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机械工业出版社

重点大学  
计算机教材

# 计算机英语

## Computer English

刘 艺 王春生 主编



机械工业出版社  
China Machine Press

重点大学计算机教材

# 计算机英语

COMPUTER ENGLISH

刘 艺 王春生 主编

谈 亮 刘春花 等参编

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机械工业出版社  
China Machine Press

本书是一本面向21世纪的计算机专业英语教材, 涉及了计算机基础知识、系统结构、软件工程、应用开发、网络通信、电子商务以及其他深刻影响着我们生活的信息技术。全书以计算机和IT领域的最新英语时文和经典原版教材为基础, 配以相应的注释和练习, 使读者能够快速掌握计算机英语的一般特点和大量专业词汇, 并提高阅读和检索计算机原版文献资料的能力。

本书可供大专院校计算机及IT相关专业的学生使用, 也可供参加各类计算机考试的考生、IT行业的技术人员以及谋求出国发展的计算机人才学习参考。

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## 序

汉语中有一句成语，“如虎添翼”，意思是说一个能干的人，如果有了好的助手或工具，他的威力、能力就会倍增。我们的时代是知识经济的时代，是经济向全球化发展的时代。一个人，尤其青年人要有所作为，在从事的工作上有所成就，赶上时代的潮流，有两种知识和技能是非常重要的，一是英语，二是计算机。一个人掌握好这两种知识和技能就等于平添了两个好助手，真可谓插上翅膀，任凭他展翅飞翔。本书就是集双翼于一体的好书、一本好教材。

本书有以下几个特点：

第一，它将英语和计算机两种知识融为一体。英语已经成为一种国际性的语言，这是一个不用争辩的事实。英语在国际上作为通用的计算机及IT的行业性用语，有着其它语言所不能替代的地位。无论是学习最新的计算机技术，还是使用最新的计算机软硬件产品，都离不开对计算机英语的熟练掌握。据我了解，现在国内外许多院校，为了适应这种需求，已经或正在积极准备开设计算机英语课，不仅把它作为计算机专业的必修课，还将其作为一门实用的选修课推广到其它专业。本书从内容到编排都非常适合作为这样一门课程的教材，使读者不仅可以学到计算机的基础知识，还可学到与计算机相关的英语，毕其功于一役。

第二，选材精当，“新”字当头。本书的选材十分广泛丰富，既有计算机基础知识、软硬件结构体系、软件工程和网络通信等方面的专业文章，又精心挑选了电子商务、因特网、计算机安全、IT业精英论点等方面的文献资料。

第三，版式新颖，处处方便读者。学习计算机英语必然会遇到英语和计算机知识方面许多新的词汇和其它阅读上的难点。本书采用了旁注生词，脚注难点的同步对照注释方法，大大方便了读者，读者可以在当前页上获得学习指导，释义解惑。

本书的两位主编都是年轻人，但是在编写计算机和英语教材与工具书方面都已经积累了丰富的经验，成绩斐然。本书的主编之一刘艺是一位青年计算机专家，曾荣获全军软件比赛一等奖和三等奖各一项，先后编著与翻译出版计算机方面的著作6部。本书的另一位主编王春生副教授长期从事英语教学和英汉翻译的研究与实践工作，已独立或与他人合作出版英语教材、教学用书以及译作共7部，并参加过英汉辞书的编纂与研究工作。

两位主编要求我为本书写一个序，虽然我对计算机英语知之甚少，但是为写序，浏览全书，得益不浅，欣然命笔，是为序。

全国高校外语教学指导委员会委员  
博士生导师

姚乃强 教授

2001年5月

## 前 言

英语作为计算机及IT业的行业性语言，有着其他语言所不能替代的功能。无论是学习最新的计算机技术，还是使用最新的计算机软硬件产品，都离不开对计算机英语的熟练掌握。正是为了适应这种要求，不少有实力、有远见的院校纷纷开设了计算机英语课。有些院校甚至不仅把它作为计算机专业的必修课，还将其作为一门实用的选修课推广到其他专业。

