

COMPUTER ENGLISH

计算机专业英语

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内 容 简 介

本教材分为两部分:第一部分包括十一章,内容涉及计算机软硬件、网络、INTERNET、WINDOWS、计算机病毒等知识。第二部分包括常见计算机英语应用文(文摘、文凭、求学信等)的写作方法和计算机英文出版物介绍及其阅读方法。教材包含许多新概念、新知识,文章风格多样,难度适中,注重实用,有助于读者提高本专业的英语阅读能力。

本书不但可作计算机专业学生的教材,同时也可作为计算机科技人员学习本专业英语或参加有关考试的参考用书。

计算机专业英语

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前 言

为适应计算机专业学生的教学需要,根据国家教委对《计算机专业英语》的要求,编写了此教材。

编写本教材,力求从几方面突出特点:第一,选材尽量新颖。第二,原文风格多样,本教材所选课文和阅读材料,是从多种书籍和资料中节选下来的,文风各异,能使读者领略各种文章的风格,了解其行文特色。第三,文章难度适当,符合学生的阅读能力。同时为满足英语水平较高一些学生的需求,每课选编了一篇有一定难度的阅读材料,教师可根据实际情况选用。第四,本教材加大了翻译能力的训练,每一课都留有翻译练习,能使学生在翻译能力上有所提高。第五,有一定实用性,本教材的下篇,就是为了体现这一特点而编写的。通过学习,能使读者掌握一些计算机专业方面的英文应用文知识,了解计算机英文出版物及其阅读方法,使其在实际工作中受益。

本教材分为两部分,使用者可根据教学总学时选择适当的内容进行教学。编者建议,上篇的每章用3~4学时,并尽量将阅读教材学完。这样可提高学生的阅读能力。下篇,可根据实际情况选择讲授或让学生自学。

本书由秦卫平任主编,承担全书的选编、统稿以及下篇第一章的编写工作。陈伟任副主编,负责翻译、课文词汇和疑难点的注释工作。美国犹他大学范息涛博士,负责原文的选材、译文及注释的审校工作。陈克巧编写了下篇第二章。

在编写本教材时,编者选用了一些相关资料,在此向原作者表示谢意,并请有关作者对有关版权事宜向编者或出版社联系。由于时间仓促,水平有限,难免错误和不妥,敬请读者批评指正。

本书是计算机专业学生的教材,同时也可作为计算机科技人员学习专业英语或参加有关考试的参考用书。

编者

1997年6月

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上 篇

计算机英语阅读

Chapter 1 What is a Computer

A computer is a general-purpose machine for storing and manipulating information . Beyond this, there are two very different schools of thought .

1 . Computers are dumb but very fast machines equivalent to extremely powerful calculators .

2 . Computers are thinking machines capable of awe-inspiring, almost limitless feats of intelligence .

Both of these things are true . In themselves, computers have a very limited set of skills . They can add numbers, compare numbers, and store numbers . This probably seems very strange . The computers we know or have heard about seem to do far more than this . They manipulate text, display graphic images, generate sounds, and do lots of other things that, to us, seem nonmathematical .

But internally, the computer handles all information as numbers, and everything it does involves storing and manipulating those numbers . In this sense, computers are like fancy adding machines . But assuming that you know how to “ talk ” to a computer in the language of numbers, as some programmers do, you can get it to do some amazing things . Any kind of information that can be represented numerically—and this includes everything from music to photographs to motion picture videos—can be manipulated via a computer, assuming someone knows how to provide the computer with the proper instructions .

This does not mean that you need to know how to learn to program computers(write your own instructions) in order to use them . Chances are you will simply buy and use programs that other people have created . Then you simply need to learn how to use those programs, a task that is far easier and less demanding than learning to write programs of your own .

Even if you have yet to encounter a computer at work or buy a computer for home, you probably deal with computer on a daily basis, whether you want to or not . Every time you use an automated teller machine, or watch the checker scan the bar code on your milk carton into an electronic cash register, or use a hand-held calculator, you are using a computer . Some of those computers—like the calculator, for example —are designed to do a very specific task, and the instructions for performing that task are built into the equipment itself .

