

中国高职院校计算机教育课程体系规划教材  
丛书主编：谭浩强

# 计算机专业英语

张洪颖 主编

董晓霞 王成霞 袁俊娥 副主编

计算机专业教育公共平台系列



COMPUTER PROFESSIONAL ENGLISH



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## 内 容 简 介

本书(中/英文对照)内容涉及计算机硬件、计算机软件、程序设计语言、数据库、多媒体、计算机网络等方面的知识。另外,还有科技英语的翻译技巧及语法知识。每章除了正文外,还列出了专业词汇对照表及语言点注释,正文后还附有练习题。后面还有每一章的练习题参考答案和参考译文,可供教师教学时参考,也可供自学者使用。书的内容覆盖面较广,建议教师在教学过程中根据教学的实际要求和学生的具体情况适当进行取舍。

本书适合作为高职高专院校计算机专业及相关专业的计算机专业英语课程教材,也可供计算机相关专业技术人员及其他有兴趣的读者学习和参考。

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近年来,我国的高等职业教育发展迅速,高职学校的数量占全国高等院校数量的一半以上,高职学生的数量约占全国大学生数量的一半。高职教育已占了高等教育的半壁江山,成为高等教育中重要的组成部分。

大力发展高职教育是国民经济发展的迫切需要,是高等教育大众化的要求,是促进社会就业的有效措施,是国际上教育发展的趋势。

在数量迅速扩展的同时,必须切实提高高职教育的质量。高职教育的质量直接影响了全国高等教育的质量,如果高职教育的质量不高,就不能认为我国高等教育的质量是高的。

在研究高职计算机教育时,应当考虑以下几个问题:

(1)首先要明确高职计算机教育的定位。不能用办本科计算机教育的办法去办高职计算机教育。高职教育与本科教育不同。在培养目标、教学理念、课程体系、教学内容、教材建设、教学方法等各方面,高职教育都与本科教育有很大的不同。

高等职业教育本质上是一种更直接面向市场、服务产业、促进就业的教育,是高等教育体系中与经济社会发展联系最密切的部分。高职教育培养的人才的类型与一般高校不同。职业教育的任务是给予学生从事某种生产工作需要的知识和态度的教育,使学生具有一定的职业能力。培养学生的职业能力,是职业教育的首要任务。

有人只看到高职与本科在层次上的区别,以为高职与本科相比,区别主要表现为高职的教学要求低,因此只要降低程度就能符合教学要求,这是一种误解。这种看法使得一些人在进行高职教育时,未能跳出学科教育的框框。

高职教育要以市场需求为目标,以服务为宗旨,以就业为导向,以能力为本位。应当下大力气脱开学科教育的模式,创造出完全不同于传统教育的新的教育类型。

(2)学习内容不应以理论知识为主,而应以工作过程知识为主。理论教学要解决的问题是“是什么”和“为什么”,而职业教育要解决的问题是“怎么做”和“怎么做得更好”。

要构建以能力为本位的课程体系。高职教育中也需要有一定的理论教学,但不强调理论知识的系统性和完整性,而强调综合性和实用性。高职教材要体现实用性、科学性和易学性,高职教材也有系统性,但不是理论的系统性,而是应用角度的系统性。课程建设的指导原则“突出一个‘用’字”。教学方法要以实践为中心,实行产、学、研相结合,学习与工作相结合。

(3)应该针对高职学生特点进行教学,采用新的教学三部曲,即“提出问题——解决问题——归纳分析”。提倡采用案例教学、项目教学、任务驱动等教学方法。

(4)在研究高职计算机教育时,不能孤立地只考虑一门课怎么上,而要考虑整个课程体系,考虑整个专业的解决方案。即通过两年或三年的计算机教育,学生应该掌握什么能力?达到什么水平?各门课之间要分工配合,互相衔接。

(5)全国高等院校计算机基础教育研究会于2007年发布了《中国高职院校计算机教育课程体系2007》(China Vocational-computing Curricula 2007,简称CVC 2007),这是我国第一个关于高职计算机教育的全面而系统的指导性文件,应当认真学习和大力推广。

(6) 教材要百花齐放,推陈出新。中国幅员辽阔,各地区、各校情况差别很大,不可能用一个方案、一套教材一统天下。应当针对不同的需要,编写出不同特点的教材。教材应在教学实践中接受检验,不断完善。

根据上述的指导思想,我们组织编写了这套“中国高职院校计算机教育课程体系规划教材”。它有以下特点:

(1) 本套丛书全面体现 CVC 2007 的思想和要求,按照职业岗位的培养目标设计课程体系。

(2) 本套丛书既包括高职计算机专业的教材,也包括高职非计算机专业的教材。对 IT 类的一些专业,提供了参考性整体解决方案,即提供该专业需要学习的主要课程的教材。它们是前后衔接,互相配合的。各校教师在选用本丛书的教材时,建议不仅注意某一课程的教材,还要全面了解该专业的整个课程体系,尽量选用同一系列的配套教材,以利于教学。

(3) 高职教育的重要特点是强化实践。应用能力是不能只靠在课堂听课获得的,必须通过大量的实践才能真正掌握。与传统的理论教材不同,本丛书中的教材是供实践教学用的,教师不必讲授(或作很扼要的介绍),要求学生按教材的要求,边看边上机实践,通过实践来实现教学要求。另外有的教材,除了主教材外,还提供了实训教材,把理论与实践紧密结合起来。

(4) 丛书既具有前瞻性,反映高职教改的新成果、新经验,又照顾到目前多数学校的实际情况。本套丛书提供了不同程度、不同特点的教材,各校可以根据自己的情况选用合适的教材,同时要积极向前看,逐步提高。

(5) 本丛书包括以下 8 个系列,每个系列包括若干门课程的教材:

- ① 非计算机专业计算机教材
- ② 计算机专业教育公共平台
- ③ 计算机应用技术
- ④ 计算机网络技术
- ⑤ 计算机多媒体技术
- ⑥ 计算机信息管理
- ⑦ 软件技术
- ⑧ 嵌入式计算机应用

以上教材经过专家论证,统一规划,分别编写,陆续出版。

(6) 丛书各教材的作者大多数是从事高职计算机教育、具有丰富教学经验的优秀教师,此外还有一些本科应用型院校的老师,他们对高职教育有较深入的研究。相信由这个优秀的团队编写的教材会取得好的效果,受到大家的欢迎。

由于高职计算机教育发展迅速,新的经验层出不穷,我们会不断总结经验,及时修订和完善本系列教材。欢迎大家提出宝贵意见。

全国高等院校计算机基础教育研究会会长  
“中国高职院校计算机教育课程体系规划教材”丛书主编

谭佐强

2008 年 8 月于北京清华园

计算机行业是国际化的行业。目前,该行业国际化程度日益提高,国际 IT 企业在国内的研发基地的建设、欧美软件外包的迅猛发展以及中国 IT 企业国际化进程的加快,都对国际化 IT 人才的培养提出了迫切要求,软件外包业的发展尤其明显。软件制造业、高科技研发逐渐向中国转移,然而外语语言问题却成为其发展瓶颈,缺乏既掌握专业技术又精通英语的人才。

针对目前的状况,高职院校要想培养出 IT 企业真正需要的人才,就必须加强学生在计算机专业英语方面的学习。本教材本着“以实用为主,突出应用”的高职人才培养的总体目标,坚持“实用为主,够用为度”的方针,以语言基本技能训练和培养实际从事涉外专业活动和工作需求的语言应用能力为出发点,结合学生专业知识,力求提高学生未来工作岗位所需要的专业英语技能。

本教材的编排渗透了任务驱动的模式。以任务为线索,每章通过一篇对话提出一个实际任务,然后引入正文——相关专业知识,最后在练习里回应开篇对话提出的任务——给出解决方案,解决问题。

本书每章除了正文外,还列出了专业词汇对照表及语言点注释,正文后还附有练习题。另外,教材后面还有每一章的练习题参考答案和参考译文,可供教师教学时参考,也可供自学者使用。书的内容覆盖面较广,建议教师在教学过程中根据教学的实际要求和学生的具体情况适当进行取舍。

本书的主要读者对象是计算机专业及相关专业的高职、高专学生和从事计算机相关工作的专业人员及其他有兴趣的读者。

由于编者水平有限,加之时间仓促,书中难免有不足与疏漏之处,欢迎广大读者批评指正。

编者

2009年5月

# CONTENTS

<b>Chapter1</b>	<b>Computer Hardware</b> .....	1
	1.1 Input and Output Devices .....	2
	1.2 Motherboard and CPU .....	8
	1.3 Storage .....	12
	Exercises.....	16
<b>Chapter2</b>	<b>Computer Software</b> .....	20
	2.1 System software .....	21
	2.2 Application software.....	28
	Exercises.....	36
<b>Chapter3</b>	<b>Programming Language</b> .....	40
	3.1 Introduction to Programming Language.....	41
	3.2 C .....	45
	3.3 Java .....	47
	3.4 Visual Basic .....	51
	Exercises.....	53
<b>Chapter4</b>	<b>Database</b> .....	56
	4.1 Introduction to Databases.....	57
	4.2 The Relational Database Model.....	59
	4.3 Database Languages.....	62
	4.4 Databases and the Web.....	65
	Exercises.....	68
<b>Chapter5</b>	<b>Multimedia</b> .....	72
	5.1 Introduction to Multimedia.....	73
	5.2 Uses of Multimedia .....	76
	5.3 Multimedia Tools .....	79
	Exercises.....	83
<b>Chapter6</b>	<b>Computer networks</b> .....	86
	6.1 Introduction to Network.....	87
	6.2 LAN.....	93

