

A summary is a shortened version of another person's words or ideas in a book, an article, or a lecture. Summarizing is an important academic writing skill for writing lecture notes, answering short essay questions, and writing the main points of a speech or text. Summarizing is also frequently used to include information, in a much shorter format, from other sources in research papers, along with the correct documentation.

A good summary:
- includes only the main points, not the details;
- does not repeat information or data;
- does not change the author's ideas;
- does not include citations or references unless they are essential
- does not include your own opinion;
- is much shorter than the original text;
- is written as one paragraph;
- is written or paraphrased in your own words;
- does not use abbreviations;
- is written in the third person with occasional references to the source.

How TO SUMMARIZE
- Read the text several times to make sure you understand it.
- Find the topic sentence (usually the first sentence) and any other key points in each paragraph. If you own the publication, you can underline or highlight these key points.
- Write your own summary, paraphrasing the main points. Make sure you use your own words and vary the grammatical structures.
- Include a reference to the author and title of the article at the beginning of the summary, for example,
According to John Stewart in his article, "The Hurried Life," people are so concerned with making money that they forget the value of quiet moments.
- Include one or more verbs that indicate a reference to a source, for example, *The author argues (suggests, states, concludes, questions, says, reports, tells, asks) that ...*

Exercise 1 Read the following paragraph from "Shifting Challenges in Education". Then read the sample summary of the paragraph.

Original Paragraph
In that first decade of her professional career, however, demographic shifts took place in California. Los Angeles expanded and its suburbs multiplied, and her community became a popular location for recently arrived Mexican immigrants and other Spanish-speaking people coming to California from towns and cities in the southwestern United States. Correspondingly, the proportions of white and minority children in Mrs. Tanner's fifth grade class also began to change. Her white, middle-class students were joined by African American children whose parents had relocated from the southern United States and by children who spoke Spanish in their working-class homes and commuted regularly between the United States and Mexico. The parents of these children, like the grandparents of her earlier students, had come to the United States to find employment with sufficient financial compensation to ensure a higher standard of living for their families.
Adapted from Eugene Garcia, Student Cultural Diversity: Understanding and Meeting the Challenge, 3rd ed. (Boston: Houghton Mifflin, 2002), 4-5.

Sample Summary
According to Eugene Garcia in Student Cultural Diversity. Understanding and Meeting the Challenge, significant changes in the student population in Mrs. Tanner's school began to occur in the first ten years of her teaching career as greater numbers of African Americans and Mexicans arrived in Los Angeles to seek a better life.

Exercise 2 *Read the article "Shifting Challenges in Education". Next read the main ideas of each paragraph. Finally, write your own summary of the article.*

Mrs. Margaret Tanner's classroom in a sunny, southern California elementary school is similar to any other fifth-grade room in communities all over the United States. The school was constructed in the 1950s, and the core number of students it serves has remained around 600 since its opening. Since she started teaching there in 1981, Mrs. Tanner has had as few as 19 students in her classroom and as many as 35, but on the average, her daily attendance is between 26 and 28 students of both sexes.

Mrs. Tanner has taught fifth grade in this classroom, in this school, in a suburb of Los Angeles, for 24 years. At the core of her philosophy of education is her emphasis on student interaction as a framework for successful educational outcomes for all students. When she accepted her initial teaching assignment, the dominant student population was middle class, white, and English speaking—the descendents of people who had emigrated to the United States from Europe during the nineteenth and early twentieth centuries. In short, they were very similar to Mrs. Tanner herself.

In that first decade of her professional career, however, demographic shifts took place in California. Los Angeles expanded and its suburbs multiplied, and her community became a popular location for recently arrived Mexican immigrants and other Spanish-speaking people coming to California from towns and cities in the southwestern United States. Correspondingly, the proportions of white and minority children in Mrs. Tanner's fifth-grade class also began to change. Her white, middle-class students were joined by African American children whose parents had relocated from the southern United States and by children who spoke Spanish in their working-class homes and commuted regularly between the United States and Mexico. The parents of these children, like the grandparents of her earlier students, had come to the United States to find employment with sufficient financial compensation to ensure a higher standard of living for their families.