本书是按照最新《大学英语教学大纲》对专业英语的要求，为开设计算机英语课程而编写的面向21世纪的教材。在满足计算机专业英语教学的同时，我们并没有过分沉溺于晦涩抽象的理论和专业术语之中，而是更多地关注计算机素养、计算机应用以及IT对社会和生活的深刻影响。所以，在选材的过程中，除了计算机基础知识、软硬件结构体系、软件工程和网络通信等专业文章外，还精心挑选了电子商务、因特网、计算机安全、IT业精英论点等方面的精彩内容。同时，在所有选材上着重体现一个“新”字，例如：Linux、Java、Web编程、ATM、黑客防范等。

在版式上，我们采用了旁注生词、脚注难点的同步对照注释方法，使读者不必前后查找就可以在当前页获得学习指导，解决阅读困难。另外，书后还附有生词表和缩略语表，而且所有生词与缩略语均注明在书中首次出现的课次与具体文章。它们既可作为全书的索引，方便读者进行相关内容的查阅复习，也可作为一本实用的英汉计算机小词典，在日常学习和生活中备用。同时，我们还为大部分文章精心选配了插图和示意图，以增加文章内容的直观性与趣味性，使读者能更好地理解原文和提高学习兴趣。

本书在出版过程中得到机械工业出版社华章公司的鼎力支持，同时洪蕾、王珊珊、蒋丹丹等也为本书的编撰和顺利出版付出了心血，在此一并表示感谢！

经过近两年的日夜奋战，本书就要跟读者见面了，我们的心情既兴奋又惴惴不安。尽管本书在编写过程中，在资料的查核、术语的汉译以及文字的规范等方面都做了大量工作，但由于计算机领域的发展日新月异，许多新术语尚无确定的规范译法，加上编者水平有限，书中难免有不尽人意之处，还恳请广大读者不吝赐教。

编 者

2001年5月于南京

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## 使用说明

1. 本教材根据内容分为四大部分,共15课。每一课包括三篇文章。课文A为精读材料,课文B和课文C为泛读材料。三篇课文均围绕同一主题。课文A一般为该主题的概述,课文B和课文C就该主题的某一具体方面或具体例子展开讨论。

2. 课文A长度一般为1400~1800词,要求能正确理解和熟练掌握其内容。课文B和课文C长度一般为1200~1600词,要求能掌握中心大意,抓住主要事实。

3. 课文A配有四项练习,即“课文理解填空”、“词组中英文互译”、“完形填空”和“段落翻译”;课文B和课文C配有两项练习,即“课文理解填空”和“词组中英文互译”。各项练习均与课文内容和计算机专业紧密结合,旨在巩固和拓展学生所学内容。

4. 国家教育部于1999年新颁布的《大学英语教学大纲》(修订本)规定:“学生在完成基础阶段的学习任务,达到四级或六级后,都必须修读专业英语。”这就意味着学生在学习专业英语之前必须达到大学英语四级水平,但不一定达到六级。因此,本教材的生词选注以四级为起点,参照标准为2000年7月出版的《大学英语教学大纲》(修订本)配套词汇表。所注生词计有两类:一类是通用词,即大纲词汇表未列入1~4级的词汇;另一类为计算机及相关专业词汇,是大纲词汇表未列入1~4级,或未注明有关词义的词汇。生词均用黑体在课文中标出,并在课文对应段落旁边进行注释,以便于阅读和记忆。相同生词原则上只在首次出现之处进行注释,但书后附有生词表以备查阅。

5. 计算机英语的特点之一是大量缩略语的使用。本教材对其采取两种处理方式:一是在首次出现处进行脚注;二是对大家十分熟知或其意思在文中不言自明的缩略语未加脚注。但是,无论哪种情况,所有缩略语均收入书后的缩略语表,以备查阅和方便记忆。另外,在计算机英语中,缩略语所代表的词组或术语在大小写上有比较随意和不一致的现象。本教材原则上尊重原文所采用的形式。

