

普通高等学校计算机专业特色教材

计算机专业英语教程

(第3版)

主编 宋德富 司爱侠

顾问 [美] Kenneth A. Peterson

Bonita L. Peterson



高等教育出版社
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内容提要

为了紧跟计算机技术和信息技术的高速发展,《计算机专业英语教程》(第3版)在上一版的基础上做了相应的内容更新与补充。在保留计算机基本体系及常用操作等内容的前提下,主课文及阅读短文都进行了大幅度的更新与扩充,特别关注最新技术热点,如蓝牙技术、因特网技术、防病毒技术及人工智能等。阅读短文紧紧围绕当今流行软件选材,大多为实际的英语操作指南,让学有余力的学生边学习专业英语,边实践操作,这为他们今后掌握新的流行软件做好充分准备。相关内容涉及 AutoCAD、FrontPage 及音频处理软件 Cool Edit 等。为了保持本教材的前瞻性,阅读短文还包括有关无线网络操作技术、结构系统分析、程序设计方法以及 DNA 计算机等新知识。练习部分增加了一些与主课文内容相近的理解练习,帮助学生们更好地掌握相关计算机英语知识。

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信息技术专业英语教材,也可供相关技术人员参考。

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关于本书

一、目的

本教程可供高等学校计算机专业及以计算机课程为主干专业课的学生作为计算机英语教材使用,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

《计算机专业英语教程》(第3版)保留了第2版中有关计算机基本体系及常用操作的内容,注重所选材料的实用性、广泛性和前瞻性,涵盖计算机的基本知识、计算机发展史、内存管理等内容,并特别关注最新技术热点,如蓝牙技术、因特网技术、防病毒技术及人工智能等。阅读短文紧紧围绕当今流行软件选材,大多为实际的英语操作指南,让学有余力的学生边学习专业英语,边实践操作,这为他们今后掌握新的流行软件做好充分准备。本书相关内容涉及 AutoCAD、FrontPage 及音频处理软件 Cool Edit 等。为了保持本教材的前瞻性,阅读短文还包括有关无线网络操作技术、结构系统分析、程序设计方法以及 DNA 计算机等新知识。练习部分增加了一些与主课文内容相近的理解练习,帮助学生们更好地掌握相关计算机英语知识。

三、体例

本教程以单元为基本构件。每个单元基本上包括:

1. Passage
2. New Words(第3版加注国际音标)
3. Phrases
4. Abbreviation(s)
5. Notes to the Passage
6. Comprehension Exercises to the Passage
7. Exercises to Terms and Vocabularies
8. Passage for Reading
9. Exercise to the Passage for Reading

本版新单词的界定在依据 2004 年 1 月教育部办公厅通知印发“大学英语课程教学要求(试行)”的基础上进行了一些调整,把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。将单词根据其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),以便教师在教学过程中把握重点,从而使本教程既适合于本科学生,也适用于专科学院计算机专业的学生。练习的设计除了包括主课文和阅读材料的理解测试之外,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 重点讲解长句和难句,为学生课后自学提供方便。

全书最后共有 4 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”紧密结合本教程内容,对计算机英语的阅读和翻译进行了归纳和点拨,可有效地帮助读者提高读译能力;“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量;“总词汇表”不仅包括主课文的单词、短语和缩略语,而且包括阅读短文中的新单词、术语和缩略语。

四、使用

本教程大约需用 72 学时。如果一周开设 4 课时,一学期 18 个星期,每周可完成一个单元,最后再用两周进行复习和考试。对于某些将本课程开设跨越两个学期,每周 2 课时的学校,也可以参照以上建议进行调整和执行。

附录中的有关内容可供学有余力的学生自学。

五、教学辅助材料

为了方便教学,本书配有相关材料,包括练习参考答案、教学相关资料,阅读课文译文及参考试卷和答案。为了方便您直接与作者进行互动,宋德富教授的 E-mail 地址为 sdfzml@vip.sina.com;司爱侠教授的 E-mail 地址为 zqh3882355@sina.com。也可以发信息至 13182311019 进行联络。

对于所有读者,在使用本书的过程中如果遇到任何问题,都可通过以上 E-mail 地址与作者联系,我们将尽可能提供帮助。

由于作者才疏学浅,错误之处在所难免,恳请读者不吝赐教。

六、致谢

本教程的编写得到了美国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。他们热心地回答了我们在编写过程中所遇到的疑问,并对本书的部分英文内容进行了认真的阅读、仔细的推敲和必要的修改;在编辑教学参考资料、翻译阅读材料及设计参考试卷的过程中,张美兰、孙正峰、张千帆及苑庆春老师全力以赴,付出了辛勤的劳动。对于他们的倾力帮助,我们在此一并表示深切的谢意。

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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 [ə'veiləbəl]	adj.	可用的
*	category ['kætigəri]	n.	种类, 类型, 类别, 分类
**	code [kəud]	n.	码, 代码, 编码, 程序
*	community [kə'mju:niti]	n.	社区, 社会
*	component [kəm'pəunənt]	n.	组件, 元件, 部件, 组成部分
**	computer-related [kəm'pjutə-ri'leitið]	adj.	与计算机有关的
*	contain [kən'tein]	vt.	包含, 包括
*	convert [kən'vet]	vt.	转换, 变换
*	coordinate [kəu'ɔ:dineit]	vt.	使协调, 调节
**	desktop ['desktp]	adj.	桌面的, 台式的
		n.	桌面
**	electromagnetic [i,lekt'rəumæg'netik]	adj.	电磁的
*	execution [i,eksi'kju:fən]	n.	执行, 实行
**	file [faɪl]	n.	文件