Since the second decade of Mrs. Tanner's teaching career, considerable shifts in the population have continued to alter the demographics of her students. More and more, she is teaching children who speak a variety of languages in their homes and communities, including Spanish, Vietnamese, Russian, Hmong, Chinese, and Farsi. In the classroom, students' English abilities may be at the beginning, intermediate, or advanced level. The students come from families who have immigrated to the United States to seek a better standard of living, to find freedom from political or religious constraints, or to escape from dangerous circumstances in their own countries.

Mrs. Tanner has reacted to these demographic changes by remaining constant in her enthusiasm and her vision for her teaching job, but she is also the first to admit that the ethnic diversity of her students illustrates the challenges of her role as a teacher and of her understanding of the tasks and techniques necessary to teach her students effectively. As she comments, her greatest challenge is now the cultural diversity of her students, who come from different countries, language backgrounds, and economic levels. In order to reach her diverse students while creating a positive learning environment, components that address the integration of cultural and language differences must enter into her teaching strategies. At the same time, the school's reliance on state levies for funds may constrain her efforts to teach the various minority groups in her classroom in the most effective ways.

Adapted from Eugene Garcia, Student Cultural Diversity: Understanding and Meeting the Challenge, 3rd ed. (Boston: Houghton Mifflin, 2002), 4-5.

Summary sentences

Mrs. Tanner is a fifth-grade teacher in a typical elementary school in southern California.

When Mrs. Tanner began teaching in 1981, her students had a background similar to her own, and thus she emphasized active participation to promote academic achievement.

Significant changes in the student population in her school began to occur in the first ten years of her teaching career as greater numbers of African Americans and Mexicans arrived in Los Angeles to seek a better life.

New arrivals of immigrants from all over the world, escaping from economic and political instability in their own countries, continued to add to the ethnic diversity of her students.

Mrs. Tanner recognized that this diversity of languages and cultures required different teaching strategies, despite a lack of support in state funding.

Exercise 3 *Read the article "Cooperative Learning". First find the main points in each paragraph. Next put these main points together to form a summary, including one or more references to the author.*

COOPERATIVE LEARNING
The cooperative learning approach has become popular among college professors because it helps students reach high academic standards and build positive relationships in the classroom. After many years of theoretical and practical research on this issue, strong evidence shows that cooperative methods can have major benefits for student learning through increased learning, better understanding of the concepts being taught, and improved retention of the material. In addition, an interpretation of available data suggests that cooperative learning encourages positive relationships among team members of different racial and economic backgrounds.

Cooperative learning takes a variety of forms, but the structure of most cooperative learning involves small teams, usually composed of four or five individuals, working together toward a similar goal in which each person assumes a specific role in the process over a period of time. Cooperative groups might be established for one class session or for several weeks to complete a specific assignment. Students are expected to interact with members of their group, share ideas and materials, support and encourage each other's academic learning, explain to each other the concepts of the assignment, and make sure that each individual is responsible for doing a fair share of the work.

Analyses of the cooperative approach have identified several significant factors and variables that indicate a formula for successful cooperative learning to occur. Studies have shown that students on successful teams interact with a higher level of language, ask each other difficult questions, challenge each other's answers, and ask each other for assistance. College classes in all areas of study are likely to involve some type of cooperative learning, from peer editing of thesis statements and review of essays in writing courses to long-term group projects in the sciences. This approach to learning is generally more interesting and more fun for students than traditional classroom teaching, although problems can arise when the team members do not cooperate with each other.

Key Elements of Successful Cooperative Learning: http://www.cde.ca.gov/iasa/cooplmg2.htmi. Adapted from Eugene Garcia, Student Cultural Diversity: Understanding and Meeting the Challenge, 3rd ed. (Boston: Houghton Mifflin Company, 2002), 344 45.

II Abstract

Abstracts are called 'summaries' by some journals, though strictly speaking the terms are not exactly the same.

ƒA summary restates the main findings and conclusions of a paper and is written for people who have already read the whole thing.

ƒAn abstract is a shortened version of the paper written for people who may never read the full version. Since abstracts are often reprinted in abstracting journals separated from the original paper, they need to be self-explanatory.

An abstract normally appears at the top of the page in front of the actual paper it outlines. The purpose is to inform readers as concisely as possible what is in the article so that they can decide whether to read it in detail.

