



全国高等职业教育专业英语系列规划教材

# 计算机专业英语

林燕 主编



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# 计算机专业英语

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本书共分7章,分别介绍了计算机基础知识、计算机的硬件组成、计算机软件及应用、程序设计语言、计算机网络、计算机系统维护以及计算机网络安全和病毒防治等方面的专业英语知识。选材新颖,实用性强,精编了介绍计算机最新技术及应用的阅读文章,以提高读者计算机专业英语阅读水平。同时,各章后都附有新单词及短语、习题和阅读材料,帮助读者巩固所学知识,拓展知识面。

本书适合作为高职高专院校计算机及相关专业的“计算机专业英语”课程教材,也可以供计算机专业技术人员学习和参考。

为方便教学,本书配备电子课件等教学资源。凡选用本书作为教材的教师均可登录机械工业出版社教材服务网 [www.cmpehu.com](http://www.cmpehu.com) 免费下载。如有问题请致信 [cmpgaozhi@sina.com](mailto:cmpgaozhi@sina.com) 或致电 010-88379375 联系营销人员。

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# 前 言

随着计算机技术的日益普及，能熟练地阅读计算机专业文献、资料已成为广大计算机从业人员的必备素质。

本书编写的目的旨在让高职高专学生掌握计算机专业英语的基本词汇及术语，进而提高计算机专业英语的阅读能力，使之具备以英语为工具获取计算机知识的能力。

本书取材广泛，内容安排合理。全书共分7章，涉及计算机基础知识、计算机的硬件组成、计算机软件及应用、程序设计语言、计算机网络、计算机系统维护以及计算机网络安全和病毒防治等，学生完全可以根据所掌握的专业知识和英语词汇准确地理解课文内容。每章之后还精心组织了习题，内容既与课文相呼应，又扩大了学生的知识面。为更好拓展学生的能力，各章还配备了与课文内容相关联的阅读材料，有助于进一步提高学生的阅读能力和扩展相关知识。

本书由上海电子信息职业技术学院林燕担任主编，黑龙江工程学院刘晓红担任副主编，湖南铁道职业技术学院刘帼晖、郑州电力高等专科学校余宁参编。其中，林燕编写了第1、2、5章及第7章的7.1~7.3、7.5节，刘晓红编写了第4章及第6章的6.1~6.4节，刘帼晖编写了第6章的6.5节及第7章的7.4节，余宁编写了第3章，林燕对全书作了统稿工作。

由于时间仓促且作者水平有限，书中难免有疏漏、不足之处，敬请广大读者不吝赐教。

编 者



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## Chapter 1 Fundamental Knowledge in Computer

Computer, one of the greatest scientific inventions and technological innovations in the 20th century, has made an extremely important impact on human life and their social and productive activities. Its fast development has formed a huge industry with robust growth and inspired continued technical advancement worldwide, which has consequently brought about profound changes to the human society. Today, computer is regarded as an important symbol indicating that human has entered the information age.

### 1.1 History of Computer Development

In 1946, the world's first electronic computer, ENIAC (short for Electronic Numerical Integrator and Computer), was made in the University of Pennsylvania. ENIAC contained more than 17,000 vacuum tubes and many other components. It was huge in size, but very simple in functions compared with today's computers. Its occurrence, however, signified a milestone with deep and persistent influence on human life and society in the future.

The computer development, from the birth of the first electronic computer till present, can be approximately divided into 4 stages in accordance with the major components used in the computer.

(1) Vacuum tube computers—from 1946 when the first computer was successfully made to late 1950s.

The vacuum tube was the key feature of the computers in this period. Machine language or assembly language was used for programming computers, with operation speed from about a few thousand instructions per second to tens of thousands per second.

(2) Transistor computers—from middle 1950s to late 1960s.

The computers in this period used transistors as the major components, with smaller size and lower power consumption, but higher speed and reliability. The magnetic core was popularly used as the main memory while floppy disks and magnetic tapes were used as external storage media. High-level languages, such as COBOL, ALGOL, etc., were utilized as the programming languages. Operating systems emerged from the software.

(3) Integrated circuit computers—from middle 1960s to early 1970s.

The computers in this period used integrated circuits as the fundamental components. Its size was reduced; while its power consumption and price were further lowered, and its speed and reliability were greatly raised. Semiconductor memory replaced magnetic core memory. Operating systems were improved continually.

