应急英语丛书

EXPEDIENT ENGLISH FOR MASTERING COMPUTERS

精通电脑应急英语

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北京工业大学出版社

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内容提要 Synopsis

本书是一本实用的计算机专业英语培训教材，在内容安排和结构上尽量结合现代计算机专业的特点，涉及计算机系统基础、硬件知识、操作系统、程序、计算机网络、多媒体等各方面的知识。

其编排的目的是使读者在较短的时间内掌握计算机专业英语词汇，能够比较熟练地看懂计算机屏幕上的英文提示、菜单、帮助文件等信息，并能够阅读和翻译计算机方面的资料。

书中出现的英语现象在英语科技文献中常见，其中一些难点通过注释形式，帮助读者理解。每节后列出本节的关键词汇，这些都有助于提高读者阅读英语计算机文献的能力。原文附有参考译文，供读者对照理解。

本书实用性强，可作为计算机专业及相关专业的计算机英语教材、各类学校各学科教师的培训教材，也可供计算机操作员、程序员、设备管理员和计算机公司、企业有关人员以及广大计算机爱好者和其他计算机用户自学。

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Chapter 1 Introduction to Computers

第一章 计算机引论

1.1 The Computer System

A computer system includes both hardware and software.

Hardware consists of the physical components and all associated equipment — integrated circuits, printed circuit boards, cables, power supplies, memory, and terminals — rather than[1] abstract ideas or instructions. You can see them, touch them, and feel them.

The basic organization of a computer hardware system consists of an input device, an output device and Central Processing Unit(CPU).

Software, in contrast, can not be seen, touched or felt. It is a series of instructions that guide a computer through some process. Software products may be divided into our basic types: application programs, programming language processors, operating systems and system utilities.

Application programs allow you to perform such tasks as solving statistical problems, keeping your company's account books or playing a computer game.

Programming language processors are programs that support the

use of a computer language on a computer system. They are tools which are used for the development of application programs.

Operating systems are control programs that manage hardware and software resources and enable you to run application programs.

System utilities are special programs that enhance the usefulness and capabilities of a computer.

It is possible to be familiar with various aspects of computer software without being concerned about the details of how the computer's hardware operates. It is also possible to design various components of the system's hardware without knowledge of the computer software that will run on it. However, if you are concerned with[2] computer architecture, you should have a knowledge of both hardware and software, because these two parts of the system are closely related to each other.

KEYWORDS

hardware	硬件
software	软件
input	输入
output	输出
resource	资源
cable	电缆
instruction	指令
terminal	终端
memory	存储器
operating system	操作系统
processor	处理器
application program	应用程序
integrated circuits	(IC)集成电路
printed circuit board	印刷电路板

central processing unit　　(CPU)中央处理器
programming language processor　计算机语言处理器

[1]rather than 而不是

例：This freedom of choice in developing programs leads to the notion that programming is an art rather than a science.
开发程序的这一选择性导致了程序设计是一门艺术而不是一门科学的说法。

[2]be concerned with 和……有关，涉及到

例：Once a program is in memory, the scheduler is no longer concerned with it.
一旦程序在内存中了，调度程序也就与此程序无关了。

译文

1.1 计算机系统

计算机系统包括硬件和软件两部分。

硬件不是抽象的概念或指令，而是由看得见，摸得着的物理器件及相关设备组成：集成电路、印刷电路板、电缆、电源、存储器和终端等。

计算机硬件系统的主要部件包括输入设备、输出设备和中央处理器(CPU)。

软件与硬件相反，并不是可见或可触摸的物体，而是一系列指令，它通过某些处理过程控制计算机。计算机软件可以分为四种基本类型：应用软件、计算机语言处理系统、操作系统及系统实用程序。