6. 完成本教材的学习后应达到的要求,可参照《大学英语教学大纲》(修订本)有关专业英语的规定。

7. 计算机专业英语课及本教材的使用,本科生可安排在第五至第七学期,研究生可安排在第一学年。对于教学时数比较充裕的院校,可全书使用;对教学时数比较少的院校,重点可放在前三部分,而将第四部分作为课外阅读。也可按照自身的需求进行取舍。

编者

2001年5月

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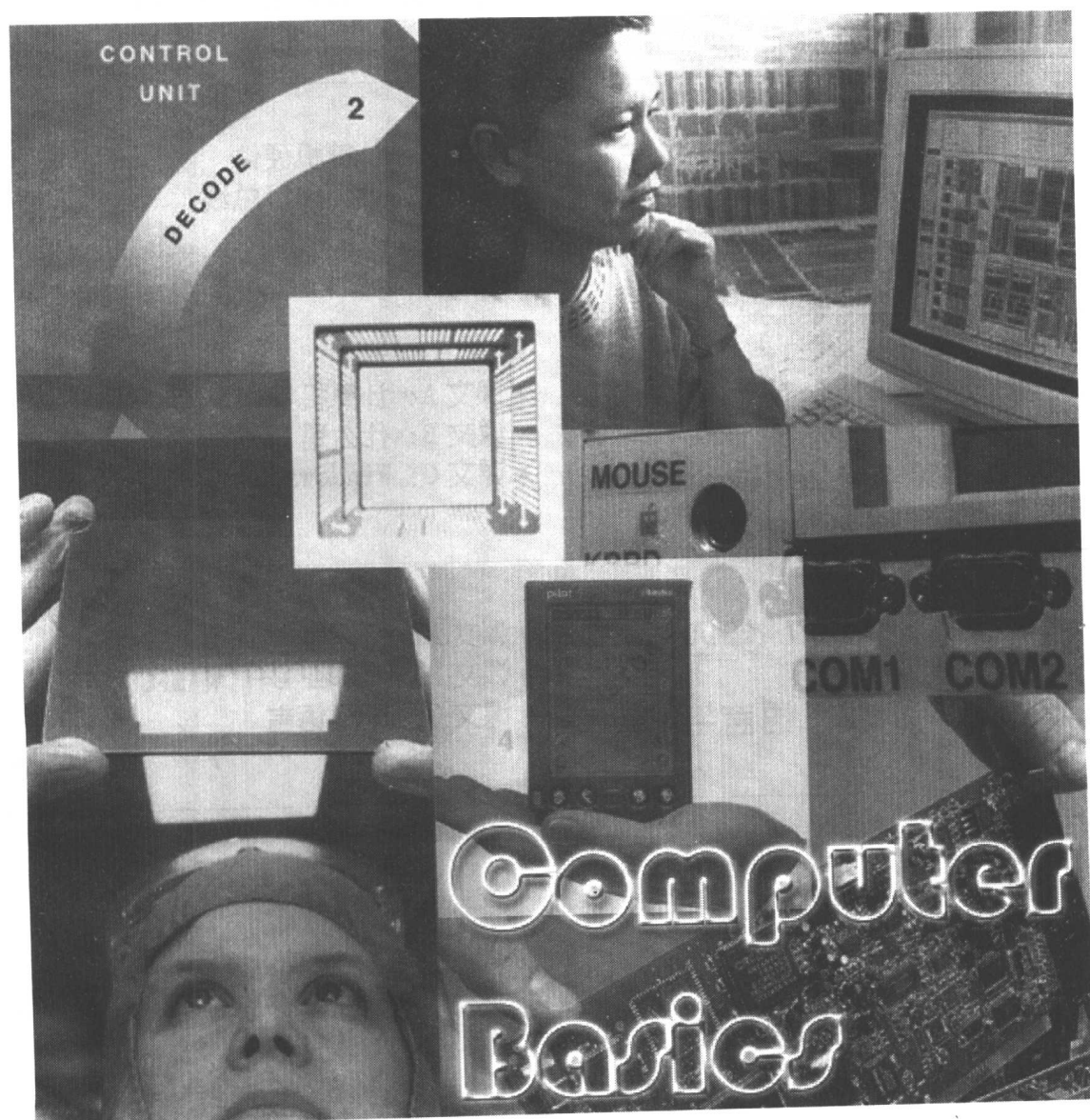