(4) Large-scale integration computers—from early 1970s to present.

In this period, large-scale integration (LSI) circuitries were used as the major components of the computers, and semiconductor chips with higher integration were used as the main memory. The calculation speed of the computers reached as high as one MIPS (million instructions per second) or one hundred MIPS. Research on the system architecture, such as multiprocessor system, distributed system, and computer network was progressing rapidly.

The LSI-based microcomputers have gained fast development since early 1970s. Its unique advantages, such as small size, low power consumption, low price, fine performance, high reliability and easy operation, inspired its widespread application to almost all aspects of the society and people's daily life and made it more and more popular.

## 1.2 Computer Architecture

Any computer system was composed of two parts, the hardware and the software. Hardware is the assembly of practical parts and components that are tangible and can be physically handled in a computer. The vast majority of computers in use today incorporate the stored-program principle set forth by von Neumann. The major components in a von Neumann architecture computer are the arithmetic/logic unit (ALU), the control unit, the input and output devices, the memory and the storage media (disks, floppies, tapes and CD-ROMs). Outside data are sent to the memory through the input device, the ALU manipulates the specific data stored in the memory and sent the outcomes to the memory. The output device is used for the computer user to receive the outcomes. The whole procedure of data input, output and interim processing is controlled by the control unit. The fundamental components of the computer hardware are shown in Figure 1-1 where the solid lines represent the data flow and the dotted lines represent the control flow.

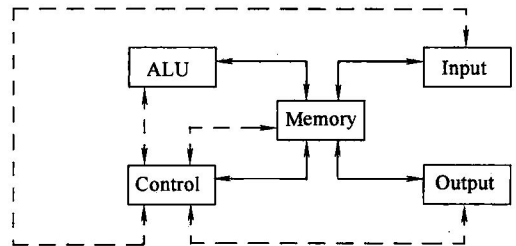


Figure 1-1

Generally, the central processing unit (CPU) is the device that contains all the circuitry that the computer needs to manipulate data and execute instructions. The CPU is composed of five basic components: RAM, registers, buses, the ALU, and the control unit.

## 1.3 Main Technical Indexes for Computer

The technical performance of a computer depends on its architecture, hardware components, peripheral devices, software resources and some other factors. Therefore, it is essential to synthesize various criteria when giving an appropriate appraisal to the performance of a computer. These criteria include word length, storage capacity, operation speed and peripherals equipped.

### Word Length

Computers can process information only in terms of binary digits, 0 and 1. A binary digit is

called a bit, and a group of 8 bits is called a byte. The maximum number of bits that a computer can process at a time in parallel is called its word length. The commonly used word lengths are: 8, 16, 32 or 64 bits. It is a measure of the computing power of a computer. A supercomputer can handle the word length over 64 bits, medium-sized computer can handle with 32-64 bits, minicomputer with 16-32 bits, and microcomputer with 8-32 bits. Most of the computers in use today adopt 32-bit word length. Computers with longer word length are more powerful. The longer the word length, the higher the operation speed of the computer is.

### Storage Capacity

Each user will pay attention to this index when purchase a computer. The storage capacity can vary in a wide range even for the same type of computer. So you should investigate it carefully when you make a choice. It must be pointed out that, except the capacity of the memory and the hard disk, the capacity of the visual buffer needs to be specially accounted in view of the development of the multimedia technology at present. The computer's performance in displaying Chinese characters, graphics and images will be seriously restricted if this capacity is too small.

There are two frequently used units in measuring the storage.

(1) Byte is used as the measuring unit, marked as B. Byte means one part of a word, that is, if you divide a word into several parts equally, one part occupies a byte. For example, if a 32-bit word is divided into 4 equal parts, 8 bits will occupy a byte. The storage capacity in microcomputers is usually measured in bytes, such as frequently used KB, MB, GB and TB. At present, the memory capacity of a microcomputer can reach several hundred GB.

$$1\text{KB} = 2^{10}\text{B} = 1024\text{B};$$

$$1\text{MB} = 2^{20}\text{B} = 1048576\text{B};$$

$$1\text{GB} = 2^{30}\text{B} = 1073741824\text{B};$$

$$1\text{TB} = 2^{40}\text{B} = 1099511627776\text{B};$$

(2) Binary bit is used as the measuring unit.

### Performance Indexes

The criteria used to assess the computer performance include operation speed, CPU time and execution time.

