计算机英语教程

JSY

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前　言

　　随着计算机技术的普及与发展，各类计算机专业人员对专业英文读物及教材的需求亦越来越多。为了配合中国计算机应用软件人员水平考试的需要、帮助广大计算机专业学生以吸工程技术人员学习计算机专业英语知识，我们和有关专家一起编写了这本《计算机英语教程》，作为各大中专学校计算机专业和计算机领域各层次教学及培训教材，同时亦可供有一定英语基础的计算机人员学习使用。

　　本《教程》的编写原则是方便教学及为自学者提供充分的指导。在选编课文及阅读材料时，广泛地参阅了西方有关方面的最新论述。在选材及组织结构上，书中既有基本概念，又有当前最新技术介绍。本《教程》按照计算机专业知识发展的一般规律共分成28课，可供全学年使用。每课均由课文、生词（包括关键词）、注释、阅读材料和练习五个部分构成。阅读材料与课文基本同步，与课文一起围绕计算机知识的某一专题或继续围绕某一专题循续渐进地展开分析、讨论。注释详尽，练习形式多样。为方便专业操作人员的需要，书后还加附了DOS命令。

　　本《教程》由河南金融管理学院英语副教授程琼同志主编，王世卿、刘爱华、杨武铁为副主编。河南医科大学计算统计中心副教授史元峰、郑州大学计算机培训中心副教授王世卿

负责本书的专业技术审校工作。在编写过程中曾得到郑州大学、河南医科大学、河南金融管理学院、河南电子工业学校有关方面领导的大力支持。在此一并表示感谢。

由于时间仓促，我们的水平有限，书中错误在所难免，热诚希望读者批评指正。

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Lesson One
Organization of Computer
System Components

A computer is a fast and accurate symbol manipulat ing system that is organized to accept, store, and pro cess data and produce output results under the direc tion of a stored program of instructions. Key elements in the basic organization of a computer system are input, processing, and output devices.

INPUT DEVICES. Computer systems use many devices forinput purpose. Some INPUT DEVICES allow direct human / machine communication such as a magnetizable material. Devices that read data magnetically recorded on special ly coated plastic tapes or flexible or floppy plastic disks are popular. The keyboard of a workstation connected directly to ... or ONLINE to ... a computer is an example of a direct input device. Additional direct input devices include the mouse, input pen, touch screen, and microphone. Regardless of the type of device used, all are components for interpretation and communication between people and computer systems.

CENTRAL PROCESSING UNIT. The heart of any computer system is the central processing unit(CPU). There are three main sections found in the CPU of a typical persenal com-

puter system: The primary storage section, The arithmetic—logic section, and the control section. But these three sections aren't unique to personal computer: They are found in CPUs of all sizes.

OUTPUT DEVICES. Like input units, output devices are instruments of interpretation and communication between humans and computer systems of all sizes. These devices take output results from the CPU in machine coded form and convert them into a form that can be used (1) by people. (e.g. a printed and / or displayed report) or (2) as machine input in another processing cycle.

In personal computer systems,display screen and desk top printers are popular output devices. Larger and faster printers, many online workstations, and magnetic tape drives are commonly found in larger systems.

The input / output and secondary storage units are some times called peripheral devices (or just peritherals) . This terminology refers to the fact that although these devices are not of the CPU, they are often located near it.

New Words:

accurate	a.	准确的，精密的
manipulate	v.	处理，变换，计算，加工
symbol manipulating system		符号处理系统
process	vt.	处理,加工

	n.	程序，过程
processing		处理机
processing devices		处理部件
human / machine communication		人—机通讯
magnetizable	a.	能磁化的，能产生磁性的
keyboard	n.	键盘，字盘
keyboard computer printer		计算机的键盘打印机
keyboard punch		键盘穿孔机
workstation	n.	工作站
online	a.	联机的，在线的，载线的
online workstation		在线工作站
the mouse		鼠标器
component	n.	元(组，部，零，构)件;部分;元素
section	n.	部分，单元
unique	a.	专门的，独特（有）的
display	n.	显示
display screen		显示屏
desktop printer		台式打印机
magnetic tape drive		磁带机；磁带驱动装置
peripheral	a.	周边的，外围的，外部的
	n.	外部设备，辅助设备
peripheral device		辅助设备

