



计算机专业 英语教程

(第二版)

宋德富 司爱侠 编著

顾问(美)Kenneth A. Peterson

Bonita L. Peterson



高等教育出版社

431
CA601(2)

计算机专业英语教程

(第二版)

宋德富 司爱侠 编著

顾问 (美) Kenneth A. Peterson
Bonita L. Peterson

编者 宋德富 司爱侠 张强华 宋力

高等教育出版社

内 容 提 要

《计算机专业英语教程(第二版)》保留了原来有关计算机的基本体系及常用操作内容,注重所选材料的实用性、广泛性和前瞻性,涵盖了计算机的基本知识、计算机发展、内存管理、计算机安全与维护、人工智能、程序设计、多媒体技术、虚拟现实等诸方面内容。因计算机及其相关技术的高速发展,本版替换了上一版中一些过时内容,代之以“HTML初学者指南”、“计算机发展简史”、“什么是面向对象软件”、“黑客术语”、“什么是虚拟办公”以及“电子商务”。课文后配有综合练习、常用短语和名词术语注释、阅读理解练习及生词表。本书注重词汇与内容的实用性,适合作为高等学校计算机及其他相关信息技术专业英语教材。

图书在版编目(CIP)数据

计算机专业英语教程/宋德富,司爱侠编著.—2版.
北京:高等教育出版社,2003.1

ISBN 7-04-011546-8

I. 计... II. ①宋...②司... III. 电子计算机
—英语—高等学校—教材 IV. H31

中国版本图书馆 CIP 数据核字(2002)第 104071 号

出版发行	高等教育出版社	购书热线	010-64054588
社 址	北京市东城区沙滩后街 55 号	免费咨询	800-810-0598
邮政编码	100009	网 址	http://www.hep.edu.cn
传 真	010-64014048		http://www.hep.com.cn
经 销	新华书店北京发行所		
印 刷	北京未来科学技术研究所 有限责任公司印刷厂	版 次	1999 年 5 月第 1 版 2003 年 1 月第 2 版
开 本	787×1092 1/16	印 次	2003 年 1 月第 1 次印刷
印 张	20.25	定 价	25.00 元
字 数	490 000		

本书如有缺页、倒页、脱页等质量问题,请到所购图书销售部门联系调换。

版权所有 侵权必究

关于本书

一、目的

本教程可供各高等学校计算机专业和以计算机为主干课程专业的学生开设计算机英语课使用,也可供有一定英语基础的计算机操作人员进行自学。

二、内容

新版《计算机专业英语教程》保留了原来有关计算机的基本体系及常用操作内容,注重所选材料的实用性、广泛性和前瞻性,涵盖了计算机的基本知识、计算机发展、内存管理、计算机安全与维护、人工智能、程序设计、多媒体技术、虚拟现实等诸方面内容。因计算机及其相关技术的高速发展,本版替换了上一版中一些过时内容,代之以 A Beginner's Guide to HTML(HTML 初学者指南)、A Short History of the Computer(计算机发展简史)、What is Object-Oriented Software?(什么是面向对象软件)、A Hackers' Glossary(黑客术语)、About Virtual Office(什么是虚拟办公)以及 Good News for E-Commerce, but Shoppers Must Be Wary(电子商务消息好,顾客警惕要提高)。

三、体例

本教材以单元为基本构件。每个单元包括:

1. Passage
2. New Words
3. Phrases
4. Abbreviations
5. Notes to the Passage
6. Comprehension Exercises to the Passage
7. Exercises to Terms and Words
8. Passage for Reading
9. Exercise to the Passage for Reading

新版新单词的界定在依据 1999 年 5 月教育部高等教育司印发的《大学英语教学大纲(修订本)》以及 2000 年 10 月 10 日印发的《高职高专教育英语课程教学基本要求》的基础上进行了一些调整,把在基础英语中相对冷僻而在计算机英语中常用的单词也列入其内。将单词根据它们的使用频率标以分级记号(*号为基础词汇;**号为常用计算机词汇;***号为不常用词汇),以便在教学过程中把握重点,从而使本教程既适合于本科,也适用于专科院校计算机专业的学生。练习的设计除了主课文和阅读材料的理解外,重点放在计算机术语的反复练习上。对使用频率极高的动词也安排了足够的练习。Notes to the Passage 重点讲解长句难句,为学生课后自学提供方便。

全书最后共有四个附录。它们是:

主课文的参考译文

计算机英语读译技巧

计算机英语构词法

总词汇表

“计算机英语读译技巧”紧密结合本教材,对计算机英语的阅读和翻译进行了归纳和点拨,可有效提高读者的读译能力;“计算机英语构词法”可帮助学生掌握最常用的构词方法,便于他们迅速扩充计算机英语词汇;总词汇表不仅包括主课文的单词、短语和缩略语,而且包括阅读课文的新单词、术语和缩略语,同时还提供了单词的音标。

四、使用

本教程大约需用 72 学时。如果一周开设 4 课时,每周可完成一个单元。最后再用两周进行复习考试。

附录中的有关内容可供学有余力的同学自学。

五、其他

上一版附录中带有练习答案,许多教师反映这给教学带来不便,所以新版教材不再附答案,而改为向需要者单独提供(主要针对教师 and 自学者)。我们保留有以前使用本教程的学校及教师的相关资料,将用 Email 提供新版的练习答案和参考试卷,请注意查收。如果通讯地址有变或更换了任课教师或没有告知 Email 地址,请立即与我们联系。对于初次使用本教材的教师,烦请认真填写书后的表格并加盖公章,我们也会发送资料。

对于所有读者,在使用本书中有任何问题,都可通过以下 Email 地址与我们联系,我们尽可能提供帮助:

zqh3882355@sina.com

zqh3882355@163.net

songdefu@yahoo.com

songdefu@sina.com

由于我们才疏学浅,错误之处在所难免,恳请大家不吝赐教。

六、致谢

本教程的编写得到了波音公司计算机软件专家 Peterson 夫妇的大力支持, Peterson 夫妇曾就读于美国麻省理工学院。他们对本书的英文部分进行了认真的阅读、仔细的推敲和必要的修改。

本教程的编写得到了江苏、山东、河南等地十余所高等学校中从事计算机英语教学的老师们的帮助,他们结合自己教学实践提出了许多有益的建议。

在此,谨向他们一并表示衷心的感谢!

编者

2002 年 10 月

目 录

Unit 1	(1)		
Passage: Computer Hardware	(1)	New Words	(30)
New Words	(2)	Phrases	(31)
Phrases	(3)	Abbreviations	(31)
Abbreviation	(4)	Notes to the Passage	(31)
Notes to the Passage	(4)	Comprehension Exercises to the Passage	(32)
Comprehension Exercises to the Passage	(4)	Exercises to Terms and Vocabularies	(33)
Exercises to Terms and Vocabularies	(5)	Passage for Reading: Device Driver	
Passage for Reading: What Is a Computer		Commands Quick Reference	(35)
System?	(6)	Exercise to the Passage for Reading	(39)
Exercise to the Passage for Reading	(7)	Unit 5	(41)
Unit 2	(8)	Passage: Diskettes	(41)
Passage: Types Of Computer Systems	(8)	New Words	(44)
New Words	(10)	Phrases	(45)
Phrases	(11)	Abbreviations	(45)
Abbreviations	(11)	Notes to the Passage	(45)
Notes to the Passage	(11)	Comprehension Exercises to the Passage	(46)
Comprehension Exercises to the Passage	(12)	Exercises to Terms and Vocabularies	(47)
Exercises to Terms and Vocabularies	(13)	Passage for Reading: A Hackers' Glossary	(49)
Passage for Reading: Summary of		Exercise to the Passage for Reading	(51)
Computer's Components	(14)	Unit 6	(54)
Exercise to the Passage for Reading	(16)	Passage: Output Device	(54)
Unit 3	(17)	New Words	(57)
Passage: The Central Processing Unit	(17)	Phrases	(58)
New Words	(19)	Abbreviations	(58)
Phrases	(20)	Notes to the Passage	(59)
Abbreviation	(20)	Comprehension Exercises to the Passage	(60)
Notes to the Passage	(21)	Exercises to Terms and Vocabularies	(60)
Comprehension Exercises to the Passage	(21)	Passage for Reading: Modem Doctor	(62)
Exercises to Terms and Vocabularies	(23)	Exercise to the Passage for Reading	(64)
Passage for Reading: Monitor and		Unit 7	(65)
System Unit	(24)	Passage: Hardcopy Output Devices	(65)
Exercise to the Passage for Reading	(25)	New Words	(69)
Unit 4	(26)	Phrases	(70)
Passage: Main Memory	(26)	Abbreviations	(70)
		Notes to the Passage	(70)