#### (1) Operation Speed

Generally speaking, the better the performance, the faster the operation speed of the computer should be. People naturally assess a computer's performance by its operation speed.

#### (2) CPU Time

It means the time the CPU takes to execute program.

CPU time = clock cycle \* average number of clock cycles per instruction (CPI) \* number of instructions.

#### (3) Execution Time

The execution time is also called experiencing time or responding time. The time a computer needs to complete a task, except CPU time, includes access waiting time, I/O device consuming time, time spent on operating system, and external bus delay. All these constitute the execution

time of a computer.

## 1.4 Main Applications of the Computer

It has been just 60-odd years since the birth of the first computer in 1946, but the development of the computer technology has been far beyond people's expectations. Today, computers have entered almost all aspects of our life and society. Computer applications can be generally divided into the following categories.

### Scientific Calculation

As one of the fundamental applications that we are familiar with, computers have been widely used in the scientific and engineering calculations on issues like the orbits of the man-made satellites, the parameters of the missiles, or the quake-resistance strengths of the houses.

### Data Processing

Data processing is the timely record, manipulation and calculation of data with the output made in the format we want by the computer. Compared with numerical calculation, data processing deals with large amounts of original data in a short time, but the formula is not complicated. With its widespread applications today, the computer is no longer just a tool for scientific calculation, but more for data processing. In a workshop, it can be used for production management, schedule adjustment, statistics report, quality analysis and control. In a financial department, it can be used for account registration, classification, summary, statistics and formation. We can also use it to realize office automation. The inputting, typesetting, plate making and printing of a document are implemented faster, more efficiently and more conveniently by the computer than by the traditional type. Computer communications, that is, data exchange through LAN or WAN, can be easily used to send and receive reports, data and graphic faxes.

### Automatic Control

Automatic control is another important field of computer application. Production procedures under automatic control by the computer can greatly raise both the quantity and the quality of the products, improve the production efficiency and the working conditions, and reduce the consumption of raw materials and the cost of the production.

### Design Assistance

Computer aided design (CAD) is a practical technique that makes designs with the help of the computer. CAD can be used to achieve automation or semi-automation of the design procedure, which not only shortens the period of design, facilitates product renovation and upgrade, reduces the cost of the production, saves manpower and material, but also ensures the quality of the products.

### Instruction Assistance

Computer aided instruction (CAI) means to teach the students with the help of the computer. The first large system of CAI, PLATO, was developed by the University of Illinois in 1960s. At present, numerous kinds of teaching software have been developed in the world. The special soft-

ware for CAI is called courseware, which is a major branch of CAD and can be classified by different teaching methods and different contents.

### **Artificial Intelligence**

Computers have the memory ability, and are good at logical reasoning and operation. Therefore it is possible for a computer to model human thinking. When endowed with the ability of learning and reasoning to a certain extent, it can accumulate knowledge by itself and solve problems independently. This is what we call the artificial intelligence of a computer. For examples, a computer can compile and explain high-level programming languages, and translate text or speech from one natural language into another by machine translation; a robot with a built-in computer can do strenuous and dangerous labor work as well as simple and repeated intellectual work in stead of humans in many occasions.

### **Entertainment**

We can watch TV and DVD, listen to music, and play games on the multimedia computers, or chat with friends on the Internet.

## **1.5 Trends of Computer Development**

The inventers of the first computer never expected that the computer technology would develop so fast. In a period of just 60 years, the computer has evolved from ENIAC, a machine that was ponderous, expensive, mistake prone and only used for scientific calculation, to a reliable and all-purpose device that enters almost all the nooks and crannies of our society today. However, the development of the computer technology in the next 60 years will throw the development in the past 60 years into the shade. The best computers today will be thought very primitive in the future, just as how the 60-year-old ENIAC looks like in the eyes of today's people. The computer is the crystallization of the painstaking effort of humans, and its development will keep progressing with human's persistent pursuit to the satisfaction of their mind.

The trends of computer development can be summarized in the following aspects.

### **Supercomputer**

The supercomputer with the highest speed and the largest capacity is necessary for dealing with tremendous and sophisticated problems, such as space engineering, petroleum prospecting, human genome project, and frontier technologies of national defense. The technical level in the research and production of the supercomputer symbolizes the comprehensive strength of a nation. Therefore it has become a hot spot of competition in the high technology fields among different nations.

