



普通高等教育“十一五”国家级规划教材升级版

# 计算机英语教程

## (第六版)

Computer English Course  
The Sixth Edition

司爱侠 张强华 主编



电子工业出版社

PUBLISHING HOUSE OF ELECTRONICS INDUSTRY

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**Publishing House of Electronics Industry**

北京·BEIJING

## 内 容 简 介

本书旨在切实提高读者实际使用英语的能力。本书立足实用,软件、硬件和网络并重,同时兼顾发展热点。

本书体例上以课为单元,课文选材广泛、风格多样;给出课文中出现的新词,读者由此可以积累计算机专业的基本词汇;给出课文中的常用词组;讲解课文中出现的疑难句子;每课一个核心语法点,系统地讲述计算机领域中常见的语法;书中有丰富的练习:既有语法练习,也有针对课文的练习,还有针对“计算机水平考试”的练习;技能训练中模拟了一个工作环境,以训练读者运用语言的能力;阅读材料进一步扩大读者的视野。书后附有“英语基本句型”、“英语单词速记法”和“参考答案”。本书特别配套了朗读资料,可登录电子工业出版社华信教育资源网免费下载,供读者随时播放收听。

本书曾获得全国畅销书(科技类)、江苏省高教科研成果优秀奖,并被教育部批准为“普通高等教育‘十一五’国家级规划教材”。

本书既可作为本科院校、高等职业院校、高等职业院校、中专的计算机专业英语教程,也可供所有IT行业人员自学参考。

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# 前 言

计算机科学是当今最具生命力的技术领域之一，其极高的发展速度、强劲的渗透能力、高附加值的经济价值使计算机技术进入了日新月异的发展时期。这也就决定了计算机领域中的新技术有着更短的生命周期，要求计算机行业的从业人员必须更快地掌握最新的技术。因此，计算机专业技术人员的英语水平比其他传统领域中同类人员的要求要高得多。可以毫不夸张地说，英语水平如何，是决定计算机技术人员成就大小的因素之一。

本书旨在切实提高读者实际应用英语的能力。本书立足实用，软件、硬件和网络并重，同时兼顾发展热点。

本书体例上以课为单元，每课由以下几部分组成：

## 1. 课文

这些课文选材广泛、风格多样。内容包括：个人计算机是如何工作的、可视显示单元、操作系统是如何工作的、数据结构、计算机程序、C 语言、关于 Java 技术、数据库基本概念、云计算、网络设备、软件工程、无线网络。

## 2. 单词

给出课文中出现的新单词，读者由此可以积累计算机专业的基本词汇。这些新词有的是《大学英语教学大纲》中没有而计算机专业中经常使用的单词，也有一些是《大学英语教学大纲》中有而计算机专业中有其他含义的单词。

## 3. 词组

给出课文中的常用词组。大部分是计算机专业词组，还有少量的计算机专业频繁使用的公共英语词组。

## 4. 难句讲解

讲解课文中出现的疑难句子，通过对其进行解剖和分析，帮助读者掌握分析、理解复杂句子的方法。

## 5. 语法

每课一个核心语法点，系统地讲述计算机领域中常见的语法。这些内容整合起来，可以作为“计算机英语简明语法手册”，对语法进行系统复习和学习。可以为读者的阅读、写作提供有力的支持。

## 6. 习题

既有语法练习，也有针对课文的练习，还提供了部分“计算机软件水平考试”真题（包括最近几年的程序员级、高级程序员级、系统分析师级试题）。另外，我们在每课中还安排了一道听力练习题，以提高读者的听力水平。

## 7. 技能训练

模拟了一个工作环境，以训练读者运用语言的能力。

## 8. 阅读材料

进一步扩大读者的视野，包括：嵌入式系统、打印机、操作系统、排序算法、网页设

计、面向对象编程、面向对象建模、数据挖掘、大数据、因特网一般用法、统一建模语言(UML)、物联网。

### 9. 参考译文

给出了课文的译文，供读者学习时对照、参考。

书后的“附录 A 英语基本句型”提供了常用的英语句型，以助读者在“汉译英”时心中有数；“附录 B 英语单词速记法”会有效地增加读者的词汇量，尤其是便于“破译”那些新构造出来的单词。本书特别配套了朗读资料，教师可以在多媒体教室播放、学生可以课后复听、自学者可以通过 MP3 播放机随时收听。朗读资料可登录电子工业出版社华信教育资源网 ([www.huaxin.edu.cn](http://www.huaxin.edu.cn)) 免费下载。