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# Part One

## Computer Basics



# 第一部分

## 计算机基础

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### 第一单元

#### 我的电脑

- 课文 A: 计算机概览
  - 课文 B: 可穿戴的计算机
  - 课文 C: 计算机初学者技巧
- 

### 第二单元

#### 计算机硬件结构

- 课文 A: 计算机硬件
  - 课文 B: 通用串行总线
  - 课文 C: DVD
- 

### 第三单元

#### 操作系统

- 课文 A: 计算机操作系统
  - 课文 B: 什么是 Linux?
  - 课文 C: Windows 2000 的性能
- 

### 第四单元

#### 计算机语言与编程

- 课文 A: 编程语言
  - 课文 B: Visual C++ 和 MFC 基础
  - 课文 C: Java 语言
-

# Unit 1 My Computer

## Section A

### Computer Overview



#### I. Introduction

##### **numerical**

/nju:'merikəl/

a. 数字的; 数值的

##### **manipulate**

/mə'nɪpjuleɪt/

v. 操作; 处理

##### **transaction**

/træn'zækʃən/

n. 交易; 业务

A computer is an electronic device that can receive a set of instructions, or program, and then carry out this program by performing calculations on **numerical** data or by **manipulating** other forms of information.

The modern world of high technology could not have come about<sup>1</sup> except for the development of the computer. Different types and sizes of computers find uses throughout society in the storage and handling of data, from secret governmental files to banking **transactions** to private household accounts. Computers have opened up a new era in

---

<sup>1</sup> come about: 发生, 产生。

**automation**

/ˌɔ:tə'meɪʃən/

n. 自动化

**enhance** /in'hɑ:ns/

v. 增强

**conjecture**

/kən'dʒektʃə/

n. 推测, 猜想

**database**

/'deɪtəbeɪs/

n. 数据库

**privacy** /'praɪvəsi/

n. 隐私; 秘密

**precursor**

/ˌpri:'kɜ:sə/

n. 先驱

**digit** /'dɪdʒɪt/

n. 数字

**loom** /lu:m/

n. 织机

**perforated**

/'pɜ:fəreɪtɪd/

a. 穿孔的

**conceive** /kən'si:v/

v. (构) 想出

**punched card**

穿孔卡片

**electrical contact**

电触点

**compile** /kəm'paɪl/

v. 汇编; 编译

**census** /'senses/

n. 人口普查

**analytical**

/ˌæne'lɪtɪkəl/

a. 分析的

**Analytical Engine**

分析机, 解析机

manufacturing through the techniques of **automation**, and they have **enhanced** modern communication systems. They are essential tools in almost every field of research and applied technology, from constructing models of the universe to producing tomorrow's weather reports, and their use has in itself opened up new areas of **conjecture**. **Database** services and computer networks make available a great variety of information sources.<sup>1</sup> The same advanced techniques also make possible invasions of personal and business **privacy**. Computer crime has become one of the many risks that are part of the price of modern technology.

## II. History

The first adding machine, a **precursor** of the digital computer, was devised in 1642 by the French scientist, mathematician, and philosopher Blaise Pascal<sup>2</sup>. This device employed a series of ten-toothed wheels, each tooth representing a **digit** from 0 to 9. The wheels were connected so that numbers could be added to each other by advancing the wheels by a correct number of teeth. In the 1670s the German philosopher and mathematician Gottfried Wilhelm Leibniz<sup>3</sup> improved on this machine by devising one that could also multiply.

The French inventor Joseph-Marie Jacquard<sup>4</sup>, in designing an automatic **loom**, used thin, **perforated** wooden boards to control the weaving of complicated designs. During the 1880s the American statistician Herman Hollerith<sup>5</sup> **conceived** the idea of using perforated cards, similar to Jacquard's boards, for processing data. Employing a system that passed **punched cards** over **electrical contacts**, he was able to **compile** statistical information for the 1890 United States **census**.