There are two kinds of abstract –
• Descriptive abstract: this provides a kind of 'contents list' of what will be in the paper; what the writer will deal with or attempt to prove in the article, rather than a synopsis of the actual results. Since it contains general statements, it is more appropriate for longer papers, such as review articles, and can be written before the paper itself is drafted.
• Informative abstract: this does not simply describe what will be in the paper, but also gives a summary of the main factual information, such as your methods and materials, results and conclusions. This type of abstract is more suited to papers or reports about original research. It is usually better to write an informative abstract when the writing of the complete paper is finished.

Normally, when writing up research, the informative abstract is better since you give the reader factual information as well as your main opinions. In some circumstances, the descriptive abstract is preferred, e.g. if you are working in a controversial area and have results that you do not want to reveal until the reader has read the whole paper. Abstracts can also be a mixture of both descriptive and informative elements.

There is no fixed length of an abstract. It is important to write enough for what the reader needs to know rather than summarising everything in the paper. A typical length is between 100 and 250 words, or between 5% and 10% of the original.

The **informative abstract** will contain a selection of these elements, depending on how you perceive the reader's needs
• an expansion or explanation of the title
• the purpose of the research
• how the research was conducted
• what the main findings were
• what the findings mean
• what recommendations can be made, e.g. for further research
• what the limitations of the research were
Normally you would NOT include in your abstract
• any information that is not in the paper itself
• tables and diagrams
• citations from other people's work

Composition
Rather than following the sequence of sections in the paper itself, it is often a good idea in an abstract to put the most significant ideas first, whether it be the method, the results, your recommendations, or whatever. In this way, readers who are short of time will at least know your main point even if they only read the first sentence.
Both types of abstract must communicate ideas effectively, preferably with direct, active statements in short, simple sentences. There can be a difference in the use of verb tenses:
* use the present tense when you make general statements of fact, or say what your paper does (as in a descriptive abstract)
* use the past tense when you explain what you actually did or found out in your piece of research (as in an informative abstract)
The descriptive abstract will make more use of generalised vocabulary and phrases, while the informative abstract will have more precise, specific language, including numbers.

Keywords
These are the most important words in your paper that are specifically related to your topic. Your editor may want you to identify these so that they can be printed at the end of the abstract (or sometimes after the title in the journal's contents list).

RULES FOR WRITING AN ABSTRACT
1. Keep the abstract short. A 200-word limit is recommended.
2. Write it as one paragraph.
3. Do not use abbreviations.
4. Do not include citations or references unless they are essential.
5. Briefly describe the subjects, the structure of the study, the methods, approaches and procedures.
6. Summarize the main results, indicating whether they are significant.
7. Stick mainly to simple Present tense form.
8. Do not present detailed discussion or explanation.
9. Never write it in the first person (I or we).

Exercise 4 Read a sample abstract and its analysis

An Overview of Rotating Stall and Surge Control for Axial Flow Compressors.
Modeling and control for axial flow compression systems have received great attention in recent years. The objectives are to suppress rotating stall and surge, to extend the stable operating range of the compressor system, and to enlarge domains of attraction of stable equilibria using feedback control methods. The success of this research field will significantly improve compressor performance and thus future aeroengine performance. This paper surveys the research literature and summarizesthe major

developments in this active research field, focusing on the modeling and control perspectives to rotating stall and surge for axial flow compressors.

Keywords: axial flow compressor, rotating stall, surge

Analysis
• Purpose. The abstract is a descriptive abstract: it tells you what the writers do in the article, but not their actual ideas.
• Structure. It begins with an explanation of the research field, its aims and the potential outcome of the research; it goes on to state the authors' intention of surveying the research literature and summarising major developments.
• Language use.
* It uses only present tenses (including present perfect and will future).
* It contains generalized academic phrases, e.g. have received great attention, the objectives are to …, this paper surveys …and summarises …., focusing on ….