Notes to the Text:

1. Devices that ... are popular

此句中的 devices 即 input devices 输入设备

that read data magnetically recorded on specially coated plastic tapes or flexible or floppy plastic disks 是以关系代词 that 引导的定语从句，其先行词为 devices．其中 recorded on ... or floppy plastic disks 是过去分词短语作定语，修饰 data 一词，magetically 作状语，修饰 recorded，表明方式．

全句可译为：常用的是读取以磁化方式记录在专门涂敷的塑料带或软盘上的数据的输入设备．

2. connected directly to ... or ONLINE to ...

直接连接或在线连接

3. Regardless of the type of device used, ...

不论使用哪种设备 ...

regardless of 不管，不顾，无论

4. ... there are three main sections found in the CPU of a typical personal computer system: The primary storage section, The arithmetic- logic sectiom, and The control section.

一台典型的个人计算机的 CPU 由三个部分组成：主存贮器部分、算术—逻辑运算器和控制部分

句中 The ... The ... and The ... 三个定冠词 The 的第一个字母大写的目的在于突出 CPU 的三个组成部分。

5. These devices take output results from the CPU in machine-coded form and convert them into a form that can be used ...

输出设备从 CPU 中取出机器代码形成的结果，再将其转

换成…

take ... from ... : 从 ... 中取出

convert ... into ... : 将其转换成 ...

Supplementary Reading
Computer Generations

The First Generation of Computers (1946 through 1959)

The first generation of computers was characterized by the most prominent feature of the ENIAC-vacuum tubes. Through 1950, several other notable computers were built, each contributing significant advancements, such as binary arithmetic, random access, and the concept of stored programs. These computer concepts, which are common in today's computers.

The Second Generation of Computers (1959 through 1964)

To most people, the invention of the transistor meant small protable radios. To those in the data processing business, it signaled the start of the second generation of computers. The transistor meant more powerful, more reliable, and less expensive computers that would occupy less space and give off less heat than did vacuum-tube powered computers.

The Third Generation of Computers (1964 through 1971)

What some computer historians consider to be the single most important event in the history of computers occurred when IBM announced their System 360 line of computers on April 7, 1964. The System 360 ushered in the third generation of computers. Integrated circuits did for the third generation what transistors did for the second generation. The System 360s and the third generation computers of Honeywell, NCR, CDC, UNIVAC, Burroughs, GE, and other, manufactures made all pre viously installed computers obsolete.

The compatibility problems of second—generation com puters were almost eliminated in third—generation com puters. However; third— generation computers differed radically from second—generation computers. The change was revolutionary, not evolutionary, and caused con version nightmares for thousands of computer users. In time, the conversion of information systems from second generation to third—generation hardware was written off as the price of progress.

The Fourth Generation of Computers

Most computer vendors classify their computers as being in the fourth generation of computers, and a few call theirs the 'fifth generation'. The first three generations were characterized by significant techno logical breakthroughs in electronics — the use of vacuum tubes, then transistors, and then integrated circuits. Some people prefer to pinpoint the start of the fourth generation as 1971, with the introduction of large—scale integra· tion (more circuits per unit space) of electronic circuitry. How:

ever, other computer designers argue that if we accept this premise, then there would probably have been a fifth, a sixth, and maybe a seventh generation since 1971.

One of the most significant contributions to the emergence of the fourth generation of computers is the microprocessor. The microprocessor, which can be con tained on a single silicon chip, is a product of the microminiaturization of electronic circuitry. The first fully operational microprocessor, sometimes called a 'computer on a chip,' was invented in 1971. Today, there are more microprocessors on Earth than there are people. This device costs less than a soft drink and can be found in everything from elevators to satellites.

Generationless Computers

We may have defined our last generation of computers and begun the erea of generationless computers. Even though computer manufacturers talk of 'fifth'– and 'sixth'– generation computers, this talk is more a marketing play than a reflection of reality. Advocates of the concept of generationless computers say that even though technological innovations are coming in rapid succession, no single innovation is, or will be, significant enough to characterize another generation of computers.