### 1. The Analytical Engine

Also in the 19th century, the British mathematician and inventor Charles Babbage<sup>6</sup> worked out the principles of the modern digital computer.

<sup>1</sup> *Database services and computer networks make available a great variety of information sources.*: 数据库服务和计算机网络使各种各样的信息源可供使用。这句话由于宾语 (a great variety of information sources) 较长, 而将宾语的补语 (available) 放到了宾语的前面。文中下一句话也属同样情况。

<sup>2</sup> *Blaise Pascal*: 布莱斯·帕斯卡 (1623~1662), 法国数学家、物理学家、哲学家, 概率论创立者之一。

<sup>3</sup> *Gottfried Wilhelm Leibniz*: 戈特弗里德·威廉·莱布尼兹 (1646~1716), 德国自然科学家、哲学家, 微积分、数理逻辑的先驱, 提出了二进制。

<sup>4</sup> *Joseph-Marie Jacquard*: 约瑟夫-玛丽·雅卡尔 (1752~1834), 法国著名的织机工匠, 纹板提花机的主要改革家。

<sup>5</sup> *Herman Hollerith*: 赫尔曼·何勒里斯 (1860~1929), 美国发明家和统计学家。

<sup>6</sup> *Charles Babbage*: 查尔斯·巴比奇 (1792~1871), 英国数学家和发明家。

**Difference Engine**  
差分机

**input stream**  
输入(信息)流

**analog(ue)**

/ˈænələg/

a. 模拟的

**shaft** /ʃɑ:ft/

n. 轴

**approximation**

/əˌprɒksiˈmeɪʃən/

n. 近似(值)

**computing**

/kəmˈpju:tɪŋ/

n. 计算(技术)

**torpedo** /tɔ:ˈpi:deu/

n. 鱼雷

**submarine**

/ˌsʌbməˈri:n/

n. 潜艇

**bombsight**

/ˈbɒmsaɪt/

n. 轰炸瞄准器

**incorporate**

/ɪnˈkɔ:pəreɪt/

v. 包含

**vacuum tube**

真空管

**crack** /kræk/

v. 破译

**encipher** /ɪnˈsaɪfə/

v. 把...译成密码

**prototype**

/ˈprəʊtətaɪp/

n. 原型; 样品

He conceived a number of machines, such as the **Difference Engine**, that were designed to handle complicated mathematical problems. Many historians consider Babbage and his associate, the mathematician Augusta Ada Byron<sup>1</sup>, the true pioneers of the modern digital computer. One of Babbage's designs, the Analytical Engine, had many features of a modern computer. It had an **input stream** in the form of a deck of punched cards, a "store" for saving data, a "mill" for arithmetic operations, and a printer that made a permanent record.<sup>2</sup> Babbage failed to put this idea into practice, though it may well have been technically possible at that date.

## 2. Early Computers

**Analogue** computers began to be built in the late 19th century. Early models calculated by means of rotating **shafts** and gears. Numerical **approximations** of equations too difficult to solve in any other way were evaluated with such machines. Lord Kelvin<sup>3</sup> built a mechanical tide predictor that was a specialized analogue computer. During World Wars I and II, mechanical and, later, electrical analogue **computing** systems were used as **torpedo** course predictors in **submarines** and as **bombsight** controllers in aircraft. Another system was designed to predict spring floods in the Mississippi River<sup>4</sup> basin.

## 3. Electronic Computers

During World War II, a team of scientists and mathematicians, working at Bletchley Park, north of London, created one of the first all-electronic digital computers: Colossus<sup>5</sup>. By December 1943, Colossus, which **incorporated** 1,500 **vacuum tubes**, was operational. It was used by the team headed by Alan Turing<sup>6</sup>, in the largely successful attempt to **crack** German radio messages **enciphered** in the Enigma code<sup>7</sup>.