Exercise 5 *Read a sample abstract and its analysis*

CD46 is a Cellular Receptor for Human Herpesvirus 6
Human herpesvirus 6 (HHV-6) is the etiologic agent of exanthum subitum, causes opportunistic infections in immunocompromised patients, and has been implicated in multiple sclerosis and in the progression of AIDS. Here, we show that the two major HHV-6 subgroups (A and B) use human CD46 as a cellular receptor. Downregulation of surface CD46 was documented during the course of HHV-6 infection. Both acute infection and cell fusion mediated by HHV-6 were specifically inhibited by a monoclonal antibody to CD46; fusion was also blocked by soluble CD46. Nonhuman cells that were resistant to HHV-6 fusion and entry became susceptible upon expression of recombinant human CD46. The use of a ubiquitous immunoregulatory receptor opens novel perspectives for understanding the tropism and pathogenicity of HHV-6.

Analysis
ƒ Purpose. The abstract is an informative abstract: it contains details of what was investigated, what the findings were and what might happen in the future.
• Structure. It first defines HHV-6 and explains its importance; it gives the purpose of the research (we show that …), the method (Downregulation …) and the results; it concludes with a statement of future prospects as a result of the research.
• Language use.
* It uses present tenses for general statements and explanation of what the paper does.
* It uses past tenses to describe the procedure and results of the research.
* It contains a greater density of technical, topic-related terms than the descriptive abstract, together with specific verbs to describe precisely what happened in the research (inhibited, blocked, etc.).
* Note the use of the passive when describing the research.
* It also uses extended sentences in order to condense information. For example, the first sentence is Human Herpesvirus 6 is …, causes…, and has been ….

Exercise 6 *Analyze the following abstracts and identify their weak points.*

 Abstract 1

Human memory is similar to computer memory; however, there is one vital difference - humans are

unable to automatically retrieve every memory at the press of a key or the click of a mouse. Much effort

is being made to improve human memory. This project sets 5 out to examine the reasons for memory loss

and how it can be remedied. The conclusion will suggest that methods exist for improving human memory.

Abstract 2

The Qualification work is devoted to the engineering of the database in the specific subject area. The chosen subject area is an activity of a drugstore. During engineering of a database was used a method that consists of several stages- subject area research and description, analysis of the integrity limitations, ER-modeling, CASE-projection and transferring into database server environment. After the database was created, several SQL queries were executed in order to reveal the practical use of this particular database.

Abstract 3

This paper is dedicated to the topic of project management and the structure of my graduation work entitled "Creation of a project documentation library with the help of iProject Files".
The introduction part is devoted to the historical background and the main purpose of this paper. The second paragraph entitled "Key definitions" presents the key definitions associated with project management. In the next paragraph, "Triple constraints" you can find a brief description of three constraints every project has to deal with. The third paragraph presents the justification of the topic chosen for my graduation work and the potential of the Oracle system for file management and storing. In the next paragraph you can find the structure of my graduation work; and the concluding paragraph contains a review of key points touched upon in this paper.

Abstract 4

The draft acquaints the reader with the most popular practical applications of data analysis methods as an essential part of business intelligence (BI) systems. Basing on recent developments in this area the draft explains how the companies derive economic benefits from the usage of the systems that combine the two definitions of BI – the technologies of data processing and the received as a result knowledge. Since business intelligence includes data mining, the draft briefly explains which data mining methods are the most popular ones, what problems the user of data mining can encounter with, what stages does data mining include according to the CRISP standard. Moreover, the draft covers the future content of the degree work as well as the structure of it. As a result the draft tries to form a feeling that data analysis plays a significant role in modern decision making. The reader does not need one special economic or mathematic foundations to get to know the information the draft contains and is available for a wide audience.

***Exercise 7** Write your own abstract to the texts in exercises 2 and 3*

III Grammar

Exercise 8 Put the words in brackets in the correct form

5. Future Research

The work I have pursued to date has already produced significant results, with a number of actual and several potential impacts. In addition to applying the results of my research in the context of external projects (currently conducted with Boeing and JPL), a number of research threads are still on-going. These on-going threads include

• modeling and analyzing architectural _____ (**rely**) in a compositional manner, such that individual component _____(**rely**) are combined to assess system-wide _____ (**rely**);

• augmenting static analysis of a system's _____ (**implement**) with analysis of its dynamic _____ (**behave**) to improve architectural recovery;

• combining architectural discovery and recovery to better deal with architectural erosion;

• decoupling a distributed system's model from the analyses performed on that model, in order to investigate aspects of system _____ (**depend**) beyond _____(**available**) and latency (e.g., security, fault _____ (**tolerate**)); and

• leveraging explicit architectural models to optimize routing in publish-subscribe systems deployed over wide-area networks.

