**chapter 1：**

**vacuum tubes 真空管**

**take delivery of 正式接过…**

**multiprogramming n. 多道程序设计**

**time-share n. 分时，时间共享**

**compatibility n. 兼容性**

**compatible a. 兼容的；**

**virtual memory 虚拟内存**

**bandwidth n. 带宽**

**factor n. 因子，因数**

**order n. 阶,次**

**associative 结合律**

**commutative 交换律**

**glean 获得**

**These characteristics are that the machine is electronic, that it has a stored program, and that it is general purpose.**

**这些特性是：机器是电子的，具有储存的程序, 而且是通用的。**

**把程序本身当作数据来对待，程序和该程序处理的数据用同样的方式储存。 数字计算机的数制采用二进制；计算机应该按照程序顺序执行。**

**ENIAC：世界的第一台电子储存程序、通用型计算机**

**UNIVAC I：是世界上第一部商业化计算机。**

**Grace Hopper：开发了第一种编程语言翻译器**

**FORTRAN：第一种广泛使用的高级语言**

**Altair：第一部专为个人使用设计的微型计算机是**

**EDVAC,是第一部包括了计算机所有特征的机器 冯·诺依曼**

**IBM 650:最流行的第一代计算机**

**第三代计算机特点：**

**multiprogramming, virtual memory and time-sharing**

**多道程序设计、虚拟存储和分时技术**

**第三代：小型计算机普及**

**第四代：小型计算机和超级计算机突起，微型计算机增长**

**First generation: Vacuum Tubes**

**Second generation: Transistors**

**Third generation: Integrated Circuits(ICs)**

**Four generation: Large Scale Integration (LSI), Very Large Scale Integration (VLSI)**

Packaged software is **a collection of programs that perform similar functions or have similar features.**

**chapter 2：**

**synchronize vt. 使...同步**

**hierarchy n. 层次，层级**

**embedded 嵌入式的**

**latch v. 闭锁,锁存**

**operand n. 操作数**

**tri-state 三态**

**tri-stated 高阻态**

**interleaving n. 交叉,交错**

**configuration n. 构造, 结构, 配置**

**homogeneous adj. 同类的, 均一的**

**active high 高电平有效**

**instruction pipeline 指令流水线**

**is proportional to 成正比**

**three main components: the CPU, the memory subsystem, and the I/O subsystem.**

**不管前面数量多少，复合词中的名词依然使用单数形式。**

**The 500-metre race**

**A 400-word letter**

**A processor may use either memory mapped I/O or isolated I/O**

**the CPU has three sections. ：register sections,**

**CPU consists of：ALU，Registers，Control Unit**

**Three types of system buses：1、Address bus、2、Data bus、3、Control bus**

**chapter 3:**

**radix n. 根, 基数**

**whole number n. 整数**

**significant figure n. 有效数字**

**quotient n. 商**

**remainder n. 余数**

**fractional adj. 分数的, 小数的**

**positional notation 位计数法**

**exponential value 指数值**

**numerator  被除数，分子**

**denominator  除数，分母**

**radix complement 补码**

**radix-1 complement 反码**

**decimal equivalent 等效十进制值**

**The most common numbering systems used with computers are decimal, binary, and hexadecimal (base 16).**

**A Boolean algebra is a finite or infinite set of elements together with three operations—negation, addition, and multiplication.**

**subtracting each digit from a fifteen.**

**any number raised to its zero power is always 1, or the units position.**

**1 ten plus 1 unit**

**weights or values of each position of the number**

**sum the weights to form the decimal equivalent**

**The main problem with the radix-1 complement is that a negative or a positive zero exists; in the radix complement system, only a positive zero can exist.**