### **Microcomputer**

Micromation was one of the technologies that gained fastest development after the emergence of the large scale integrated circuit. Micromation of the computer can better promote computer applications in an extensive way. Therefore, it is one of the important directions in computer development to make microcomputers smaller in size, stronger in functions, lower in price, higher in

reliability and more general in applicability.

### · Intelligent Computer

Computers have now reached a level way higher than human brain in data processing and calculation; but when dealing with intelligent issues, it is far inferior to human brain. One of the important directions of computer development is to endow the computer with some intelligence like human brain, enabling it to simulate humans in the reasoning, associating and thinking or even having some emotions.

### All-purpose Computer

Since late 1970s the term “personal computer” has appeared in the glossary and human has entered the personal computer era. Many researchers think that now we have entered the “post personal computer era” when the computer technology has melted into many different kinds of tools to perform their functions. Similarly, we have entered the “all-purpose computer era” when computers appear everywhere in our daily life. Such all-purpose computers will provide us unprecedented convenience and efficiency.

### Net and Grid

As the Internet and the World Wide Web have become widespread in the world and are approaching to the extent of mature, people begin to think what follows. It is the Grid. Experts have made some initial proof: the Internet connected computer hardware components; the World Wide Web connected web pages; and the Grid tries to connect all resources on the net, including computer resources, software resources, information resources, and knowledge resources. Experts have predicted about the next generation of the net—the net today was made by engineers, but it will grow out of itself in 2050.

### New Types of Computer

The development of CPU and LSI is approaching to the theoretical limit and people are searching for new methods to exceed the physical limits. The new types of computers may break the present computer architectures. Some of the new types of computers include the bio computer, in which the chips are made from protein molecules by bioengineering technologies; the photon computer, in which the photon is used as the information media and the process of information is implemented through the process of photons; and the quantum computer, in which the computer science is combined with the physical science to use a two-energy-level quantum system to express the two status, etc.

Now we are living in an era with academic computers, personal computers and net computers, and will soon enter an era in which widespread all-purpose computers function everywhere.

### New Words and Phrases

**academic** *a.* 学术的

**accordance** *n.* 一致; 和谐

**account** *n.* 计算; 账目

**accumulate** *v.* 积聚, 堆积

**achieve** *v.* 完成, 达到

**adjustment** *n.* 调整

**aid** *n. & v.* 帮助, 援助

**amount** *n.* 数量; 总计



- analysis** *n.* 分析  
**appear** *v.* 出现  
**applicability** *n.* 适用性  
**approach** *n.* 接近; 方法, 途径  
**approximately** *ad.* 近似地, 大约  
**architecture** *n.* 建筑, 建筑学; 体系结构  
**arithmetic** *n.* 算术, 算法  
**artificial** *a.* 人造的  
**aspect** *n.* 方面, 样子  
**assembly** *n.* 集合, 装配, 集会; 汇编  
**assistance** *n.* 协助  
**associate** *v.* 使联合  
**automatic** *a.* 自动的  
**automation** *n.* 自动, 自动化  
**become** *v.* 变成, 成为  
**beyond** *prep.* 超出  
**bioengineering** *n.* 生物工程学  
**brain** *n.* 脑, 头脑  
**branch** *n.* 分枝  
**calculation** *n.* 计算  
**capacity** *n.* 容量, 能力  
**category** *n.* 种类, 类别  
**chat** *v.* 聊天  
**chip** *n.* 筹码, 芯片  
**circuit** *n.* 电路  
**circuitry** *n.* 电路, 线路  
**classification** *n.* 分类  
**classify** *v.* 分类  
**combine** *v.* 联合, 结合  
**communication** *n.* 通信, 交通  
**competition** *n.* 竞争  
**compile** *v.* 编辑  
**complicated** *a.* 复杂的, 难解的  
**component** *n.* 成分, 组成部分, 元件, 组件, 部件; *a.* 组成的, 构成的  
**compose** *v.* 组成; 写作  
**comprehensive** *a.* 综合的  
**consequently** *ad.* 从而, 因此  
**consumption** *n.* 消费, 消耗  
**contain** *v.* 包含, 容纳  
**content** *n.* 内容, 目录  
**continually** *ad.* 不断地, 频繁地  
**core** *n.* 核, 核心  
**courseware** *n.* [计] 课件  
**crystallization** *n.* 结晶  
**device** *n.* 装置, 设备  
**disk** *n.* 磁盘, 碟片; 圆盘  
**distribute** *v.* 分发, 分配, 散布, 分布  
**divide** *v.* 分, 划分, 分开, 隔开  
**document** *n.* 文件  
**dot** *n.* 点  
**efficiency** *n.* 效率  
**efficiently** *ad.* 有效率地  
**effort** *n.* 努力  
**emerge** *v.* 显现, 浮现  
**emergence** *n.* 显现, 浮现  
**emotion** *n.* 情绪, 情感  
**endow** *v.* 赋予  
**ensure** *v.* 确保, 保证  
**entertainment** *n.* 娱乐  
**era** *n.* 时代  
**everywhere** *ad.* 到处, 各处  
**evolve** *v.* 进展, 进化  
**exceed** *v.* 超越, 胜过  
**exchange** *n. & v.* 交换, 交流  
**execute** *v.* 执行  
**expect** *v.* 期待, 预期  
**expectation** *n.* 期待, 预料  
**expensive** *a.* 昂贵的  
**expert** *n.* 专家  
**extensive** *a.* 广泛的, 广阔的  
**external** *a.* 外部的  
**extremely** *ad.* 极端地, 非常地  
**facilitate** *v.* 使容易, 使便利  
**feature** *n.* 特征, 特色 *v.* 反映……的特色  
**financial** *a.* 财政的  
**floppy** *a.* 松软的  
**form** *n.* 形式, 形状, 形态, 外形; 表格 *v.* 形成, 构成  
**format** *n.* 格式