In addition, several new research threads are emerging.

One emerging thread deals with the possibility of _____ (**automate**) generating system _____(**implement**) from Alfa models of style-based software architectures. Since Alfa captures the five key aspects of styles in a small number of _____(**recur**) primitives that are accompanied with specific composition rules, it is my hypothesis that this information can be used in a manner similar to the way assembly language instructions are used to implement statements in high-level programming languages. While the potential benefits of such a solution would be significant, a number of challenges will have to be overcome even if the idea proves to be feasible. These challenges will include _____ (**scale**) of the primitive _____ (**compose**), _____ (**efficient**) of the resulting _____(**implement**), and system evolvability and distributability.

*Another emerging research thread is the role of software architectures in decentralized systems. The shared underlying _____ (**assume**) of architecture-based approaches to date has been the _____ (**exist**) of some sort of architectural model. Such a model will be _____(**part**) at best, and potentially misleading, in a decentralized system. It is an open research problem how and to what extent one can leverage such a model, and whether "model discovery" can be approached in the same manner as resource discovery has been in modern distributed systems.*

The _____(**envision**) point of convergence for all of the research threads described in this document is integrated, _____(**depend**) support for "round trip" architecture-based software engineering, from models of system _____(**require**), _____(**apply**) architectural styles, and reference (i.e., application family) architectures; to application architectures, designs, and _____(**implement**); to deployed, running, and evolving systems; and back. While I am sure to face significant challenges in accomplishing this objective, I believe that my efforts to date, as well as the planned further efforts, provide me with a unique platform from which to pursue it.

IV Listening

Exercise 9 Fill the gaps with words or phrases from the podcast.

Malware is malicious software which allows attackers (1) _____ the system and network defenses, as well as to extract sensitive data from (2) _____ .

On the whole, effective malware defense requires keen attention to detail and careful planning. In order to stop the threat, methods and approaches should be based on (3) _____ and (4) _____ . The key to successful defense is to know about (5) _____ of the company's IT infrastructure and to screen it to (6) _____ anomalies. Another important measure is to deploy a reliable IDS (i.e. (7) _____). It will ensure visibility into the environment, though it will not always (8) _____ . In addition, traditional network monitoring tools can scrutinize (9) _____ to prevent data leaks. And finally, any (10) _____ changes to the system should be spotted, as they may be a sign of malware residing in the memory of the system.

Exercise 10 *Find equivalents to the following expressions:*

1. особенно уязвимый
2. избежать обнаружения по сигнатуре
3. текущая деятельность (компании)
4. способность скрываться
5. вредоносный код, содержащий скрытые *руткиты*
6. методы проникновения в браузер
7. отключить ненужные функции
8. следить за появлением обновлений
9. наконец
10. многочисленные уровни защиты

Exercise 11 *Complete the sentences with the phrases from the podcast:*

1. Honeypots are …..
2. There are a number of defensive techniques: one of them is getting an intruder to …..
3. Honeypots also make it possible to reduce …..
4. …… assists in incident response because …..
5. By deploying a series of honeypots, it is possible to …..
6. A client-side honeypot is …..
7. A common infection technique, which is hard to block, is …..
8. The key rule for using honeypots is …… as an attacker can …..

Exercise 12 *Find English equivalents to the following phrases:*

1. каждый имел возможность высказаться
2. идти на серьезный риск
3. сделать заказ
4. слишком мелкий клиент
5. не соответствовали новым требованиям
6. принять решение
7. быть председателем на совещании\переговорах
8. оптовые закупки
9. спрос на наши продукты рос

Exercise 13 *Find English equivalents to the following phrases:*

1. иметь информацию под рукой \ в распоряжении
2. подойти к клиенту со слишком большими требованиями
3. усовершенствовать методы
4. многое из этого сводится к
5. быть настороже
6. обходиться с каждым конкретным клиентом
7. ваши сильные стороны
8. чересчур подробно
9. снизить цену
10. легко сказать …
11. сами по себе ничего не значат
12. впустую тратить слова, «проповедовать в пустыне»
13. испортить все дело