Independently of this, in the United States, a **prototype** electronic

<sup>1</sup> **Augusta Ada Byron**: 奥古斯塔·埃达·拜伦(1815~1852), 英国数学家, 诗人拜伦之女。

<sup>2</sup> *It had an input stream in the form of a deck of punched cards, a "store" for saving data, a "mill" for arithmetic operations, and a printer that made a permanent record.*: 其输入流形式为一叠穿孔卡片、一个储存数据的“仓库”、一个进行算术运算的“工厂”, 以及产生永久记录的打印机。

<sup>3</sup> **Lord Kelvin**: 开尔文勋爵(1824~1907), 全名威廉·汤姆森·开尔文(William Thomson Kelvin)英国物理学家, 发展了热力学理论, 创立了热力学绝对温标(即开尔文温标)。

<sup>4</sup> **Mississippi River**: 密西西比河, 发源于美国中北部的湖沼区, 南注墨西哥湾, 系美国主要河流。

<sup>5</sup> **Colossus**: 该词读作 /kəˈlɒsəs/, 有“巨像”、“巨人”、“巨物”等意。

<sup>6</sup> **Alan Turing**: 艾伦·图灵(1912~1954), 英国数学家和逻辑学家。

<sup>7</sup> **Enigma code**: 恩尼格码, 德军在第二次世界大战期间采用的一种密码。

**overshadow**

/ˌəʊvəʃædəʊ/

v. 使相形见绌

**integrator**

/ˈɪntɪɡreɪtə/

n. 积分器

**patent** /ˈpeɪtənt/

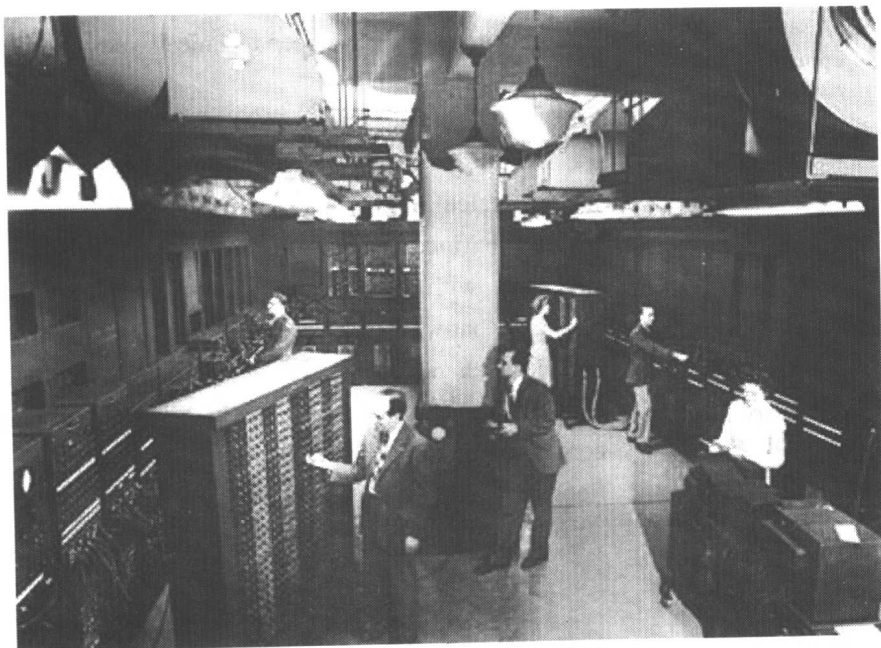
n. 专利(权)

**overturn**

/ˌəʊvə'tɜ:n/

v. 推翻; 废除

machine had been built as early as 1939, by John Atanasoff<sup>1</sup> and Clifford Berry<sup>2</sup> at Iowa State College<sup>3</sup>. This prototype and later research were completed quietly and later **overshadowed** by the development of the Electronic Numerical **Integrator** And Computer (ENIAC<sup>4</sup>) in 1945. ENIAC was granted a **patent**, which was **overturned** decades later, in 1973, when the machine was revealed to have incorporated principles first used in the Atanasoff-Berry Computer.