使用应用软件可以完成诸如统计事务、公司记账等工作，还

可以玩电子游戏。

计算机语言处理器用以支持计算机语言在计算机系统上的运行，是开发应用软件的工具。

操作系统是用以管理计算机硬件资源和程序执行的控制软件系统。

系统实用程序增强计算机的实用能力并扩大其应用范围的专用程序。

即使一个不了解计算机硬件的工作细节的人，也可以精通计算机软件。同样，一个不懂计算机软件的人，也可以设计计算机硬件的部件。但是，一旦你做的工作涉及到计算机的体系结构，就必须具有硬/软件两方面的知识。因为它们两者是互相紧密联系的。

1.2 Organization of Computer System Components

A computer is a fast and accurate symbol manipulating system that is organized to accept, store, and process data and produce output results under the direction of a stored program of instructions. This section explains why a computer is a system and how a computer system is organized.

Fig.1.1 shows the basic organization of a computer system. Key elements in this system include input, processing, and output devices. Let's examine each component of the system in more detail.

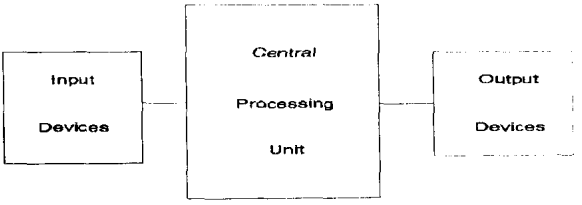

Fig.1.1

INPUT DEVICES. Computer systems use many devices for input purpose. Some INPUT DEVICES allow direct human/machine communication, while other first require data to be recorded on an input medium such as a magnetizable material[1]. Devices that read data magnetically recorded on specially coated plastic tapes or flexible or floppy plastic disks are popular[2]. The keyboard of a workstation connected directly to...or ONLINE to ... a computer is an example of a direct input device[3]. 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.

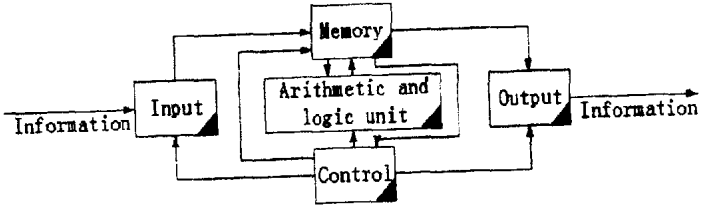

Fig.1.2

CENTRAL PROCESSING UNIT. The heart of any computer system is the central processing unit (CPU). As Fig. 1.2 shows, there are three main sections found in the CPU of a typical personal computer 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 CPU 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 (a) by people (e.g. a printed and/or displayed report) or (b) as machine input in another processing cycle.

In personal computer systems, display screen and desktop 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 sometimes called peripheral devices (or just peripherals). This terminology refers to the fact that although these devices are not a part of the CPU, they are often located near it.

KEYWORDS

stored program	存储程序
input device	输入设备
central processing unit	中央处理器
output device	输出设备
primary storage (memory)	主存储器
secondary storage (memory)	辅助存储器,二级存储趋
arithmetic-logic section	算术逻辑部件
workstation	工作站
magnetic tape drive	磁带机
display screen	显示屏
peripheral	外围设备,外设

[1]由 while 连接的并列复合句，有转折的意思，译成“而”、“可是”等。

[2]flexible or floppy plastic disks 可简单译为“磁盘”。

[3]online 与直接联接的概念不同。前者是“联机”，此处是指工作站键盘与主机联在一起工作，是指“物理联接”。

译文

1.2 计算机系统的组成

计算机是一种能接收、存储和处理数据，并能在存储指令程序控制下产生输出结果的快速、精确的符号加工系统，这一系统是在存储指令程序控制下工作的。本节说明为什么计算机是一个系统以及计算机系统是如何组成的。