我们认为“计算机英语”类教材必须进行“动态维护”。因此，在本次修订中，更换了部分内容，反映了最新的教学思路和技术进步，读者的一些建议在本次修订中也予以采纳。本书由司爱侠、张强华担任主编，吕淑文、张千帆和解煜晨参加了编写工作。

我们收到了许多教师的反馈意见，对其中的问题我们都及时给予了回答，希望大家不吝赐教。教师可以索取参考试卷、电子教案、词汇总表等资料。如果联系，请发电子邮件至：[zqh3882355@sina.com](mailto:zqh3882355@sina.com)。

让我们共同努力，使本书成为一部“结构合理、取材得当、知识丰富、严谨大气”的优秀教材。

本书出版十余年来，经过多次修订、完善，已经得到广泛认可，被很多学校选为教材，不仅获得全国畅销书（科技类）、江苏省高教科研成果优秀奖，而且还被教育部批准为“普通高等教育‘十一五’国家级规划教材”。在此，对读者多年来的支持表示衷心感谢！

编 者

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# Lesson 1

## Text

### How PCs Work

When you mention the word "technology", most people think about computers. Virtually every facet of our lives has some computerized component. The appliances in our homes have microprocessors built into them, as do our televisions. Even our cars have a computer. But the computer that everyone thinks of first is typically the personal computer, or PC.

A PC is a general-purpose tool built around a microprocessor. It has lots of different parts—memory, a hard disk, a MODEM, etc. — that work together. "General-purpose" means that you can do many different things with a PC. You can use it to type documents, send E-mail, browse the Web and play games.

In this article, we will talk about PCs in the general sense and all the different parts that go into them. You will learn about the various components and how they work together in a basic operating session.

#### 1. On the Inside

Let's take a look at the main components of a typical desktop computer.

- Central processing unit (CPU) — The microprocessor, "brain" of the computer system, is called the central processing unit. Everything that a computer does is overseen by the CPU.
- Memory — This is very fast storage used to hold data. It has to be fast because it connects directly to the microprocessor. There are several specific types of memory in a computer:
  - ⊙ Random-access memory (RAM) —Used to temporarily store information that the computer is currently working with.
  - ⊙ Read-only memory (ROM) — A permanent type of memory storage used by the computer for important data that does not change.
  - ⊙ Basic input/output system (BIOS) — A type of ROM that is used by the computer to establish basic communication when the computer is first turned on.
  - ⊙ Caching — The storing of frequently used data in extremely fast RAM that connects directly to the CPU.
  - ⊙ Virtual memory — Space on a hard disk used to temporarily store data and swap it in and out of RAM as needed.
- Motherboard—This is the main circuit board that all of the other internal components connect

to. The CPU and memory are usually on the motherboard. Other systems may be found directly on the motherboard or connected to it through a secondary connection. For example, a sound card can be built into the motherboard or connected through PCI (Peripheral Component Interconnect).

- Power supply—An electrical transformer regulates the electricity used by the computer.
- Hard disk—This is large-capacity permanent storage used to hold information such as programs and documents.
- Operating system—This is the basic software that allows the user to interface with the computer.
- Integrated Drive Electronics (IDE) Controller—This is the primary interface for the hard drive, CD-ROM (Compact Disc, Read-Only Memory) and floppy disk drive.
- PCI Bus—The most common way to connect additional components to the computer, PCI uses a series of slots on the motherboard that PCI cards plug into.
- Small Computer System Interface (SCSI) —Pronounced "scuzzy", the small computer system interface is a method of adding additional devices, such as hard drives or scanners, to the computer.
- Accelerated Graphics Port (AGP) —AGP is a very high-speed connection used by the graphics card to interface with the computer.
- Sound card—This is used by the computer to record and play audio by converting analog sound into digital information and back again.
- Graphics card—This translates image data from the computer into a format that can be displayed by the monitor.

## 2. Connections

### 2.1 Input/Output

No matter how powerful the components inside your computer are you need a way to interact with them. This interaction is called input/output (I/O). The most common types of I/O in PCs are:

- Monitor—The monitor is the primary device for displaying information from the computer.
- Keyboard—The keyboard is the primary device for entering information into the computer.
- Mouse—The mouse is the primary device for navigating and interacting with the computer.
- Removable storage devices—Removable storage devices allow you to add new information to your computer very easily, as well as save information that you want to carry to a different location.
  - ⊙ Floppy disk—The most common form of removable storage, floppy disks are extremely inexpensive and easy to save information to.
  - ⊙ CD-ROM—CD-ROM is a popular form of distribution of commercial software. Many systems now offer CD-R (recordable) and CD-RW (rewritable), which can also record.
  - ⊙ Flash memory—Based on a type of ROM called electrically erasable programmable read-

only memory (EEPROM). Flash memory provides fast, permanent storage. CompactFlash, SmartMedia and PCMCIA cards are all types of Flash memory.