Comprehension Exercises to the Passage	..... (71)	New Words	..... (118)
Exercises to Terms and Vocabularies	..... (72)	Phrases	..... (118)
Passage for Reading: About Virtual Office	... (74)	Abbreviations	..... (119)
Exercise to the Passage for Reading	..... (76)	Notes to the Passage	..... (119)
Unit 8	..... (77)	Comprehension Exercises to the Passage	..... (121)
Passage: Terminals	..... (77)	Exercises to Terms and Vocabularies	..... (122)
New Words	..... (79)	Passage for Reading: Creative Sound	
Phrases	..... (80)	Blaster	..... (123)
Abbreviations	..... (80)	Exercise to the Passage for Reading	..... (130)
Notes to the Passage	..... (80)	Unit 12	..... (131)
Comprehension Exercises to the Passage	..... (81)	Passage: A Short History of the	
Exercises to Terms and Vocabularies	..... (82)	Computer	..... (131)
Passage for Reading: Special Report on		New Words	..... (137)
Computer Hacking	..... (84)	Phrases	..... (139)
Exercise to the Passage for Reading	..... (85)	Proper Name	..... (140)
Unit 9	..... (87)	Abbreviations	..... (141)
Passage: Data Transmission Media	..... (87)	Notes to the Passage	..... (141)
New Words	..... (90)	Comprehension Exercises to the Passage	..... (143)
Phrases	..... (92)	Exercises to Terms and Vocabularies	..... (145)
Notes to the Passage	..... (92)	Passage for Reading: Types of Files	..... (146)
Comprehension Exercises to the Passage	..... (93)	Exercise to the Passage for Reading	..... (147)
Exercises to Terms and Vocabularies	..... (94)	Unit 13	..... (148)
Passage for Reading: Good News		Passage: What is Object-Oriented	
for E-Commerce, but Shoppers		Software?	..... (148)
Must Be Wary	..... (96)	New Words	..... (153)
Exercise to the Passage for Reading	..... (97)	Phrases	..... (154)
Unit 10	..... (99)	Abbreviations	..... (155)
Passage: Input and Output Device in		Notes to the Passage	..... (155)
Virtual Reality	..... (99)	Comprehension Exercises to the Passage	..... (156)
New Words	..... (103)	Exercises to Terms and Vocabularies	..... (157)
Phrases	..... (104)	Passage for Reading: Basic Editing	
Notes to the Passage	..... (104)	of Word	..... (159)
Comprehension Exercises to the Passage	..... (105)	Exercise to the Passage for Reading	..... (163)
Exercises to Terms and Vocabularies	..... (106)	Unit 14	..... (165)
Passage for Reading: ARJ Program	..... (108)	Passage: Copy Command of FoxPro	..... (165)
Exercise to the Passage for Reading	..... (112)	New Words	..... (168)
Unit 11	..... (114)	Phrases	..... (168)
Passage: A Beginner's Guide to HTML		Abbreviations	..... (169)
(Abstract)	..... (114)	Notes to the Passage	..... (169)
		Comprehension Exercises to the Passage	..... (169)

Exercises to Terms and Vocabularies	(171)	Unit 1 译文	(203)
Passage for Reading: Delphi Client/Server		Unit 2 译文	(204)
Suite	(172)	Unit 3 译文	(205)
Exercise to the Passage for Reading	(175)	Unit 4 译文	(206)
Unit 15	(176)	Unit 5 译文	(209)
Passage: Java Programmer's Toolkit	(176)	Unit 6 译文	(210)
New Words	(179)	Unit 7 译文	(212)
Phrases	(179)	Unit 8 译文	(214)
Abbreviations	(180)	Unit 9 译文	(216)
Notes to the Passage	(180)	Unit 10 译文	(218)
Comprehension Exercises to the Passage	(181)	Unit 11 译文	(220)
Exercises to Terms and Vocabularies	(182)	Unit 12 译文	(223)
Passage for Reading: Netscape		Unit 13 译文	(227)
Navigator 3.0 (Windows)	(183)	Unit 14 译文	(230)
Exercise to the Passage for Reading	(189)	Unit 15 译文	(232)
Unit 16	(191)	Unit 16 译文	(234)
Passage: Is Computer Science Education		附录 2 计算机英语读译技巧	(236)
in Crisis?	(191)	附录 3 计算机英语构词法	(253)
New Words	(194)	1. 单词概说	(253)
Phrases	(195)	2. 认识词根	(253)
Abbreviations	(195)	3. 前缀	(254)
Notes to the Passage	(195)	4. 后缀	(261)
Comprehension Exercises to the Passage	(198)	5. 构词法	(269)
Exercises to Terms and Vocabularies	(199)	附录 4 总词汇表	(273)
Passage for Reading: Text Markup		1. 单词表	(273)
Language	(200)	2. 短语表	(298)
Exercise to the Passage for Reading	(201)	3. 缩略语表	(309)
附录 1 主课文的参考译文	(203)	参考文献	(313)
		主要参考网站	(313)