- formation** *n.* 形成, 构成
- formula** *n.* 公式, 规则
- frontier** *n.* 前沿, 边疆
- function** *n.* 功能, 官能, 作用; [数] 函数
- fundamental** *a.* 基础的, 基本的
- further** *ad.* 更进一步地
- gain** *v.* 得到
- generation** *n.* 产生, 一代
- glossary** *n.* 术语表
- graphic** *a.* 图像, 图解的
- grid** *n.* 格子, 栅格
- growth** *n.* 生长, 增长
- handle** *v.* 触摸, 处理, 操作; 搬运
- hardware** *n.* 硬件
- huge** *a.* 巨大的, 极大的
- impact** *n. & v.* 碰撞, 冲击, 冲突, 影响, 效果
- implement** *v.* 执行, 实现
- improve** *v.* 改善, 改进
- incorporate** *v.* 合并, 使组成
- independently** *ad.* 独立地
- indicate** *v.* 指出, 显示, 象征, 说明
- inferior** *a.* 差的, 次的, 劣等的
- influence** *n. & v.* 影响, 感化; 影响力
- initial** *a.* 最初的, 初始的
- innovation** *n.* 改革, 创新
- inspire** *v.* 吸(气); 鼓舞, 激发, 启示, 使生灵感
- instruction** *n.* 指示, 指导, 指令, 用法说明(书)
- integrate** *v.* 整合, 集成
- integrator** *n.* 综合者
- intellectual** *a.* 智力的
- intelligence** *n.* 智力, 智能
- intelligent** *a.* 有才智的, [计] 智能的
- interim** *a.* 中间的 *n.* 中间时期
- inventer** *n.* 发明者
- invention** *n.* 发明, 创造
- issue** *n.* 问题
- limit** *n.* 界限, 限度, 极限
- logic** *n.* 逻辑
- logical** *a.* 合乎逻辑的
- magnetic** *a.* 磁的, 有磁性的
- major** *a.* 主要的, 主修的
- majority** *n.* 多数, 大半
- management** *n.* 管理
- manipulate** *v.* 操作, 操纵, 处理
- manipulation** *n.* 处理, 操作, 操纵
- manpower** *n.* 人力
- mature** *a.* 成熟的
- melt** *v.* 融化
- microcomputer** *n.* 微型机算计
- micromation** *n.* 微型化
- milestone** *n.* 里程碑
- missile** *n.* 导弹
- molecule** *n.* [化] 分子
- multiprocessor** *n.* [计] 多处理器
- numerical** *a.* 数字的, 用数字表示的
- numerous** *a.* 众多的, 无数的
- occasion** *n.* 场合, 时机
- occurrence** *n.* 发生, 出现, 发生的事情
- odd** *a.* 奇数的, 带零头的
- orbit** *n.* 轨道
- original** *a.* 最初的, 原始的
- outcome** *n.* 结果, 成果
- painstaking** *a.* 辛勤的, 艰苦的
- parameter** *n.* 参数
- perform** *v.* 履行
- performance** *n.* 履行, 性能
- persistent** *a.* 持久稳固的
- photon** *n.* 光子
- ponderous** *a.* 笨重的, 冗长的
- popular** *a.* 通俗的, 流行的, 受欢迎的
- practical** *a.* 实际的, 实用的
- prediction** *n.* 预言
- primitive** *a.* 原始的
- principle** *n.* 法则, 原理
- procedure** *n.* 程序, 手续
- productive** *a.* 生产性的, 生产的; 能产的, 多产的