6.3 Internet.....	97
6.4 Network Security.....	101
Exercises.....	104
<b>Key to Exercises .....</b>	<b>107</b>
<b>Reference Translations.....</b>	<b>120</b>
<b>Translation Skills and Grammatical Problems for Scientific English....</b>	<b>165</b>
<b>References.....</b>	<b>192</b>

# 目 录

第 1 章	计算机硬件.....	1
1.1	输入设备和输出设备.....	2
1.2	主板和 CPU.....	8
1.3	外存.....	12
	练习.....	16
第 2 章	计算机软件.....	20
2.1	系统软件.....	21
2.2	应用软件.....	28
	练习.....	36
第 3 章	程序设计语言.....	40
3.1	程序设计语言简介.....	41
3.2	C.....	45
3.3	Java.....	47
3.4	Visual Basic.....	51
	练习.....	43
第 4 章	数据库.....	56
4.1	数据库简介.....	57
4.2	关系型数据库.....	59
4.3	数据库语言.....	62
4.4	数据库和网络.....	65
	练习.....	68
第 5 章	多媒体.....	72
5.1	多媒体简介.....	73
5.2	多媒体应用.....	76
5.3	多媒体工具.....	79
	练习.....	83
第 6 章	计算机网络.....	86
6.1	网络简介.....	87
6.2	局域网.....	93

6.3 因特网 .....	97
6.4 网络安全 .....	101
练习 .....	104
练习题答案 .....	107
参考翻译 .....	120
科技英语的翻译技巧及语法问题 .....	165
参考文献 .....	192

# Chapter

# 1

# Computer Hardware

## Reading

### Dialogue

### What can I do?

**Background:** *Richard and Jim were classmates in high school and they are also very good friends. Now Richard is majoring in computer science in a university while Jim majors in business trade. Jim wants to buy a computer, but he knows little about it, so he wants Richard to introduce him something about computer hardware. They talked about this on the phone before and made this appointment.*

**RICHARD:** Hi. Haven't seen you for a long time. How is everything going?

**JIM:** So far so good. And you?

**RICHARD:** I'm fine.

**JIM:** Thank you for lending me a hand.

**RICHARD:** You are welcome. Have you decided whether you would buy a brand machine or DIY ( Do It Yourself )?

**JIM:** I don't know for sure.

**RICHARD:** Do you have any idea of CPU, input devices, output devices and storage?

**JIM:** You know, I'm a layman. I am at a loss when hearing these specialized words and phrases.

**RICHARD:** In my opinion, first of all, you should have some knowledge of computer hardware, especially if you want to DIY. I've brought you some materials. You'd better have a look. Then we'll make a further decision.

**JIM:** Ok. That's just what I think. After going through the materials, I'll call you or we may meet somewhere.

**RICHARD:** That's all right. See you.

**JIM:** See you.

**(Here is the material)**

A computer is a fast and accurate system that is organized to accept, store and process data, and produce results under the direction of a stored program.

A PC system consists of two basic parts — hardware and software. Hardware is the physical part of the system that can be seen and touched while software refers to programs that control the operation of the hardware.

Computer hardware can be divided into four categories: CPU, storage devices, input devices and output devices.

Figure 1-1-1 shows the basic organization of a computer system.

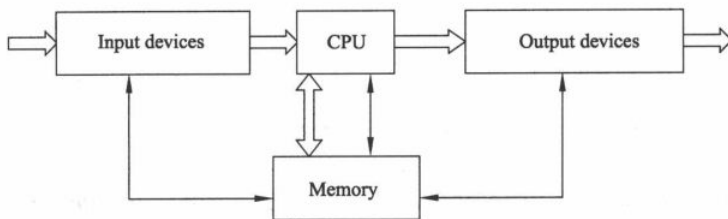


Figure 1-1-1 A computer system

## 1.1 Input and Output Devices

How do you put data to the CPU? How do you get information out? Here we will introduce the devices which enable people and computer to communicate. Input devices translate data and program instructions that people understand into a form that computers can process. Output devices do the opposite. They translate computer-processed information into a form that people can comprehend.