**Figure 1A-1: ENIAC was one of the first fully electronic digital computers.**

**Hungarian**

/hʌŋ'ɡeəriən/

a. 匈牙利的

**memory** /ˈmeməri/

n. 存储器, 内存

**paper-tape reader**

纸带阅读器

**execution**

/ˌɛkʃi'kjuʃən/

n. 执行, 运行

ENIAC (See Figure 1A-1) contained 18,000 vacuum tubes and had a speed of several hundred multiplications per minute, but originally its program was wired into the processor<sup>5</sup> and had to be manually altered. Later machines were built with program storage, based on the ideas of the **Hungarian-American** mathematician John von Neumann<sup>6</sup>. The instructions, like the data, were stored within a “**memory**”, freeing the computer from the speed limitations of the **paper-tape reader** during **execution** and

<sup>1</sup> John Atanasoff: 约翰·阿塔纳索夫(1903~1995), 美国物理学家。

<sup>2</sup> Clifford Berry: 克利福德·贝里(1918~1963), 美国物理学家。

<sup>3</sup> Iowa State College: (美国)艾奥瓦州立学院。

<sup>4</sup> ENIAC: 电子数字积分计算机, ENIAC 计算机(Electronic Numerical Integrator And Computer 的首字母缩略)。

<sup>5</sup> its program was wired into the processor: 程序通过导线传送到处理器内。

<sup>6</sup> John von Neumann: 约翰·冯·诺伊曼(1903~1957), 美籍匈牙利数学家, 对量子物理、数学逻辑和高速计算机的发展均有贡献。



**transistor**

/træn'sistə/

n. 晶体管

**advent** /'ædvent/

n. 出现, 到来

**versatile** /'və:sətail/a. 多用途的,  
通用的**logical element**

逻辑元件

**fabricate**

/'fæbrikeit/

v. 制作

**silicon** /'silikən/

n. 硅

**substrate**

/'sʌbstreit/

n. 衬底, 基底

**microprocessor**

/ˌmaɪkrəʊ'prəʊsesə/

n. 微处理器

**microchip**

/ˌmaɪkrəʊtʃɪp/

n. 微芯片

**etch** /etʃ/

v. 蚀刻

permitting problems to be solved without rewiring the computer.

The use of the **transistor** in computers in the late 1950s marked the **advent** of smaller, faster, and more **versatile logical elements** than were possible with vacuum-tube machines. Because transistors use much less power and have a much longer life, this development alone was responsible for the improved machines called second-generation computers. Components became smaller, as did inter-component spacings, and the system became much less expensive to build.

#### 4. Integrated Circuits

Late in the 1960s the integrated circuit, or IC, was introduced, making it possible for many transistors to be **fabricated** on one **silicon substrate**, with interconnecting wires plated in place<sup>1</sup>. The IC resulted in a further reduction in price, size, and failure rate. The **microprocessor** became a reality in the mid-1970s with the introduction of the large-scale integrated (LSI) circuit and, later, the very large-scale integrated (VLSI) circuit (**microchip**), with many thousands of interconnected transistors **etched** into a single silicon substrate.

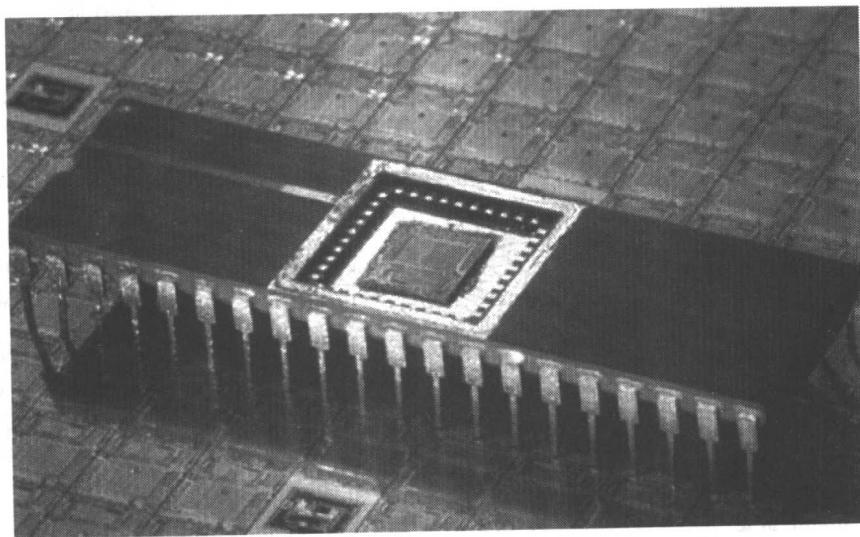


Figure 1A-2: An integrated circuit

To return, then, to the switching capabilities of a modern computer: computers in the 1970s were generally able to handle eight switches at a