- profound** *a.* 深刻的, 意义深远的, 渊博的
- promote** *v.* 促进, 提升
- prone** *v.* 倾向于
- proof** *n.* 证据, 论证
- protein** *n.* [生化] 蛋白质
- pursuit** *n.* 追求
- quake** *n.* 地震
- quantum** *n.* 量子
- raw** *a.* 生的, 未加工的
- reasoning** *n.* 推理
- reduce** *v.* 减少, 缩小
- regard** *n.* 关心, 注意, 尊重, 致意 *v.* 看待, 当作
- register** *v. & n.* 登记, 注册; 寄存器
- registration** *n.* 注册, 报到, 登记
- reliability** *n.* 可靠性
- reliable** *a.* 可靠的
- renovation** *n.* 革新
- represent** *v.* 表现, 描绘, 代表
- resistance** *n.* 抵抗, 抵抗力
- robot** *n.* 机器人
- robust** *a.* 强壮的, 粗壮的, 精力充沛的
- satellite** *n.* 卫星
- scale** *n.* 刻度, 衡量, 比例; 规模, 范围
- schedule** *n.* 时间表, 进度表 *v.* 确定时间
- semi-automation** *n.* 半自动化
- semiconductor** *n.* [物] 半导体
- shorten** *v.* 缩短
- signify** *v.* 意味着, 表示
- similarly** *ad.* 同样地, 类似于
- simulate** *v.* 模拟, 模仿
- sophisticated** *a.* 复杂的, 尖端的
- specific** *a.* 特定的, 明确的
- stage** *n.* 舞台, 活动场所; 发展的进程、阶段或时期
- statistics** *n.* 统计学, 统计
- storage** *n.* 存储, 贮藏(量)
- strength** *n.* 力, 力量, 强度
- strenuous** *a.* 艰辛的
- summarize** *v.* 概述, 总结
- summary** *n.* 摘要, 概要
- supercomputer** *n.* [计] 超型计算机
- symbolize** *v.* 象征
- tangible** *a.* 切实的
- technique** *n.* 技术, 技巧
- term** *n.* 学期, 期限, 术语
- theoretical** *a.* 理论的
- transistor** *n.* [电子] 晶体管
- tremendous** *a.* 极大的, 巨大的
- trend** *n.* 趋势
- tube** *n.* 管, 管子, 电子管, 显像管
- typeset** *n.* 排版
- unique** *a.* 唯一的, 独特的
- unprecedented** *a.* 空前的
- upgrade** *n. & v.* 提升
- utilize** *v.* 利用
- vacuum** *n.* 真空 *a.* 真空的
- vast** *a.* 巨大的, 辽阔的, 大量的, 巨额的
- widespread** *a.* 分布广泛的, 普遍的
- workshop** *n.* 车间, 工场
- bring about** 致使, 使发生
- vacuum tube** 真空管, 电子管
- major component** 主要元件, 主要部件
- in accordance with** 与……一致, 依照
- assembly language** 汇编语言
- magnetic core** [计] 磁芯
- main memory** 主存储器
- floppy disk** 软盘
- magnetic tape** 磁带
- storage media** 存储介质
- integrated circuit** 集成电路
- fundamental component** 基本元件, 基本部件
- semiconductor memory** 半导体存储器
- magnetic core memory** 磁芯存储器
- large-scale integration (LSI)** 大规模集成(电路)
- semiconductor chip** 半导体芯片
- million instructions per second (MIPS)** 每秒百万条指令