Unit 1

Passage: Computer Hardware

Para 1 Computer hardware can be divided into four categories: (1) input hardware, (2) storage hardware, (3) processing hardware, and (4) output hardware.

1. Input Hardware

Para 2 The purpose of input hardware is to collect data and convert it into a form suitable for computer processing. The most common input device is a keyboard. It looks very much like a typewriter keyboard. Its keys are arranged in the typical typewriter layout. There are also a number of additional keys. They can be used to enter special computer-related codes. Although it isn't the only type of input device available, the computer keyboard is the one which is most generally used by the business community.

2. Storage Hardware

Para 3 The purpose of storage hardware is to provide a means of storing computer instructions and data in a form that is relatively permanent, that is, the data is not lost when the power is turned off - and easy to retrieve when needed for processing. Storage hardware serves the same basic function as do office filing systems except that it stores data as electromagnetic signals or laser-etched spots, commonly on disk or tape, rather than on paper.

3. Processing Hardware

Para 4 The purpose of processing hardware is to retrieve, interpret, and direct the execution of software instructions which are provided to the computer. The most common components of processing hardware are the central processing unit and main memory.

Para 5 The central processing unit (CPU) is the brain of the computer. It reads and interprets software instructions and coordinates the processing activities that must take place. The design of the CPU affects the processing power and the speed of the computer, as well as the amount of main memory it can use effectively. With a well-designed CPU in your computer, you can perform highly sophisticated tasks in a very short time.

Para 6 Main memory (also called *internal memory*, *primary storage*, or just *memory*) can be thought of as an electronic desktop. The more desk surface you have in front of you, the more you can place on it. Similarly, if your computer has a lot of memory, you can place more software instructions in it. The amount of memory available determines whether you can run simple or sophisticated software; a computer with a large memory is more capable of holding the thousands of instructions that are contained in the more sophisticated software programs. A large memory also allows you to work with and manipulate great amounts of data and information at one time. Quite simply, the more main memory you have in your computer, the more you can accomplish.

4. Output Hardware

Para 7 The purpose of output hardware is to provide the user with the means to view information produced by the computer system. Information is output in either *hardcopy* or *softcopy* form. *Hardcopy* output can be held in your hand—examples are paper with text (words or numbers) or graphics printed on it. *Softcopy* output is displayed on a *monitor*, a television-like screen on which you can read text and graphics.

New Words

*	available	adj.	可用的
*	category	n.	种类, 类型, 类别, 分类
**	code	n.	码, 代码, 编码, 程序
*	community	n.	社区, 社会
*	component	n.	组件, 元件, 部件, 组成部分
**	computer-related	adj.	与计算机有关的
*	contain	vt.	包含, 包括
*	convert	v.	转换, 变换
*	coordinate	vt.	使协调, 调节
**	desktop	adj.	桌面的, 台式的
		n.	桌面
**	electromagnetic	adj.	电磁的
*	execution	n.	执行, 实行
**	file	n.	文件
		vt.	(保存)文件, 把...归档
**	function	n.	函数, 功能, 操作
		vi.	起作用
*	graphics	n.	图形
**	hardcopy	n.	硬拷贝
**	hardware	n.	硬件
**	input	n.	输入