<sup>1</sup> making it possible for many transistors to be fabricated on one silicon substrate, with interconnecting wires plated in place: 从而有可能将许多晶体管制作在一块硅衬底上, 晶体管之间以覆镀固定的导线相连接。

**binary** /'bainəri/  
a. 二进制的  
**bit** /bit/  
n. 位, 比特  
**byte** /bait/  
n. 字节  
**datum** /'deɪtəm/  
([复]data)  
n. 数据  
**graphics** /'græfiks/  
n. 图形, 图形显示  
**decimal** /'desɪməl/  
a. 十进制的  
**switch** /'swɪtʃ/  
n. 交换 (设备)  
**instruction set**  
指令集  
**ongoing** /'ɒn.gəʊɪŋ/  
a. 正在进行的  
**conceptually**  
/kən'septʃuəli/  
ad. 概念上  
**microcomputer**  
/'maɪkrəʊkəm'pjʊ:tə/  
n. 微型计算机  
**desktop** /'deskɒp/  
a. 桌面的; 台式的  
**laptop** /'læptɒp/  
n. 膝上型计算机,  
便携式计算机  
**briefcase** /'bri:fkeɪs/  
n. 公文包  
**palmtop** /'pɔ:mtɒp/  
n. 掌上型计算机  
**workstation**  
/'wɜ:k.steɪʃən/  
n. 工作站  
**minicomputer**  
/'mɪnɪkəm'pjʊ:tə/  
n. 小型计算机  
**mainframe**  
/'meɪnfreɪm/  
n. 主机, 大型机  
**supercomputer**  
/'sʊ:pəkəm'pjʊ:tə/  
n. 超级计算机, 巨型计算机  
**bus** /bʌs/  
n. 总线

time. That is, they could deal with eight **binary** digits, or **bits**, of data, at every cycle. A group of eight bits is called a byte, each **byte** containing 256 possible patterns of ONs and OFFs (or 1s and 0s). Each pattern is the equivalent of an instruction, a part of an instruction, or a particular type of **datum**, such as a number or a character or a **graphics** symbol. The pattern 11010010, for example, might be binary data—in this case, the **decimal** number 210—or it might be an instruction telling the computer to compare data stored in its **switches** to data stored in a certain memory-chip location.

The development of processors that can handle 16, 32, and 64 bits of data at a time has increased the speed of computers. The complete collection of recognizable patterns—the total list of operations—of which a computer is capable is called its **instruction set**. Both factors—the number of bits that can be handled at one time, and the size of instruction sets—continue to increase with the **ongoing** development of modern digital computers.

### III. Hardware

Modern digital computers are all **conceptually** similar, regardless of size. Nevertheless, they can be divided into several categories on the basis of cost and performance: the personal computer or **microcomputer**, a relatively low-cost machine, usually of **desktop** size (though “**laptops**” are small enough to fit in a **briefcase**, and “**palmtops**” can fit into a pocket); the **workstation**, a microcomputer with enhanced graphics and communications capabilities that make it especially useful for office work; the **minicomputer**, generally too expensive for personal use, with capabilities suited to a business, school, or laboratory; and the **mainframe** computer, a large, expensive machine with the capability of serving the needs of major business enterprises, government departments, scientific research establishments, or the like (the largest and fastest of these are called **supercomputers**).

A digital computer is not a single machine: rather, it is a system composed of five distinct elements: (1) a central processing unit; (2) input devices; (3) memory storage devices; (4) output devices; and (5) a communications network, called a **bus**, which links all the elements of the system and connects the system to the external world.

### IV. Programming

A program is a sequence of instructions that tells the hardware of a