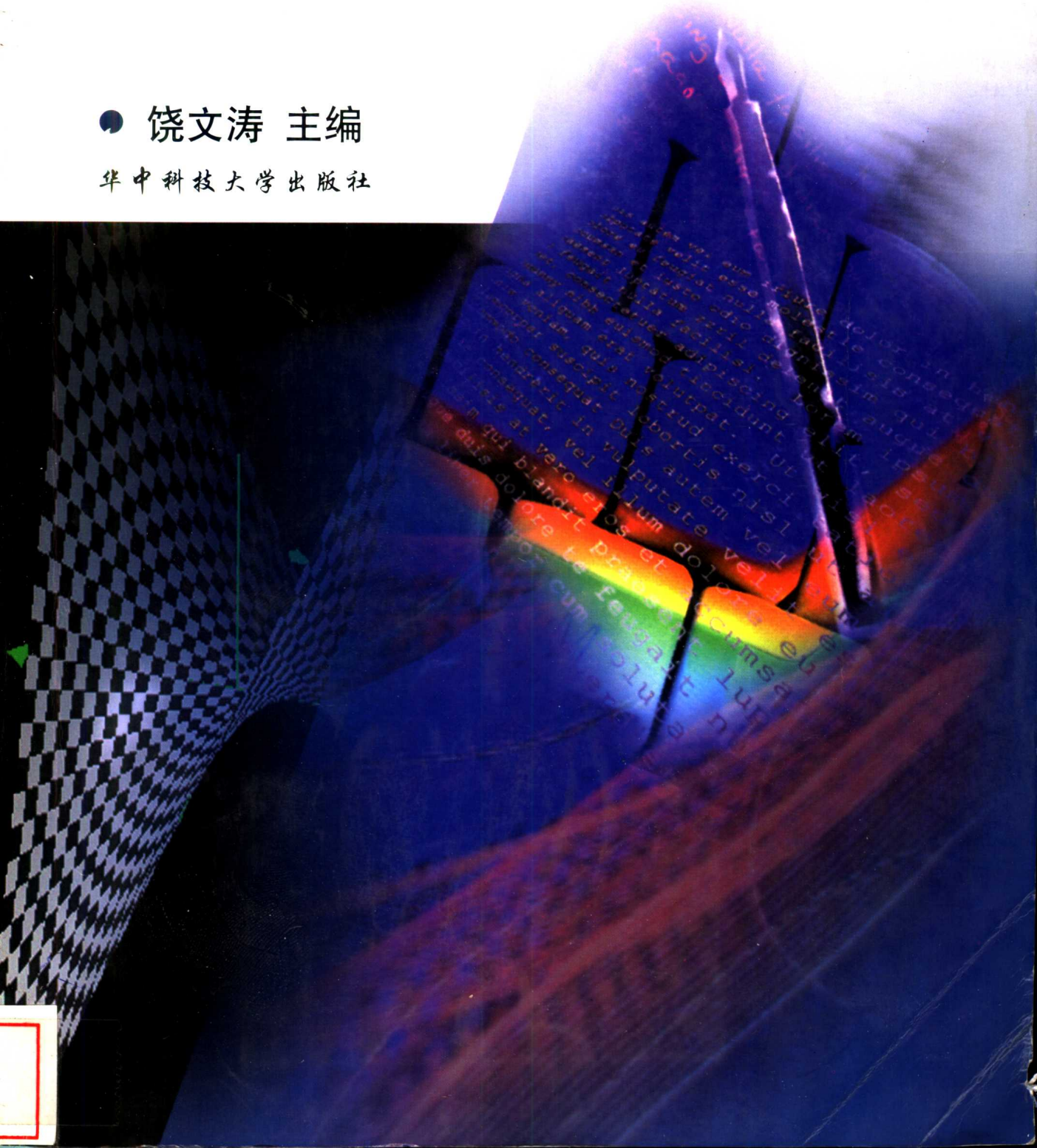
高职、高专计算机系列教材

计算机应用英语

饶文涛 主编

华中科技大学出版社



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高职、高专计算机
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内 容 简 介

本书主要用英语介绍了 PC 机的主要硬件和一些常用软件，也介绍了一些网上知识。硬件知识主要包括中央处理器、主板、芯片组、显卡、声卡、多媒体、打印机、硬盘和显示器等方面。软件知识包括操作系统软件如 DOS、Windows、Unix 和 Linux；办公软件如 Microsoft Word、Microsoft Excel；数据库软件及语言等方面。网络知识包括： Network、Internet 等方面。本教材所选用的材料都能反映当前计算机技术的新发展。