- ⊙ DVD-ROM—DVD-ROM (digital versatile disc, read-only memory) is similar to CD-ROM but is capable of holding much more information.

## 2.2 Ports

- Parallel—This port is commonly used to connect a printer.
- Serial—This port is typically used to connect an external MODEM.
- Universal Serial Bus (USB) —Quickly becoming the most popular external connection, USB ports offer power and versatility and are incredibly easy to use.
- FireWire (IEEE 1394) —FireWire is a very popular method of connecting digital-video devices, such as camcorders or digital cameras, to your computer.

## 2.3 Internet/Network

- MODEM—This is the standard method of connecting to the Internet.
- Local area network (LAN) card—This is used by many computers, particularly those in an Ethernet office network, to connect each other.
- Cable MODEM—Some people now use the cable-television system in their home to connect to the Internet.
- Digital Subscriber Line (DSL) MODEM—This is a high-speed connection that works over a standard telephone line.
- Very high bit-rate DSL (VDSL) MODEM—A newer variation of DSL, VDSL requires that your phone line have fiber-optic cables.

## 3. From Power-up to Shut-down

### 3.1 BIOS

Now that you are familiar with the parts of a PC, let's see what happens in a typical computer session, from the moment you turn the computer on until you shut it down.

A. You press the "On" button on the computer and the monitor.

B. You see the BIOS software doing its thing, called the power-on self-test (POST). On many machines, the BIOS displays text describing such data as the amount of memory installed in your computer and the type of hard disk you have. During this boot sequence, the BIOS does a remarkable amount of work to get your computer ready to run.

- The BIOS determines whether the video card is operational. Most video cards have a miniature BIOS of their own that initializes the memory and graphics processor on the card. If they do not, there is usually video-driver information on another ROM on the motherboard that the BIOS can load.
- The BIOS checks to see if this is a cold boot or a reboot. It does this by checking the value at

memory address 0000:0472. A value of 1234h indicates a reboot, in which case the BIOS skips the rest of POST. Any other value is considered a cold boot.

- If it is a cold boot, the BIOS verifies RAM by performing a read/write test of each memory address. It checks for a keyboard and a mouse. It looks for a PCI bus and, if it finds one, checks all the PCI cards. If the BIOS finds any errors during the POST, it notifies you with a series of beeps or a text message displayed on the screen. An error at this point is almost always a hardware problem.
- The BIOS displays some details about your system. This typically includes information about the following:
  - ⊙ Processor;
  - ⊙ Floppy and hard drive;
  - ⊙ Memory;
  - ⊙ BIOS revision and date;
  - ⊙ Display.
- Any special drivers, such as the ones for SCSI adapters, are loaded from the adapter and the BIOS displays the information.

The BIOS looks at the sequence of storage devices identified as boot devices in the CMOS Setup. "Boot" is short for "bootstrap", as in the old phrase "Lift yourself up by your bootstraps". Boot refers to the process of launching the operating system. The BIOS tries to initiate the boot sequence from the first device using the bootstrap loader.

C. The bootstrap loader loads the operating system into memory and allows it to begin operation. It does this by setting up the divisions of memory that hold the operating system, user information and applications. The bootstrap loader then establishes the data structures that are used to communicate within and between the sub-systems and applications of the computer. Finally, it turns control of the computer over to the operating system.

## 3.2 Operating System

Once loaded, the operating system's tasks fall into six broad categories:

- Processor management—Breaking the tasks down into manageable chunks and prioritizing them before sending to the CPU.
- Memory management—Coordinating the flow of data in and out of RAM and determining when virtual memory is necessary.
- Device management—Providing an interface between each device connected to the computer, the CPU and applications.
- Storage management—Directing where data will be stored permanently on hard drives and other forms of storage.
- Application Interface—Providing a standard communications and data exchange between software programs and the computer.
- User Interface—Providing a way for you to communicate and interact with the computer.