**	instruction	<i>n.</i>	指令, 指导
*	internal	<i>adj.</i>	内部的
***	laser-etched	<i>adj.</i>	激光蚀刻的
*	layout	<i>n.</i>	布置布局, 安排, 页面布局, 版面布置
**	manipulate	<i>vt.</i>	操作, 控制, 使用
**	memory	<i>n.</i>	记忆, 存储, 存储器, 内存, 主存
**	monitor	<i>n.</i>	监视, 显示器, 监视器, 监督程序
		<i>vt.</i>	监视, 监控
**	output	<i>n.</i>	输出, 输出设备
*	perform	<i>v.</i>	执行, 完成, 做, 表演
*	permanent	<i>adj.</i>	永久的, 持久的
**	program	<i>n.</i>	程序, 步骤, 节目单
**	retrieve	<i>vt.</i>	检索恢复, 寻回
**	software	<i>n.</i>	软件
*	sophisticated	<i>adj.</i>	高级的, 复杂的
*	storage	<i>n.</i>	存储, 存储器
*	television-like	<i>adj.</i>	像电视机的
*	unit	<i>n.</i>	设备, 单位
		<i>adj.</i>	单位的

Phrases

amount of memory	内存量, 内存容量
central processing unit	中央处理器
collect data	收集数据
computer instruction	计算机指令
computer processing	计算机处理
electromagnetic signals	电磁信号
electronic desktop	电子桌面
input hardware	输入硬件
keyboard function	键盘功能
main memory	主存, 主存储器
manipulate data	管理数据
office filing system	办公室档案系统
on a monitor	在屏幕上
output hardware	输出硬件
processing hardware	处理硬件
processing power	处理能力
retrieve the data	恢复数据

sophisticated software	高级软件
storage hardware	存储硬件
well-designed CPU	设计很好的 CPU

Abbreviation

CPU	Central Processing Unit	中央处理器
-----	-------------------------	-------

Notes to the Passage

- [Para 1] data 为 datum 的复数形式,但在美国,data 在语法上也可看作单数。因此,这儿出现了用 it 代替 data 的情形,即...to collect data and convert it into a form suitable for computer processing. 又如:This data has been collected from various sources. (这项资料是从各方面收集来的。)实际上用 data is 要比用 data are 更常见。
- [Para 2] Although it isn't the only type of input device available, ...
本句中的 available 为后置形容词,修饰前面的名词 input device,译作“可供使用的输入设备”。英语中的部分形容词可单个作为后置修饰语,例如:test the programs created. 测试所创建的程序;Software compatibility is determined by the kind of processor chip used. (软件的兼容性是由所使用的处理器芯片所决定的。)
- [Para 3] ... that is relatively permanent, ...
注意,用了 relatively 或 comparatively 修饰形容词或副词就不能再用它们的比较级,如此处就不能说成:relatively more permanent.
- [Para 3] —and easy to retrieve when needed for ...
其中的 when needed 是一个省略状语从句,省去了主语 + be,这个省略状语从句相当于 when it(data) is needed. 类似的例如:A number of problems can occur when (you are) starting up.
- [Para 3] ...Storage hardware serves the same basic function as do office filing systems.
本句中的 do 为代动词,它代表了前面提到的动词短语 serve the same basic function(发挥相同的基本功能)。
- [Para 3] ...except that it stores data as electromagnetic signals ...
本句中的 except that 为从属连词,我们可用 but 代替 except。
- [Para 3] ...commonly on disk or tape, rather than on paper.
“rather than”具有否定含义,常表示对照否定。本处意为:“储存在磁盘或磁带上,而不是在纸上”。

Comprehension Exercises to the Passage

[Ex 1] Decide whether the following statements are true (T) or false (F) in relation to the information in the passage.

1. The computer keyboard has exactly the same layout as the typewriter keyboard.
2. To enter special computer-related codes, you may use some additional keys.
3. We must use storage hardware to store computer instructions and data, otherwise they will be lost when the power is turned off.
4. Office filing systems store data as electromagnetic signals or laser-etched spots.
5. The processing hardware is mainly made up of CPU and memory.
6. The design of the CPU determines whether you can run simple or sophisticated software.
7. The more sophisticated software program, the more instructions it contains.
8. If you have a large memory in your computer, you'll be able to work with and process great amounts of data and information at one time.
9. The output hardware is the means for the user to see information produced by the computer.
10. You can read hardcopy output on the monitor and softcopy output on paper.

[Ex 2] Complete the following sentences according to the passage :

1. The four categories of computer hardware are _____, _____, _____ and _____.
2. A well-designed CPU makes the computer have strong processing _____, and high processing _____ and uses the amount of main _____ effectively.
3. The brain of the computer is the _____.
4. The main memory can be also called _____ memory, _____ storage, or just _____.
5. The example for input device in this passage is the _____; the most common components of processing hardware are the _____ and _____ and the output device this passage deals with is the _____.