Notes to the Supplementary Reading

1. to be characterized by ...

以 ... 为标志，以 ... 为特征

2. ENIAC 世界上第一台电子计算机的简称。即：ElectronicNumerical Integrator And Calculator 的缩写。

vacuum n.真空，真空装置 a.真空的

vacuum tube 真空管

3. binary arithmetic 二进制运算

binary 二进制的；二均分的

4. To those in the data processing business, ...

对从事数据业务的人

5. What some computer historians consider to be the single most important event in the history of com puters occurred when IBM announced their System 360 line of computers on April 7,1964.

此句中 what 为连接代词，引导一个主语从句，what 在从句中作 consider 的宾语，动词不定式 to be the single ... 为宾语 what 的补足语。

occured 为主句的谓语。连接副词 when 引导一个时间状语从句。翻译时可先译状语从句。本句可译为：一九六四年四月七日，当 IBM 公司推出他们的 360 系列计算机时，一些计算机史学家们认为这是计算机历史上一个最大的事件。

6. Intergrated circuits did for the third generation what transistors did for the second generation.

此句中 what 引导一个宾语从句即作前一个 did 的宾语，又是它所引导的宾语从句的逻辑宾语 what = that which.

7. integrated circuits 集成电路（器件）

8. The microprocessor, which can be contained on a single

silicon chip,... ... 制作在一个硅片上的微型处理器, ...
which 引导一个非限定性定语从句, 补充说明主语 the
microprocessor 的.

9. a 'computer on a chip' "单片机"
10. generationless computers 无代计算机

Exercises

I. Put into English:
    1. 存贮程序   2. 中央处理器
    3. 算术—逻辑运算器   4. 磁带机
    5. 显示屏   6. 处理数据
    7. 人—机通讯   8. 输入笔

II. True or False
    1. A computer is a fast and accurate symbol manipulating system.
    2. Output devices are instruments of interpretation and communication between humans and computers.
    3. Primary storage is the heart of any computer system.
    4. Input and output devices are the peripheral devices of computers.
    5. Computer systems use many devices for input purpose.

III. Questions:
    1. Can you give a few examples of input devices?

2. What is the definition of a computer?
3. Why is a computer called a system and how is a computer system organized?
4. What are the output devices of the personal computer system?

Lesson Two
The Hardware Components of a Typical System (1)

By the hardware components of a computer, we mean its actual physical units. We expect a computer to have some physical means of transmitting information to and from its environment, some structure for retaining this transmitted informaiton for repeated use, a physical mechanism for performing basic computations (such as additions, multiplications, testing for equality), and an overall control mechanism for supervising operation of the other units. A typical system has five such components, usually called INPUT, OUTPUT, MAIN MEMORY, CENTRAL PROCESSOR, and BULK STORAGE units.

The CENTRAL PROCESSOR comprises a control unit and an arithmetic / logic unit. The control unit directs the interaction of the other components, it selects the command to be executed, obtains the required data from memory or the input unit, signals the arithmetic / logic unit to perform a required computation, and sends data to memory for storage or to the output unit for display of results. The arithmetic / logic unit performs computa— tions and make decisions based on data given to it.

The MAIN STORAGE of the machine is usually composed of magnetic core units that facilitate fast access of information stored in there.

INPUT / OUTPUT units transmit information to main memory for processing by the system and from main memory for display of computed results. Many input / output units exist, and new varieties are being introduced in efforts to adapt the computer to a continualy wider range of activities.

The traditional form of input is the punched card, a thin rectangular card consisting of eighty columns. Each column contains twelve rows in which small holes can be punched; each configuration of holes in these rows represents a different character. For example, using what is called the Hollerith code, a column with a hole only in row 2 is interpreted as containing the digit 2 where as a column with a hole punched both in row 2 and in row 12 is interpreted as containing the character B. Thus, each column corresponds to one character and one such punched card can contain up to eighty characters of punched information.

These cards can be manually prepared on a keypunch machine. This device resembles a typewriter, except that depressing a keyboard key produces the appropriate configuration of holes in column of a card rather than producing a character of print. Typically, the user punches his instructions and data on punched cards. These cards are then read as input by a device called a card reader. A typical card reader can process