The type of computer you will probably be dealing with at your home or office is more general purpose . It can do just about anything provided it is given appropriate instructions .

(1)

Computers come in a multitude of shapes, sizes, and types, ranging from those that fit in the palm of your hand or hide in the corner of your microwave or VCR to those that occupy

entire rooms, from ones that are generally used by one person at a time to those that are simultaneously used by dozens or even hundreds of people .

Personal computers are newcomers to the computer scene . Although the first computers were built in the 1940s, the first personal computers were only introduced in the 1970s and were primarily the province of hobbyists, almost like new-fangled ham radios . In 1975, Apple produced the first Apple computer, followed by the Apple II in 1978 . By 1980, there were a number of microcomputers on the market that could practicably be used in small businesses, but they were used only by people and companies that were either particularly adventurous or especially in need of automation . Then in the fall of 1981, IBM introduced the original IBM PC, whose instant popularity astounded everyone, including IBM . The success of the IBM PC was due to a combination of good timing (a lot of small to medium-sized businesses were itching for a financially feasible way to automate) and the IBM name, which lent new credibility to the whole notion of small desktop computing . The budding personal computer mania was further spurred by Apple's introduction, in 1984, of the original Macintosh computer: a type of computer specifically designed to be easy to learn, fun to use , and unimintimidating for the nontechnical user . Meanwhile, the speed and capacity of the machines continued to increase almost as fast as their size and prices shrank, making them all the more practical and popular . (Today's personal computers are hundreds of times more powerful than those sold ten years ago, generally cost less, and can fit in packages the size of a notebook .) By the end of the decade, personal computers had gone from being the province of hobbyists and retired engineers, to being an almost ubiquitous fixture in the work world and a member (so to speak) of almost 20% of U .S . households . (2)

The majority of personal computers currently used in business fall into two camps:

(1) IBM PCs and compatibles .

(2) Apple Macintosh computers (often referred to simply as " Macs ")

The terms IBM clone and IBM compatible mean a computer that uses similar components and a similar design to IBM-manufactured PCs, and therefore can use the same type of programs as IBM computers .

Macintosh clones are extremely rare, due to both certain technical complexities of the machine and Apple's very tightly held copyrights . In contrast, when it first created the PC, IBM decided to allow others to imitate its machines . The theory was that the more IBM imitations there were, the more likely it was the IBM would become the business standard .

WORDS AND EXPRESSIONS

manipulate v . 处理

calculator n . 计算器

image n . 图像

nonmathematical a . 非计算方面的
via prep . 通过
appropriate a . 适当的
instruction n . 指令
multitude n . 众多, 大量
microwave n . 微波炉
simultaneously ad . 同时地
scene n . (喻)舞台
hobbyist n . 业余癖好者
ham a . 搞业余无线电收发报的
popularity n . 普及, 流行
astound v . 使震惊
budding a . 正发芽的
notion n . 概念
credibility n . 可接受性
mania n . 狂热
feasible a . 可行的
unintimidate v . 不吓人
shrink (shrank, shrunk) vi . 缩小, 减少
ubiquitous a . 普遍存在的
camp n . 阵营
compatible a . 兼容的
clone n . 无性系(复制品)
imitation n . 仿制品

general-purpose 通用
different schools of thought 不同的学派, 不同的观点
awe-inspiring 使人敬畏的
feat of intelligence 智力
bar code 条形码
electronic cash register (ECR) 电子现金出纳机
VCR (Video Cassette Recorder) 录像机
new-fangled 新花样的
be equivalent to 相当于
far more than 远远不止
itch for 渴望
all the more 更加, 越发
so to speak 可以这么说

NOTES

(1) It can do just about anything provided it is given appropriate instructions .

句中 provided 是连接词, 意为 on condition that 假若, 倘使。

(2) By the end of the decade, personal computers had gone from being the province of hobbyists and retired engineers, to being an almost ubiquitous fixture in the work world and a member (so to speak) of almost 20% of U.S. households .

句中 being 为介词 from 和 to 的宾语。

EXERCISES

1 . Translate the following sentences into English .