本书的内容比较浅显，但覆盖的计算机知识面较广，也比较实用，适合计算机类和工科类高职、高专学生使用，也可以供广大计算机爱好者和其他计算机用户参阅。

前　言

对于高职高专的计算机专业英语教学而言，编写一本比较合适的教材十分必要，因此我们尝试在这一方面编写本作一探索。

高职高专的计算机英语教材该是怎样的，包括哪些内容，深浅程度如何，都是我们一直在思考的问题。我们由一线教师组成的编写组经讨论一致认为，教材一定要适合大部分高职高专学生的实际水平。这包括两个方面：首先，要考虑他们的实际英语水平，希望学生借助词典就能看懂教材；其次，所选内容必须是他们这一层次的，这样才能学以致用，同时所选的内容一定要使学生感兴趣，学生不仅仅能学到专业英语词汇，而且能扩大知识面，并能获得一些有趣的小知识。在内容上也应分层次，对于英语水平较高的和感兴趣的学生，应为他们补充有关的阅读材料，供他们课余时间阅读，提高他们的实际阅读能力。

本教材的使用对象是高中毕业后受过两年高职普通英语教育的高职学生，他们已掌握相应的基本英语词汇和常用语法。

经过对本教材的 60~80 学时学习，学生能掌握数百个科技和专业词汇，基本能看懂有关计算机及其零部件的说明书和广告、能基本理解各种软件的操作提示和帮助说明、能上网浏览计算机英语世界。

本书第一、第二章由武汉职业技术学院的饶文涛老师编写；第三、第四章由黄冈职业技术学院的周赣琛老师编写；第五章、第六章由荆门职业技术学院的田原老师编写；恩施职业技术学院的李旭红老师编写了第六章的一部分。全书经澳籍专家 Stephen Thierry 仔细审读。

由于时间紧，专业性强，所以错误难免，请同行指正。

编　者

2000 年 12 月于武汉

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参考译文

CHAPTER 1 INTRODUCTION

1.1 A COMPUTER SYSTEM

A system means a group of related parts working together. A digital computer system is mainly composed of three parts: Input devices, Output devices and Central processing unit(CPU) which can accept, store and process data or symbols and yield output results fast under the indication of a series of instructions. The Fig. 1-1 gives you a good show of the basic organization of a computer system.

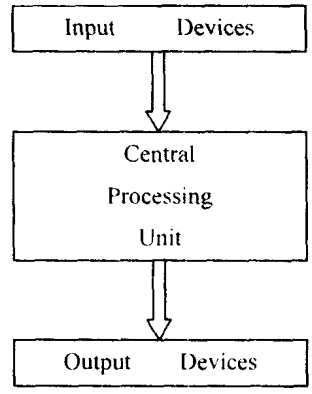

Fig. 1-1

If we looked a computer system as one of human being, the CPU would be the person's brain. The CPU is the most important part of a computer system, so some people like to call a computer as a electronic brain. Hence, the input devices would be sense organs of the person for sight, sound, touch, taste and smell to deliver the information to the brain. After the CPU processing the information accepted by the input devices, the output devices give out the results users need.

The CPU is so important for a computer system, how is the CPU organized then? The CPU is really divided into three main sections: The primary storage section, the arithmetic-logic section and the control section. You can learn their functions from their names respectively.

Users hardly touch CPUs, but all of them have used the input devices. In PC systems, users often touch keyboards, mice, input pens, touch screens, microphones and others for direct input. Regardless of their differences, they are components which make interpretation and communication between users and computer systems. The storage devices, floppy disk drives and hard disk drives, are commonly are used for indirect input.

Users have also employed a variety of output devices such as monitors, printers and plotters

which get the outcomes from the CPU in machine-coded form and change them into the forms users can understand. Hard disk drives or floppy disk drives often record the results on disks for next or another machine input.

Some people prefer to call input/output devices and floppy and hard disk drives monitors, printers, plotters, etc, peripheral devices (or just peripherals).

NEW WORDS

input device	输入设备
Central Processing Unit	中央处理器
store	储存
a series of instructions	一串指令
brain	大脑
primary storage section	基本储存段
component	部件
arithmetic-logic section	算术逻辑段
keyboard	键盘
interpretation	解释，翻译
communication	通信，交通
floppy disk drive	软盘驱动器
machine-coded form	机器码形式
peripheral	外围的
printer	打印机
plotter	绘图机
monitor	监视器
hard disk drive	硬盘驱动器

EXERCISE 1-1

I. Translate the following into English.

人机交流	计算机分成 3 部分
软盘与硬盘驱动器	外围设备
指令和数据	屏幕上的符号
人的 5 大器官	信息处理

II. Write a brief summary of the text in 60 words.

1.2 TYPES OF COMPUTERS

People have several ways to divide the types of computers from their different viewpoints.