You open up a word processing program and type a letter, save it and then print it out. Several components work together to make this happen:

- The keyboard and mouse send your input to the operating system.
- The operating system determines that the word-processing program is the active program and accepts your input as data for that program.
- The word-processing program determines the format that the data is in and, via the operating system, stores it temporarily in RAM.
- Each instruction from the word-processing program is sent by the operating system to the CPU. These instructions are intertwined with instructions from other programs that the operating system is overseeing before being sent to the CPU.
- All this time, the operating system is steadily providing display information to the graphics card, directing what will be displayed on the monitor.
- When you choose to save the letter, the word-processing program sends a request to the operating system, which then provides a standard window for selecting where you wish to save the information and what you want to call it. Once you have chosen the name and file path, the operating system directs the data from RAM to the appropriate storage device.
- You click on "Print". The word-processing program sends a request to the operating system, which translates the data into a format the printer understands and directs the data from RAM to the appropriate port for the printer you requested.

You open up a Web browser and check out "HowStuffWorks". Once again, the operating system coordinates all of the action. This time, though, the computer receives input from another source, the Internet, as well as from you. The operating system seamlessly integrates all incoming and outgoing information.

- You close the Web browser and choose the "Shut Down" option.
- The operating system closes all programs that are currently active. If a program has unsaved information, you are given an opportunity to save it before closing the program.
- The operating system writes its current settings to a special configuration file so that it will boot up next time with the same settings.

If the computer provides software control of power, then the operating system will completely turn off the computer when it finishes its own shut-down cycle. Otherwise, you will have to manually turn the power off.

## New Words

technology	[tek'nɒlədʒi]	<i>n.</i> 工艺, 科技, 技术
computer	[kəm'pjʊ:tə]	<i>n.</i> 计算机, 电脑
virtually	['vɜ:tjuəli]	<i>adv.</i> 事实上, 实际上, 实质上



facet	[ 'fæsit ]	<i>n.</i> 方面; (多面体的) 面
computerize	[ kəm'pjʊ:təraiz ]	<i>vt.</i> 用计算机处理, 使计算机化
component	[ kəm'pəʊnənt ]	<i>n.</i> 部件 <i>adj.</i> 组成的, 构成的
appliance	[ ə'plaiəns ]	<i>n.</i> 设备, 器械, 装置
microprocessor	[ 'maikrəu'prəusesə ]	<i>n.</i> 微处理器
oversee	[ ,əʊvə'si:] ]	<i>vt.</i> 监督, 监视; 管理
memory	[ 'meməri ]	<i>n.</i> 存储器, 内存
MODEM	[ 'məʊdəm ]	<i>n.</i> 调制解调器
document	[ 'dɒkjʊmənt ]	<i>n.</i> 文件, 文档, 公文
session	[ 'seʃən ]	<i>n.</i> 对话期, 运行期
type	[ 'taip ]	<i>n.</i> 类型, 型, 种类, 样式 <i>v.</i> 打字
E-mail	[ 'i:meil ]	<i>n.</i> 电子邮件
desktop	[ 'deskɒp ]	<i>adj.</i> 台式的, 桌面的 <i>n.</i> 桌面
storage	[ 'stɔ:ridʒ ]	<i>n.</i> 存储
data	[ 'deitə ]	<i>n.</i> 数据, 资料
temporarily	[ 'tempərəri ]	<i>adj.</i> 暂时的, 临时的
store	[ stɔ:] ]	<i>vt.</i> 存储
information	[ ,infə'meɪʃən ]	<i>n.</i> 信息
permanent	[ 'pə:mənənt ]	<i>adj.</i> 永久的, 持久的
establish	[ is'tæbliʃ ]	<i>vt.</i> 建立, 设立
communication	[ kə,mju:ni'keɪʃn ]	<i>n.</i> 通讯, 通信
cache	[ kæʃ ]	<i>n.</i> 高速缓冲存储器
frequently	[ 'fri:kwəntli ]	<i>adv.</i> 常常, 频繁地, 经常地
swap	[ swɒp ]	<i>v.</i> 交换 <i>n.</i> 交换
motherboard	[ 'mʌðəbɔ:d ]	<i>n.</i> 主板, 母板
transformer	[ træns'fɔ:mə ]	<i>n.</i> 变压器
regulate	[ 'regjuleit ]	<i>vt.</i> 管理, 调整, 控制, 调节
capacity	[ kə'pæsiti ]	<i>n.</i> 容量
program	[ 'prəʊgrəm ]	<i>n.</i> 程序
interface	[ 'intəfeis ]	<i>n.</i> 界面, 接口
software	[ 'sɔftweə ]	<i>n.</i> 软件
controller	[ kən'trəʊlə ]	<i>n.</i> 控制器
bus	[ bʌs ]	<i>n.</i> 总线
plug	[ plʌg ]	<i>vt.</i> 插上 <i>n.</i> 插头, 插销