- (1) 计算机可以处理文本、显示图形。
- (2) 个人计算机是为个人使用而设计的。
- (3) 在 80 年代初 IBM 公司造出了 IBM-PC。
- (4) 人们不会编写计算机指令也能使用计算机。
- (5) 计算机有各种类型和尺寸。

2 . Translate the following sentences into Chinese .

- (1) A computer is a machine for storing data and manipulating data into information .
- (2) Computers are thinking machines and have limitless feats of intelligence .
- (3) Personal computers are newcomers in the computer family .
- (4) You needn't know how to program in order to use computer .
- (5) Computer can add, compare, and store numbers in very fast speed .

3 . Translate the following paragraphs into Chinese .

(1) Just because personal computers are " personal " doesn't mean they can't talk to each other . Many businesses and other organizations have computer networks—groups of computers that are linked together so that they can share information, programs, and/or equipment such as printers, plotters and so on .

(2) The Web gave the Internet the first universal method of access to information regardless of the operating system you used . For the first time in 15 years, the pervasive platform is an open network, not a proprietary operating system .

(3) A computer is an electronic device that operates on timed pulse of electric . The processor reacts to pulse and no pulse pattern . Memory holds these on/ off patterns . The binary number system is ideal for representing such patterns because it uses only two symbols: 0 and 1 .

(4) The basic building block of a modern computer is a chip, a complex, integrated electronic circuit etched on a tiny square of silicon no bigger than a fingernail . A computer is assembled by sliding the appropriate boards into a cabinet .One board might hold the processor . Another might hold main memory, while a third might contain the electronics to link a particular input or output device to the system .

Reading Materials

(1) Brief History of Computer

In 1946 two engineers at the University of Pennsylvania, J .Eckert and J .Mauchly, built the first digital computer using parts called vacuum tubes . They named their new invention ENIAC . Another important advancement in computers came in 1947, when John von Newman developed the idea of keeping instructions for the computer inside the computer 's memory .

The first generation of computers, which used vacuum tubes, came out in the late 1940s . Univac I is an example of these computers which could perform thousands of calculations per second .In 1960, the second generation of computers was developed and these could perform work ten times faster than their predecessors . The reason for this extra speed was the use of transistors instead of vacuum tubes . Second-generation were smaller, faster and more dependable than first-generation computers . The third-generation computers appeared on the market in 1965 . These computers could do a million calculations a second, which is 1000 times as many as first-generation computers . Unlike second-generation computers, these are controlled by tiny integrated circuits and are consequently smaller and more dependable . Fourth-generation computers have now arrived, and the integrated circuits that are being developed have been greatly reduced in size This is due to microminiaturization, which means that the circuits are much smaller than before; as many as 1000 tiny circuits now fit onto a single chip . A chip is a square or rectangular piece of silicon, usually from 1/ 10 to 1/ 4 inch, upon which several layers of an integrated circuit are etched or imprinted, after which the circuit is encapsulated in plastic, ceramic or metal . Fourth-generation computers are 50 times faster than third-generation computers and can complete approximately 1,000,000 instructions per second .

At the rate computer technology is growing, today's computers might be obsolete by

1990 and most certainly by 1995 .It has been said that if transport technology had developed as computer technology, a trip across the Atlantic Ocean today would take a few seconds .

NOTES

the University of Pennsylvania (美国)宾西法尼亚大学

ENIAC Electronic Numerical Integrator And Calculator

计算机名称(电子数字积分及计算器)

John von Newman 约翰·冯·诺依曼

first-generation computer 第一代计算机

vacuum tube 真空管,电子管

transistor 晶体管

integrated circuits (IC) 集成电路

microminiaturization 超小型化

chip 芯片

etche 蚀刻

imprint 铭刻

encapsulate 包裹起来

plastic 塑料

ceramic 陶瓷

metal 金属

approxmately 近似地,大约地

obsolete 废弃的,过时的

(2) Terminals and PCs

An Internet terminal with a simple operating system can download small applets and files from robust servers, thus supplying the functionality of a PC at a much lower cost . Can you connect to your network with PCs ? Sure . But most PCs used in business are underutilized and expensive . The PC may be a relatively inexpensive device to purchase, but the sticker price is a fraction of the cost of ownership .