<b>system architecture</b> 系统结构	<b>artificial intelligence</b> 人工智能
<b>multiprocessor system</b> [计]多处理器系统	<b>to a certain extent</b> 到一定程度
<b>distributed system</b> [计]分布式系统	<b>high-level</b> 高级的
<b>LSI-based microcomputer</b> 基于大规模集成电路的微型计算机	<b>machine translation</b> [计]计算机翻译
<b>widespread application</b> 广泛应用	<b>built-in</b> 内置的
<b>stored-program principle</b> 存储程序原理	<b>all-purpose</b> 通用的
<b>set forth</b> 提出	<b>all the nooks and crannies</b> 每个角落
<b>arithmetic/logic unit (ALU)</b> 算术逻辑部件	<b>throw into the shade</b> 使逊色, 使相形见绌
<b>control unit</b> 控制器	<b>look like</b> 像……, 似……,
<b>solid line</b> 实线	<b>to the satisfaction of</b> 使……满意地
<b>data flow</b> 数据流	<b>space engineering</b> 航天工程
<b>dotted line</b> 虚线	<b>petroleum prospecting</b> 石油勘探
<b>control flow</b> 控制流	<b>human genome project</b> 人类基因组工程
<b>man-made</b> 人造的	<b>national defense</b> 国防
<b>quake-resistance</b> 抗震的	<b>data processing</b> [计]数据处理
<b>deal with</b> 处理, 对待	<b>inferior to</b> 次于, 劣于
<b>no longer</b> 不再	<b>out of</b> 出自
<b>automatic control</b> 自动控制	<b>theoretical limit</b> 理论极限
<b>raw material</b> 原材料	<b>bio computer</b> 生物计算机
<b>computer aided design (CAD)</b> 计算机辅助设计	<b>bioengineering technology</b> 生物工程技术
<b>with the help of</b> 在……的帮助下	<b>photo computer</b> 光计算机
<b>computer aided instruction (CAI)</b> 计算机辅助教学	<b>information media</b> 信息载体
	<b>quantum computer</b> 量子计算机
	<b>two-energy-level quantum system</b> 二能级量子系统

### Exercises

#### 1. Answer the following questions according to the text.

- 1) Which stages of development has the computer undergone?
- 2) Which five components was the hardware system of a von Neumann architecture computer composed of?
- 3) Which are the main applications of the computers?
- 4) What do you think about the trend of the computer development?

#### 2. Write out the corresponding English words or phrases of the following explanation.

English Explanation	Words (Phrases)
The computer that used the semiconductor memory to replace the magnetic core memory	
The core components of the computer	
The fundamental work of a computer	

(续)

English explanation	Words( phrases)
The computer that has the ability to memorize things, to do logical reasoning and operations, to model human thinking, and to learn and deduce to a certain extent	
The most important development trend of the computer	

### 3. Translate following sentences into Chinese.

- 1) The emergence of the computer has changed our social life and enhanced our communication with the outside world.
- 2) Generally speaking, the faster the processor's speed, the faster the computer executes the instructions and processes the graphics.
- 3) A video card has its own memory which is specially for the storage of graphics and icons.
- 4) The arithmetic/logic unit (ALU) is the functional unit that provides the computer with logical and computational capabilities.

## Reading Material

### Introduction of Scanners

As an input device of the computer, Scanners have been widely used in many occasions like desk publishing, advertising, office automation, multimedia design and daily life. There are different types of scanners, the drum scanners, film scanners, rotary scanners, hand-held scanners, and the most commonly used—flatbed scanners (Figure 1-2).

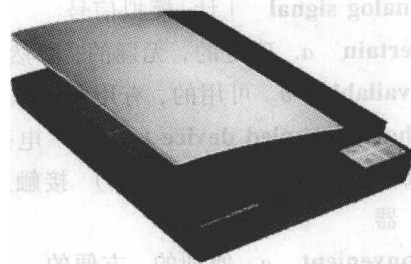


Figure 1-2

In computing, a scanner is a device that optically scans images, printed text, handwriting, or an object, and converts it to a digital image. Common examples can be easily found in offices where a desktop (or flatbed) scanner is scanning the document on a glass window. Hand-held scanners are devices moved by hand. They have evolved into the 3D scanners used for industrial design, test, measurement, gaming and other applications. Mechanically driven scanners are used for large-format documents, where a flatbed design would be impractical.

Modern scanners typically use a charge-coupled device (CCD) or a contact image sensor (CIS) as the image sensor. Another category of scanner is digital camera scanners. New scanning technologies are combining 3D scanners with digital cameras to create full-color, photo-realistic 3D models of objects.

### Flatbed Scanner

A flatbed scanner can be either a cheap monochrome one or a professional color one. Flatbed