Traditionally, people accept that there are two kinds of computers: digital computers and analog computers. The digital computers deal with numbers and symbols; the analog computers are only concerned with quantities such as electrical currents or voltages. But nowadays, the former will be more powerful and occupy the positions of the later.

Some people prefer to classify computers by their purposes. A special-purpose computer is designed to perform a unique task, into or in which a series of instructions is wired or permanently stored. It lacks versatility but works quickly and efficiently. A general –purpose computer can store varieties of programs and can so be applied to countless cases or jobs.

Although all digital computers are similar, different tasks require different computer system resources. For examples, playing games only needs a PC; to monitor space shuttle launch requires a large and powerful computer. From this point, Computers can be classified into four groups by their physical sizes. The smallest general-purpose computers are called microcomputers or PCs; the small computer systems are named minicomputers; the large computers are termed mainframes; the largest computers have a title super computers. The largest should be fastest, but it does not mean that others are slow. The properties and functions of computers not only depend on their speeds.

In the history of computers, there are a few development stages. Therefore, several computer generations occur in the history.

The first electronic digital computer was borne in America in 1946 and its basic elements were vacuum tubes. Through the 1950s, several others were built. They were the first generation of computers, huge, heavy, expensive and slow, as well as using much more power than today's, but they still made great contributions to computer science, such as the concepts of stored programs, random access. They made a basic model of modern electronic computers.

The invention of transistors not only produced small portable radios, but also bore the second generation of computers. They became small, light, less expensive, but they were not yet small and cheap enough to enter families.

In 1960s, integrated circuits came. Integrated circuits mean that huge complicated circuits and millions of their elements are only made on a small semiconductor chip, they ushered in the third generation of computers. Their typical models were The System 360 line of IBM computers. Specially, large scale integrated circuits made digital computers so popular that most middle class families could easily afford them. It is why you can see PCs everywhere.

Under the development of science and technology, biological computers and quantum computers will emerge out in near future . New generations of computers will be borne.

NEW WORDS

viewpoint	观点
digital computer	数字计算机
analog computer	模拟计算机

mainframe	大型机
feature	特征
concept	概念
classify	分类
vacuum tube	真空管
transistor	晶体管
integrated circuit	集成电路
generation	代
biological	生物的
quantum	量子
technology	技术
emerge	浮现

EXERCISE 1-2

I. Translate the following into English.

计算机可分成模拟计算机和数字计算机两种

以真空管为特征的计算机

科学和技术

集成电路标志着第三代计算机

II. Write a brief summary of the text in 50 words.

1.3 COMPUTER CODES

Computers only understand and store one language-machine language which is composed of strings of binary numbers,1s and 0s. An instruction consists of numbers, characters, or symbols. A program is made up of digits, characters, and instructions. How can numbers, letters and symbols be represented by strings of 1s and 0s ?

Any numbers, letters or symbols stored in computers need coded forms despite their differences. Only in certain forms, the computers can really understand them. How are they encoded ? The popular way is the binary coded decimal (BCD) approach. The approach can convert a decimal number into its binary equivalent but not into a pure binary form. We show the BCD equivalent of some symbols in Fig. 1-2. To show 8 and 9 needs 4 bits, so all 10 decimal digits are presented in the BCD by 4bits. Now, we can use BCD to express a decimal number:

1	0	0	0	0
2	0	0	1	0
3	0	0	1	1
8	1	0	0	0
9	1	0	0	1

BCD form Fig 1-2

Character	ASCII	
	Zone Bits	Numeric Bits
0	011	0000
1	011	0001
2	011	0010
A	100	0001
B	100	0010

Fig. 1-3 Selected characters And their ASCII 7-bits codes

389 = 0010 1000 1001 or 001010001001
decimal number BCD form

4 bit BCD is a good approach but can only express16 possible different characters, it is not sufficient for the use on a keyboard. There are 10 decimal digits, 26 lower-case letters, 26 capital letters and tens of other characters as well as control keys, totally more than 100 keys on a PC keyboard for input. So, 7 or 8 bit BCD codes are introduced. The 7 bit American Standard Code for Information Interchange (ASCII) is widely used in PC and data communication. Fig.1-3 shows you the ASCII format and the coding used to represent chosen characters. Here, an ASCII code is divided into two parts: The zone bit part and the numeric bit part. The zone bit part has three zone bits positions; the numeric bit part contains 4 numeric bit positions. The zone bit part indicates the category of a represented character, digit, letter or other symbol; the latter means the ordinal number or the binary equivalent of the character or digit in the related category. For example, the ASCII code of 3 is separated into two parts: 011 and 0011, 011 is zone bit part and 0011 is the binary equivalent of 3. The ASCII code of B is 100 0010, the 100 is its zone bit part, the 0010 is its ordinal number in English letter category. In a mainframe or supercomputer system, 8 bit BCD code is accepted.