Personal Computers(PCs) have become personal activity tools, not personal productivity tools . we have all this functionality—spell checking, fancy fonts and graphics—that goes unused 80% of the time . And what percentage of corporate laptop PCs are redundant machines that are used solely to access the company network while workers are on the road ?

Customers will purchase Internet terminals because the overall cost of ownership is favorable, not because of the cheap hardware .If you can centralize the administrative functions while continuing to provide the independence employees have become accustomed

to, you solve a major headache for IS managers worldwide .

No one is predicting the death of the PC .The success of the Internet will fuel much of the new PC demand, and Internet browsing is now a standard feature of PCs everywhere .But there's a better way to serve the needs of some corporate employees who need access to their networks and want simple computers with virtually no administrative costs .

NOTES

Internet 国际互联网

applets and files 应用程序和文件

robust servers 强大的服务器

underutilize 未利用

sticker price 标签价, 广告价

fancy fonts and graphics 漂亮的字体和图形

laptop PC 便携机

administrative function 管理功能

IS (information system) 信息系统

corporate employee 公司雇员

predict 预测

Chapter 2 An Overview of the PC

This paper introduces you to the basic building blocks of the PC from a physical viewpoint . You can look at your computer in two basic ways: from a physical viewpoint and from a functional viewpoint .Typically, the physical viewpoint uses terms for parts that you can point to, for example, to a power supply, an adapter board, and a cable .

The functional viewpoint uses terms such as CPU , interleaved memory, and serial and parallel devices, which relate to how the computer operates .(1) These terms are fairly complex and focus more on the bits, bytes, and electronics of the computer system .

Both ways of looking at your computer are important, and the specific viewpoint often depends on the situation . If your modem is not working, for example, you may start with the modem's physical aspects by checking whether the cable is attached and power is applied . As you get into more detail, however, you may focus on the modem's functional aspects by considering the data stream being sent from the computer to modem .

Note that many of the terms that are introduced in this chapter are used throughout the paper . In many cases, a single term may be used in more than one way, depending on the context .(2) For example, the term disk is sometimes used to mean a specific disk, as in hard disk, floppy disk, or diskette . In other contexts, the term disk is used in a generic sense to mean any magnetic media, as in " write to disk " . I'll specify these various terms and contexts throughout .

At the most coarse physical division, your computer consists of hardware and software . Hardware is the system unit, monitor, and peripherals such as a modem, mouse, or printer . Software is any program that you install on your computer .

The shape and performance of hardware vary depending on the kind of computer that you have . A laptop computer, for example, is usually a single, self-contained box; a typical desktop computer has three main parts—a system unit, a monitor, and a keyboard .

Software is information that your computer can read . Software is usually stored on magnetic media, such as a disk, and is read by the microprocessor . All software falls into two categories: programs and data . This division is fairly obvious . A program consists of a series of instructions that your computer can understand and execute . Data are pieces of information that your programs can interpret and create .

On a PC, software can be divided in another way: the operating system—most frequently DOS (Disk Operating System)—and application software . An operating system provides the basic data and programs that your computer needs to operate and interact with you, the user . For example, an operating system typically can read and write files to disk or memory, display information on-screen, and interpret the keys that you press on the keyboard .

Application software consists of programs that you run . Such programs have a specific purpose and do tasks that you cannot, or would not, perform by typing a series of separate commands .For example, application software can be:

- a word processing program, such as Wordperfect (Novell, Inc .) or Microsoft Word (Microsoft Corp .)

- a database program, such as dBASE or Paradox(Borland International)

- a spreadsheet program, such as Excel (Microsoft) or Lotus 1-2-3

- a communications program, such as ProComm(DATASTORM)

- a graphics program, such as Harvard Graphics(Software Publishing Co .)

- a utility program, such as PC Tools or the Norton Utilities(Symantec)

Although most application programs serve a single purpose, others, known as integrated software, may combine the functions of several different programs and provide a more uniform user interface . For example, integrated packages, such as Microsoft Works (Microsoft Corp .), provide word processing, database, spreadsheet, and communication “ modules ” that you can access from one main menu .