Exercises to Terms and Vocabularies

[Ex 3] Part A. Match each of the following terms to the phrase or definition that is most closely related.

A. data processing B. keyboard C. information D. computer E. monitor
F. user G. data H. memory

1. some one who does not necessarily have much technical knowledge about computers but who makes decisions based on information processed by the computer
2. equipment made up of a combination of electronic and electromechanical (电子机械) components that uses software to process data
3. raw, unorganized and not processed facts
4. meaningful and useful facts that have been processed from data by a computer
5. most common type of input device used with computers
6. processing of data into information
7. output device that can display text and graphics in a variety of colors
8. primary storage of the computer, which can be thought of as an electronic desktop

Part B. Use the terms mentioned above to complete the following sentences:

1. A display screen often called a monitor, serves as a window on main memory, allowing the _____ to view its contents.
2. Color _____ displays characters, charts, pictures, and diagrams in color.
3. A computer is a machine whose function is to accept _____ and process them into information.
4. The basic input device on most small and microcomputer systems is a _____.
5. A computer is a _____ machine.
6. Unless some human being needs the _____, there is no point to processing the data.
7. A _____ is a machine whose function is to accept data and process it into information.
8. A computer cannot execute a program stored on disk unless it is first copied into main _____.

[Ex 4] Fill in the blanks with the words given below. Change the forms if necessary.

function	code	input device	instruction
retrieve	manipulate	hard copy	screen

1. The computer's _____ reads the information into the computer.
2. With a touch screen or light pen, a user enters a point simply by touching a spot on the _____.
3. The processor _____ the data, storing the results back into memory.
4. If a computer is to function without direct human control, it must be given a set of _____ to! guide it, step by step, through a process.
5. In Windows 98, the Recycle Bin is a temporary storage place for deleted files. You can use it to _____ files deleted in errors.
6. Input is a process that involves the use of a device to encode or transform data into digital _____ that the computer can process.
7. One way of obtaining _____ is to press the Ctrl and Print Screen keys simultaneously.
8. The cursor control keys found on many keyboards perform the same _____.

Passage for Reading: What Is a Computer System?

The term computer is used to describe a device made up of a combination of electronic and electromechanical (part electronic and part mechanical) components. By itself, a computer has no intelligence and is referred to as hardware. A computer doesn't come to life until it is connected to other parts of a computer system. A computer system is a combination of five elements (listed here in the order of how expensive it would be to replace them in a system, from least to most expensive):

- Hardware
- Software
- Data/information
- Procedure

- People

When one computer system is set up to communicate with another computer system, connectivity becomes a sixth system element. In other words, the manner in which the various individual systems are connected—for example, by phone lines, microwave transmission or satellite—is an element of the total computer system.

Software is the term used to describe the instructions that tell the hardware how to perform a task; without software instructions, the hardware doesn't know what to do. People operate the computer hardware; they create the computer software instructions and respond to the procedures that those instructions present. You will learn more about software and procedures later. Right now we want to discuss the importance of data and information.

The purpose of a computer system is to convert data into information. Data is raw, unevaluated facts and figures, concepts, or instructions. This raw material is processed into useful information. In other words, information is the product of data processing. This processing includes refining, summarizing, categorizing, and otherwise manipulating the data into a useful form for decision making. For example, the facts and figures contained in a stack of customer orders waiting to be entered into a computer-based order entry system are data; after the data is entered and processed, an output report about how that data affected product inventory would be information.

People “capture” data in a variety of ways—for example, by reading, listening, or seeing. Then they may record the data on a document. For instance, Roger Shu records his name on an employee timecard by first entering the letter R. This letter, and each of the remaining letters in his name, is an element of data, as are the numbers 12/22 and 5, used to indicate the date and the number of overtime hours worked. By themselves, these data elements are useless; we must process them to make them mean something. The report produced when Roger's data is run through a computer-based employee records system gives us information—for example, the amount of money due Roger for his overtime work.

Exercise to the Passage for Reading

[Ex 5] *Decide whether the following statements are true (T) or false (F) in relation to the information in the passage.*

1. Usually the term computer is referred to as hardware.
2. The manner in which the various individual systems are connected is also an element of the total computer system.
3. Without being connected with another computer system your computer can't be called a computer system.
4. Usually hardware is more expensive to replace than software.
5. Without software instructions, the computer doesn't know what to do.
6. People can make decisions according to the data collected in a variety of ways.
7. The facts and figures can be converted into useful information by the computer.
8. All data can be changed into information.