**	function ['fʌŋkʃən]	vt.	(保存)文件,把...归档
		n.	函数;功能,操作
		vi.	起作用
*	graphics ['græfiks]	n.	图形
**	hardcopy ['hɑ:dkɒpi]	n.	硬拷贝
**	hardware ['hɑ:dweə]	n.	硬件
**	input ['input]	n.	输入
**	instruction [in'strʌkʃən]	n.	指令,指导
*	internal [in'tɜ:nəl]	adj.	内部的
***	laser-etched ['leizə-'etʃit]	adj.	激光蚀刻的
*	layout ['leiaut]	n.	安排,(页面)布局,版面布置
**	manipulate [mə'nɪpjuleɪt]	vt.	操作,控制,使用
**	memory ['meməri]	n.	记忆,存储,存储器,内存,主存
**	monitor ['mɒnɪtə]	n.	监视,显示器,监视器,监督程序
		vt.	监视,监控
**	output ['aʊtput]	n.	输出,输出设备
*	perform [pə'fɔ:m]	vt. & vi.	执行,完成,做,表演
*	permanent [pə:mənənt]	adj.	永久的,持久的
**	program ['prəʊgræm]	n.	程序,步骤,节目单
**	retrieve [ri'tri:v]	vt.	检索,恢复,寻回
**	software ['softweə]	n.	软件
*	sophisticated [sə'fɪstɪkeɪtɪd]	adj.	高级的,复杂的
*	storage ['stɔ:ridʒ]	n.	存储,存储器
*	television-like ['teli,vɪzənlaɪk]	adj.	像电视机的
*	unit ['ju:nɪt]	n.	设备,单位,单元
		adj.	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	操纵数据
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	设计良好的 CPU

Abbreviation

CPU	Central Processing Unit	中央处理器
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Notes to the Passage

- [Para 2] data 为 datum 的复数形式,但是在美国,在语法上 data 也可看做单数。因此,本文出现了用它代替 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 data is 要比 data are 更为常见。请阅读 UNIT 12 中对 data 和 datum 的一段描述:Some authorities and publishers, cognizant of the word's Latin origin and as the plural form of "datum", use plural verb form with "data". Others take the view that since "datum" is rarely used, it is more natural to treat "data" as a singular form. 某些权威部门和出版商认为 data 是拉丁词源 datum 的复数形式,其后使用复数动词;另外一些人认为,既然 datum 这种形式用得很少,把 data 看做单数就更为自然了。
- [Para 2] Although it isn't the only type of input device available,...

本句中的 available 为后置形容词,修饰前面的名词词组 the only type of input device,译为“唯一一种可供使用的输入设备”。英语中的部分形容词可单独作为后置修饰语,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 relatively 或 comparatively 修饰形容词或副词就不能再使用它们的比较级,如此处就不能说成:relatively more permanent.

4. [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。类似的情况如: A number of problems can occur when (you are) starting up.
5. [Para 3] Storage hardware serves the same basic function as do office filing systems ...
 本句中的 do 为代动词,代表前面所提到的动词短语 serve the same basic function(发挥同样的基本功能)。
6. [Para 3] ...except that it stores data as electromagnetic signals ...
 本句中的 except that 为从属连词,可以用 but 代替 except。
7. [Para 3] ...commonly on disk or tape, rather than on paper.
 “rather than”具有否定含义,常用来表示对照否定。本处意为:“存储在磁盘或磁带上,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.*

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

[Ex 2] *Complete the following sentences according to the passage.*

- The four categories of computer hardware are _____, _____, _____ and _____.
- A well-designed CPU makes the computer have strong processing _____, and high processing _____ and uses the amount of main _____ effectively.
- The brain of the computer is the _____.

4. The main memory can also be 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 that 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 |

- someone who does not necessarily have much technical knowledge about computers but who makes decisions based on information processed by the computer
- equipment made up of a combination of electronic and electromechanical (电子机械) components that uses software to process data
- raw, unorganized and not processed facts
- meaningful and useful facts that have been processed from data by a computer
- most common type of input device used with computers
- processing of data into information
- output device that can display text and graphics in a variety of colors
- 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.

- A display screen often called a monitor, serves as a window on main memory, allowing the _____ to view its contents.
- Color _____ displays characters, charts, pictures, and diagrams in color.
- A computer is a machine whose function is to accept _____ and process it into information.
- The basic input device on most small and microcomputer systems is a _____.
- A computer is a _____ machine.
- Unless some human being needs the _____, there is no point to processing the data.
- A _____ is a machine whose function is to accept data and process it into information.
- A computer can't 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	hardcopy	screen

1. The computer's _____ reads the user's 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 error.
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 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 per-

form 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, un-evaluated 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 meaningful. 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 prospective most powerful;
- (4) Microcomputers, which are the least powerful but most likely to 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 amount 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 area of defense and weaponry, weather forecasting, scientific research, in 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