The operating system links hardware and application programs .Many features of different programs are similar, and the operating system typically provides these common services .For example, almost all programs read and write to disk and show information on the display . Although each program can conceivably be written with instructions that perform these repetitive tasks, using an operating system for this purpose is more practical .

The operating system can communicate with the hardware and with the user or the application software .It can also transfer information between the the hardware and application software .

The application-software programmer does not have to worry about writing specific program instructions that write data to the full range of disk types found on PCs . The programmer simply instructs the operating system to write the data to disk, and the operating system deal with the hardware-dependent information .The operating system takes the data supplied by the application software and writes the data to the physical disk .

Notice that using an operating system makes software programs more generic . Programs are able to work on any computer that can run the operating system because the programs communicate with the operating system rather than with the hardware .

The hardware, therefore, depends on the operating system rather than on the software program . Many operating systems, and DOS in particular, can be tailored to fit a variety of hardware configurations .For example, your hard disk is assigned a type number that you use when you install it .The operating system then uses appropriate program code to translate application commands into the instructions that operate that particular type of hard disk .

If the operating system did not handle the details of communicating with different disk types, the application program would either have to support each hard disk type or not run on every hard disk . Such software would be prohibitively expensive or less-commonly used .

The operating system also links other hardware items, known as devices (or peripherals), that are attached to the computer. When you install the hardware device, a small program known as a device driver supplies the operating system with instructions on how to handle the device. Typical devices include video adapters and keyboards, as well as serial and parallel ports.

WORDS AND EXPRESSIONS

typically adv. 典型地
adapter n. 适配器
modem n. 调制解调器
specific a. 具体的, 特定的
generic a. 一般的, 普通的
coarse a. 粗略的, 粗线条的
peripheral n. 外设
performance n. 性能, 特性
laptop a. 便携的 . n. 便携机
microprocessor n. 微处理器
category n. 种类, 范畴
interpret v. 解释
communication n. 通讯
module n. 模块
conceivably adj. 可想象的
repetitive a. 重复的
tailor v. 制作, 裁剪
prohibitively adv. 抑制地
building blocks 构件
interleaved memory 交换存储器
floppy disk 软磁盘
in a sense 在某种意义上
application software 应用软件
integrated software 集成软件
full range of 全部范围
a variety of 各种各样的
prohibitively expensive 贵得使人不敢买
less-commonly used 不太常用
be attached to 连接在...
serial port 串行口

NOTES

(1) The functional viewpoint uses terms such as CPU, interleaved memory, and serial and parallel devices, which relate to how the computer operates .

这是一个复合句, which 引导一个非限定语从句, 修饰 serial parallel devices .

(2) In many cases, a single term may be used in more than one way, depending on the context .

句中 depending on 是分词短语, 作状语, 表示伴随情况。

EXERCISES

1 . Translate the following sentences into English .

- (1) 中央处理器, 并行及串行设备等是计算机常用术语。
- (2) 计算机系统由硬件和软件组成。
- (3) 硬件依赖于操作系统。
- (4) 文字处理程序、数据库程序、电子报表都是应用软件。
- (5) 几个应用程序合在一起组成集成软件。

2 . Translate the following sentences into Chinese .

- (1) You can look at your computer in a physical and a functional viewpoint .
- (2) A special purpose software would be prohibitively price .
- (3) All software falls into programs and data .
- (4) Computer users say: information at your fingertips .
- (5) Hardware consists of monitor and peripherals such as mouse or pinter .

3 . Translate the following paragraphs into Chinese .

(1) The initial attraction of the Network Computer is that it is supposed to be a lot less expensive than a PC and, more importantly, reportedly cuts the costs of upgrades, maintenance, software training .

(2) Application programs support end-user functions, allowing people to perform such tasks as playing a game, writing a paper, laying out a spreadsheet, or generating paychecks . Another type of software, called system software, performs its assigned tasks behind the scene . An operating system serves as an interface, bridging the gap between hard-