Unit 2

Passage: Types Of Computer Systems

Para 1 You should be familiar with the differences among computer systems if you want to show a potential employer that you have a fundamental knowledge of computer. Computers come in a variety of sizes and shapes and with a variety of processing capabilities. The earliest computers were quite large because of the crude technologies used; as technological improvements were made in computer components, the overall size of computers began to shrink. Today, the complete CPU of a computer can be smaller than a postage stamp.

Para 2 To provide a basis for comparing their capabilities, computers are generally grouped into four basic categories:

- (1) Supercomputers, which are the powerful giants of the computer world;
- (2) Mainframe computers, which are large, extremely powerful computers used by many large companies;
- (3) Minicomputers, which are the next most powerful;
- (4) Microcomputers, which are the least powerful-but which you most likely will be required to use in business.

It's hard to assign a worthwhile definition to each type of computer because definitions can get bogged down in potentially confusing technical jargon. Nevertheless, the following definitions can suffice:

- (1) A supercomputer can handle gigantic amounts of scientific computation. It's usually maintained in a special room or environment, and may be about 50,000 times faster than a microcomputer. As a user in business, you probably would not have contact with a supercomputer. However, you might if you worked in the areas of defense and weaponry, weather forecasting, scientific research, at one of several large universities, or for the National Aeronautics and Space Administration.
- (2) A mainframe computer is a large computer, usually housed in a controlled environment, that can support the processing requirements of hundreds and often thousands of users and computer professionals. If you go to work for an airline, a bank, a large insurance company, a large accounting company, a large university, or the Social Security Administration, you will likely have contact, through your individual workstation, with a mainframe computer.
- (3) A minicomputer, also known as a midsize or low-end mainframe computer, is similar to but less powerful than a mainframe computer. It can support 2 to about 50 users and computer professionals. Minicomputers and mainframe computers can work much faster than microcomputers

and have many more storage locations in main memory. Many small and medium-sized companies today use minicomputers, so if you go into the business world, chances are good that you will have contact with a minicomputer.

- (4) The microcomputer is the type of computer that you undoubtedly will be dealing with as a user. Many readers are probably already familiar with the microcomputer, also known as a personal computer (PC). They vary in size from small portables, and laptop computers that you can carry around like a briefcase, to powerful desktop workstations, such as those used by engineers and scientists. A microcomputer—generally used by only one person at a time—uses a microprocessor chip as its CPU. As small as one quarter of an inch square, a chip is made of silicon, a material made from sand. Silicon is referred to as a semiconductor because it sometimes conducts electricity and sometimes does not (semi means “partly”), depending on applied voltages and added chemical impurities (“dopants”).

Para 3 In general, a computer's type is determined by the following seven factors:

- (1) The type of CPU. As noted, microcomputers use microprocessors. The larger computers tend to use CPUs made up of separate, high-speed, sophisticated components.
- (2) The amount of main memory the CPU can use. A computer equipped with a large amount of main memory can support more sophisticated programs and can even hold several different programs in memory at the same time.
- (3) The capacity of the storage devices. The larger computer systems tend to be equipped with higher capacity storage devices.
- (4) The speed of the output devices. The speed of microcomputer output devices tends to be rated in terms of the number of characters per second (cps) that can be printed—usually in tens and hundreds of cps. Larger computers' output devices are faster and are usually rated at speeds of hundreds or thousands of lines that can be printed per minute.
- (5) The processing speed in millions of instructions per second (mips). The term instruction is used here to describe a basic task the software asks the computer to perform while also identifying the data to be affected. The processing speed of the smaller computers ranges from .7 to 40 mips. The speed of large computers can be 30 to 150 mips or more, and supercomputers can process more than 200 mips. In other words, a mainframe computer can process your data a great deal faster than a microcomputer can.
- (6) The number of users that can access the computer at one time. Most small computers can support only a single user; some can support as many as two or three at a time. Large computers can support hundreds of users simultaneously.
- (7) The cost of the computer system. Business systems can cost as little as \$500 (for a microcomputer) or as much as \$10 million (for a mainframe)—and much more for a supercomputer.

Para 4 It's difficult to say exactly what kind of computer you'll be using in the business environment. Some companies use a combination of computers. For instance, a company with branch offices