图 1.1(略)是计算机系统的基本组成。系统的主要部件包括输入设备、处理机和输出设备。现在详细介绍每一部件。

输入设备　计算机系统使用多种输入设备。其中有些输入设备直接进行人机通信，另一些则首先要求把数据记录在诸如磁性材料那样的输入介质上。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。直接输入设备有与计算机的工作站直接或在线连接的键盘，以及鼠标器、输入笔、触摸式屏幕和话筒等。不论使用哪种设备，所有这些都是人与计算机系统之间进行解释和通信的部件。

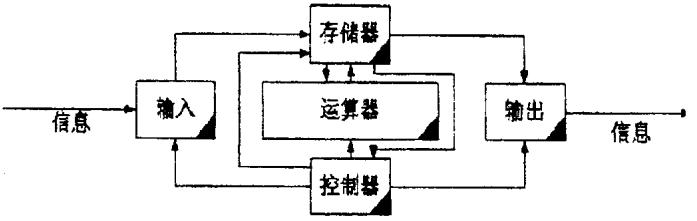

图 1.2

中央处理机　中央处理机(CPU)是计算机系统的核心。如图 1.2 所示,一台典型个人计算机的 CPU 由三部分组成:主储存器部分、算术—逻辑部分和控制部分。不仅个人计算机如此,各种规模的计算机的 CPU 都有这三部分。

输出设备　与输入设备类似,输出设备也是人与计算机系统之间的解释和通信的设备。输出设备从 CPU 中取出机器代码形式的结果,然后将其转换成(a)人们可读的形式(例如打印或显示报告)或(b)另一处理过程的机器输入。

在个人计算机系统中,常用的输出设备是显示屏和台式打印机。比较大型的计算机系统通常要配备更大、更快的打印机、多台在线工作站和磁带机。

有时也将输入/输出设备和辅助储存器称为外围设备,这是因为这些设备不属于 CPU,但又位于 CPU 附近。

1.3 Microcomputer Architecture

Most systems are constructed around a motherboard, which is metal framework containing a series of slots that are linked through a bus to an 8-bit or 16-bit processor. Memory is added by plugging a memory board into one of the open slots. Without some way of inputting and outputting information, a computer is use-

less, so a display interface (videocard) is plugged into another slot, and a display unit (monitor) is connected to it. A keyboard is plugged into a special slot on the motherboard. A printer can be attached through a printer (parallel port) interface. If a diskette interface is also plugged into another open slot, a diskette drive can be added to the system as well. At this point, you now have a complete microcomputer system.

Now, let's discuss the major devices in more detail.

1. CPU: It is used to carry out a variety of essential data manipulation and controlling tasks in the heart of the computer.
2. Main memory: It contains the programs the CPU is currently executing and the data these programs are operating on.
3. Mass storage devices: The hard disk, floppy disk and magnetic tape drives are called mass storage devices, which hold data for long-term storage.
4. Input/Output devices: The keyboard, CRT display (monitor), printer and XY plotter are referred to as input/output devices[1]. Input devices read coded data recorded on media or from keyboards. Output devices record or write information on paper, a computer screen, etc.

The components are linked by a common bus. This arrangement is called single-bus architecture. All communications between components flow over this bus under the control of processor.

For example, consider loading and executing a program. First, in response to a user's command, a signal is sent over the bus to the disk interface. Responding to the signal the disk interface communicates with the disk drive, which reads the program and transfers it over the bus and into main memory. Once the program is in memory, the processor can execute it by fetching its instructions one by one. Of course, the instructions move from memory to the processor over the bus. Finally,

as the program's instructions are executed, input data move from a peripheral device, over the bus, and into main memory, while output moves from memory, over the bus, and to an output device.

motherboard	母板
keyboard	键盘
drive	驱动器
slot	插槽
bus	总线
printer	打印机
bit	数位
plotter	绘图仪
interface	接口
hard disk	硬盘
diskette	软盘
floppy disk	软盘
storage	储存

[1]be referred to as ... 把……称做

例：Utility programs are often referred to as service programs.

实用程序常被称为服务程序。