### Input Devices

There are several ways to get new information or input into a computer. To serve different application purposes, input devices can be classified into four types: letter input devices, pointing input devices, scanning input devices and audio-input devices.

The typical letter input device is keyboard. It is also one of the most common input devices. The keyboard has keys for characters (letters, numbers and punctuation marks) and special commands. Pressing the keys tells the computer what to do or what to write. Generally, the traditional 101-key keyboard has four key groups: the function key row at the top of the keyboard, the typewriter keypad, the cursor-edit keypad with arrows indicating up, down, right and left, and the numeric keypad (Figure 1-1-2). The new 104-key keyboard adds three

shortcut keys for Windows (Figure1-1-3). Besides the traditional design, there are also folding keyboard (Figure1-1-4) and ergonomic keyboard (Figure1-1-5). Mostly used brands are Logitech, Microsoft, Philips, ViewSonic, Shuangfeiyan, etc.

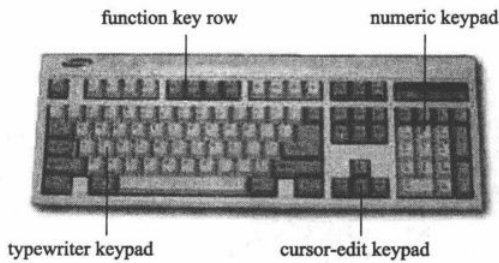


Figure 1-1-2 101-key keyboard

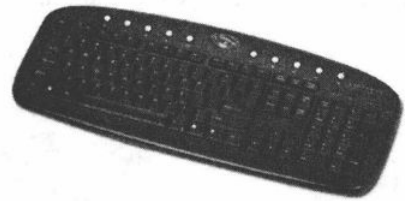


Figure 1-1-3 104-key Keyboard



Figure 1-1-4 Folding Keyboard



Figure 1-1-5 Ergonomic Keyboard

The most widely used pointing device is the mouse. A mouse controls a pointer on the monitor which usually appears in the shape of an arrow. A mouse can have one, two or three buttons, which are used to select command options and to control information presented on the monitor. There are three basic types of mouse: first, mechanical mouse. It has a ball at the bottom, and rolling it on a smooth surface can control the pointer on the screen (Figure 1-1-6). Second, optical mouse, which is the mostly widely used now. It emits and senses light to detect mouse movement. It can be used on any surface and is more precise (Figure 1-1-7). Third, cordless or wireless mouse (Figure 1-1-8). It uses radio waves or infrared light waves to communicate with the system unit. Mostly used brands are similar to those of keyboards.

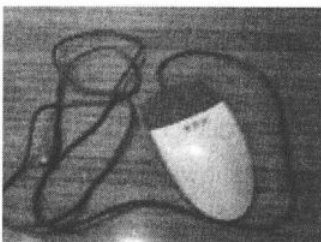


Figure 1-1-6 Mechanic Mouse

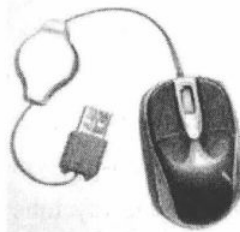


Figure 1-1-7 Optical Mouse



Figure 1-1-8 Cordless Mouse

Other pointing devices include trackball, touch screen, pointing stick, joystick, light pen and touch pad.

Scanners are scanning input devices. They allow users to input written documents, pictures, and other images into a computer system. Most scanners are of the flatbed, sheetfed,

dram or handheld type (Figure 1-1-9), among which flatbed and handheld are the most popular. Most scanners come up with Optical Character Recognition (OCR) software that enables a computer system to edit the scanned documents. The best known uses of OCR are bar code readers used to record purchases at retail stores (Figure 1-1-10). Famous brands include HP, EPSON, UMAX, Canon, etc.