Because of dust particles on storage media or improper humidity levels around the computer, one bit in a string of 7 bits may be lost during data input, processing or output, an incorrect character code is produced. The designers have to find a method to detect such errors. The method is adding an extra check bit or parity bit to the 7 bit code. So really 8 bits may be stored. See the following:

Character	ASCII code with a check bit		
	Check bit	Zone bits	Numeric bits
B	0	100	0010

The principle of check or parity is that the computers use the check bit to confirm that every valid character code should always have an even number of 1 bits. This is called an

even-parity format. But some computers employ an odd-parity format.

NEW WORDS

be composed of	由……组成
strings of	串
binary number	二进制数
encode	编码
be represented by	由……代表
decimal number	十进制数
approach	方法
convert ... into	把……转变成
zone bit position	标志位
numeric bit position	数字位
category	目录，类别
particle	质点
improper humidity level	不合适的湿度
confirm	确认
even parity	偶校验
format	格式

EXERCISE 1-3

I. Translate the following into English.

把一个二进制数变成十进制数　　不适当的温度

说明标志位的作用　　不正确的编码

检验错误　　确认有效

II. Write a brief summary of the text in 50 words.

III. Cloze test.

A code of a symbol consists of three parts. _____ is at the beginning of the code, _____ is in the middle of the code, _____ is at the end of the code.

CHAPTER 2 HARDWARE

2.1 PROCESSORS

Many people recognize that CPU is processor. It is right. But further more, CPU is one kind of processors, processors are not always CPUs. We declare that CPU equals processor in this textbook. Many manufacturers also call their CPUs processors. For example, if you detect the information of your PC, the PC may show you the following information:

Hardware Info Program	
Info Benchmarks Test Setup About Quit	
System Information	
Main Processor:	Intel Celeron, 299.7 MHz
Math Co-Processor:	Internal, 299.7 MHz
Bus Type:	ISA + PCI Local Bus (V2.10) + A.G.P. (V1.0)
Mainboard Model:	Unknown
Mainboard Chipset:	VIA VT82C691 Apollo Pro
First Level Cache: Instruction:	16 Kbytes, Data: 16 Kbytes
Second Level Cache:	On-Chip: 128 Kbytes
System Memory Size:	640 Kbytes
Extended Memory Size:	31,680 Kbytes
Shadow + Special RAM Size:	448Kbytes
Machine type:	IBM PC AT
Computer Name:	Unknown
BIOS Manufacturer:	Award Modular BIOS V4.51 PG [10/27/98]

Table 2-1

The item, Main Processor in table 2-1, means a main body of the CPU.

The other item in table 2-1 will be learned in late contents.

There are varieties of CPUs in computer markets. After many years' competition, three main CPU families occupies the computer markets, the Intel series, the AMD series and Cyrix series share the computer world, The Intel Pentium series is biggest one.

When you buy a PC or a CPU, you must pay attention to some indexes of the CPU.

Main frequency or internal frequency: The frequency is the working frequency of the CPU, which depends on the CPU clock and produce the internal working speed of the

CPU, the system speed. The frequency commonly is called CPU speed and from 133MHz to 1000MHz.

External frequency: It is the system bus working frequency and many manufacturers call it CPU frequency.

CPU ratio: The ratio is the proportion of internal frequency to external frequency. It is said that ratio = internal frequency / external frequency or CPU speed/CPU frequency.

In this CPU, you can find this information as follows:

CPU Speed: 300MHz
CPU Ratio: 4.5
CPU Frequency: 66MHz

You Can examine that 300MHz=66MHz ×4.5

L1 Cache and L2 Cache should also be thought about. L1 Cache in CPU works as fast as CPU speed and stores instructions and data temporarily like "scratch pad ". It is an important element in CPU. If its storage volume is larger, the CPU works faster. L2 Cache on bus between processor and main memory is less important than L1 Cache, but its storage volume is much larger than L1 Cache's. Other items thought about during choosing CPU will be learned later.

NEW WORDS

Processor	处理器
benchmark	标准
declare	声明
mainboard	主板
chipset	芯片组
cache	高速缓冲器
manufacturer	制造商
occupy	占有
extended memory	扩充内存
internal frequency	内频
external frequency	外频
storage volume	储存容量
temporarily	暂时
scratch pad	便笺

EXERCISE 2-1

I. Translate the following into English.

内外频之比　　暂时储存