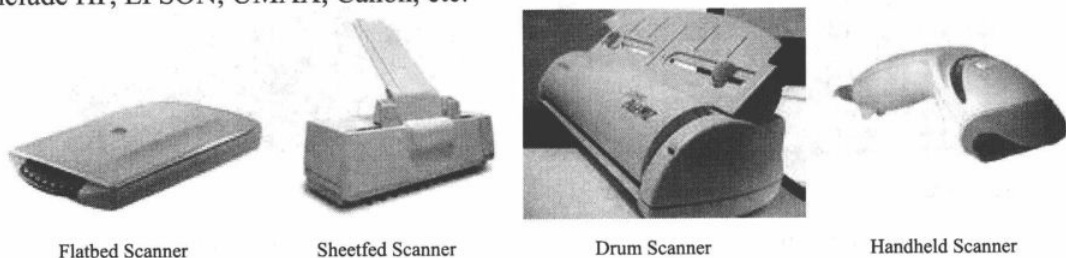


Figure 1-1-9 Types of scanners

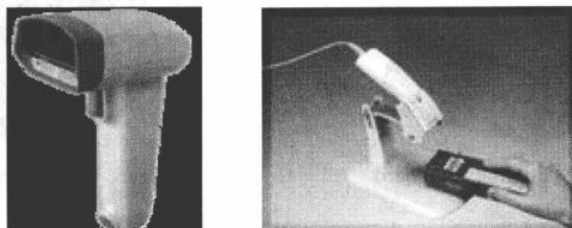


Figure 1-1-10 Bar Code Readers

Other scanning devices may include digital camera, video camera, Webcams and graphics tablet.

Audio-input devices mainly refer to voice and music input devices. Voice input is usually done by a microphone and appropriate software, such as IBM ViaVoice or Dragon Naturally Speaking. Music can be input into a PC through MP3 players or MP4 players, which are also output devices.

### Output Devices

Output devices produce results in either soft-copy or hard-copy form. Soft-copy refers to the image output on a monitor. Hard-copy refers to information output on paper — often by a printer. So the monitor and the printer are the two most common output devices.

A monitor is a hardware with a television-like viewing screen. It shows text and graphic images to the computer users, using cathode ray tube (CRT) (Figure 1-1-11), liquid crystal display (LCD) (Figure 1-1-12) or other image projection technology. CRTs are cheaper and display clearer images, while LCDs are thinner and occupy smaller space. Two important indexes of monitors are size and clarity. Size is indicated by the diagonal length of the monitor's viewing area. Common sizes are 14, 15, 17, and 21 inches. Clarity is indicated by its resolution, which is measured in pixels. For a fixed size monitor, the more pixels, the

clearer the images. Popular brands of monitors are SAMSUNG, Philips, ViewSonic, LG, MAYA, BenQ, FOUNDER, MAG, etc.

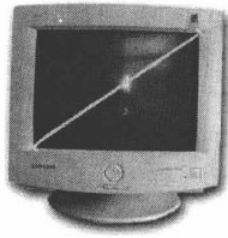


Figure 1-1-11 CRT



Figure 1-1-12 LCD

A printer transfers what you see on the monitor onto paper, using impact or non-impact printing technology. The dot-matrix printer (Figure 1-1-13) has been a popular lowcost PC printer, which uses impact printing. The best-known non-impact printers are the ink-jet printer (Figure 1-1-14) and laser printer (Figure 1-1-15). They are more quiet and more reliable than impact printers. Ink-jet printers can print colorful images, but most laser printers cannot. However, laser printers can print output of higher quality and at a higher speed. Famous brands of printers are Canon, EPSON, HP, SAMSUNG, etc.

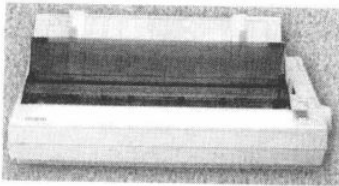


Figure 1-1-13 Dot-matrix Printer

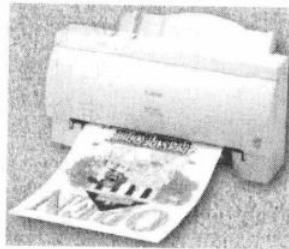


Figure 1-1-14 Ink-jet Printer

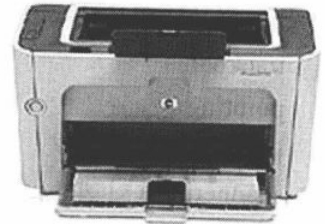


Figure 1-1-15 Laser Printer

Other output devices include: speakers and headphones, to output music or spoken voice; data and multimedia projectors, to project output for a larger audience to see; and voice-output systems.

### Combination of Input and Output Devices

In order to save space or total cost, or for specialized application, many devices combine input and output devices. Common combination devices include fax machines (Figure 1-1-16), multifunction devices (Figure 1-1-17), Internet telephony, and terminals.



Figure 1-1-16 Fax Machine

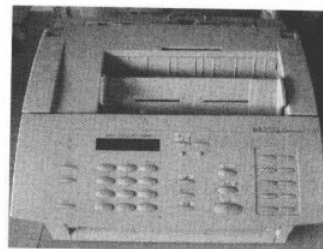


Figure 1-1-17 Multifunction Device