**add a one to the result**

**A base x number：x进制数**

**A base 2 number A binary number 0-1**

**A base 8 number An octal number 0-7**

**A base 10 number A decimal number 0-9**

**A base 16 number A hexadecimal number 0-F**

**Units position 个位**

**Tens position 十位**

**Hundreds position 百位**

**Thousands position 千位**

**Radix point 基数小数点**

**Binary point 二进制小数点**

**Decimal point 十进制小数点**

**Hexadecimal point 十六进制小数点**

**xn x to the nth power/ x to the power n**

**x-n  x to the (power) minus n**

**1. Divide the decimal number by the radix (number base).**

**2. Save the remainder (first remainder is the least significant digit),**

**3. Repeat steps 1 and 2 until the quotient is zero.**

**1. Multiply the decimal fraction by the radix (number base).**

**2. Save the whole number portion of the result (even if zero) as**

**a digit. Note that the first result is written immediately to the**

**right of the radix point.**

**3. Repeat steps 1 and 2, using the fractional part of step 2 until**

**the fractional part of step 2 is zero.**

**SET**

**Subset set 子集**

**Empty set 空集**

**Universal set 全集**

**Complement of S S的补集**

**Union of S and T S和T的并集**

**Intersection of S and T S和T的交集**

**PPT最后**

**chapter 4:**

**harsh table 杂凑(哈希)表**

**priority queues 优先队列**

**reusability n. 复用性**

**binary tree 二叉树**

**traversing 遍历，走过**

**context-free 与上下文无关**

**pseudocode n. [计]伪代码**

**allot vt. 分配,充当,依靠**

**predecessor n. 前辈, 前任**

**pertinent adj. 有关的, 相干的, 中肯的**

**entail vt. 使承担， 带来**

**extract vt. 取，引**

**vacancy n. 空, 空白, 空缺**

**head pointer 头指针**

**tail pointer 尾针**

**side effect 副作用**

**Three reasons for using data structures are efficiency, abstraction, and reusability.**

**a complete stack system would probably contain procedures for pushing entries, popping entries, testing for an empty stack, and testing for a full stack.**

**In computing, some of the most common organizations are *linked lists*, *stacks*, *queues*, *sets*, *hash tables*, *trees*, *heaps*, *priority queues*, and *graphs*.**

**Types of linked list: Singly linked list (单向链表)，Doubly linked list (双向链表)，Multiply linked list（多重链表），Circularly linked list（循环链表）**

**Binary search trees （二叉查找树）：fast lookup, addition and removal of items**

**What is a linked list?**

**In computer science, a linked list is a linear collection of data elements, called nodes, each pointing to the next node by means of a pointer.**

**Hash Table（哈希表）**

**A hash table is a data structure used to implement an associative array, a structure that can map keys to values. A hash table uses a hash function to compute an index into an array of buckets or slots, from which the desired value can be found.**

**Chapter 5：**

**explicit 明确**

**of marginal relevance 无关要紧**

**interrupt vt.& n. 中断**

**kernel n. 核心,内核**

**process scheduling 过程调度**

**share vt.& n. 共享**

**invoke v. 调用**

**microkernel n. 微核**

**hierarchy n. 层次,层级**

**monolithic 整体**

**adjoining layers 相邻的层**

**detract 削弱**

**portability 可移值性**

**stratified into 分成**

**OS (Operating System) 操作系统**

**binding n. 捆绑**

**mutual interference 相互干扰**

**interface n. 界面，接口**

**facilitate vt. 推动, 帮助，促进**

**allocation n. 分配, 安置**

**constraint n. 约束, 强制, 局促**

**criteria n. 标准**

**embody vt. 具体表达, 使具体化**

**entry n. 条目，登录**

**privilege n. 特权； vt.给与...特权**

**partition vt. 分区**

**approach n. 方法, 途径**

**a priori 预先,事前**

**perceive v. 感知, 感到, 认识到**

**preemption n. 抢占**

**suboptimal adj. 未达最佳标准的**

**entrust v. 委托**

**sequential adj. 顺序的,串行的**

**exclusive use 专用**

**concurrent adj. 并发的, 并行的**

**de-allocate vt. 释放**

**scheduling n. 调度**

**salient features 特征, 特色**

**initiate vt. vi. 开始, 发动**

**forceful de-allocation of a resource 强制释放资源**

**OS functions can be classified into**

* + **Resource allocation and related functions**
  + **User interface functions.**

**The resource allocation function implements resource sharing by the users of a computer system.**

**Resources can be divided into system provided resources like CPUs, memory areas and IO devices, or user-created resources like files which are entrusted to the OS.**

**Two popular strategies for resource allocation are:**

* + **Partitioning of resources（static allocation）**
  + **Allocation from a pool（dynamic allocation）**

**An OS can use a resource table as the central data structure allocation.**

**There are different ways in which resource can be shared by a set of programs. Some of these are:**

* + **Sequential sharing**
  + **Concurrent sharing**

**OS user interfaces typically use command languages**

**A variety of computational structures can be defined by an OS. A sample list of computational structures is as follows:**

**1. A single program**

**2. A sequence of single programs**

**3. A collection of programs.**

**Two kinds of programs can exist: sequential and concurrent.**

**all operating systems contain components for functions of memory management, process management and protection of users from one another.**

**Three characterizations of user computations have been used to date--jobs, programs and processes.**

**OS design strongly depends on two factors: architectural features of the computer on which it operates, and features of its application domain.**

**Variations mainly concern the location of the process scheduler and the device drivers within the OS.**

**The module containing the policy routines is architecture independent and the part containing the mechanisms is architecture specific.**

**For this reason, the OS kernel is often said to be interrupt-driven.**

**Resource control actions of the module can be classified into**

**1. Policies governing the use of resources.**

**2. Mechanisms to implement the policy.**

**chapter 6：**

**software life cycle 软件生命周期**

**authorized adj. 权威认可的, 经授权的**

**generic adj. 一般的, 普通的**

**in terms of adv. 根据, 按照, 用...的话**

**specification n. 详述, 说明书, 规范**

**modular adj. 模块的, 有标准组件的**

**decomposition n. 分解**

**pertaining to 与...有关的**

**imperative adj. 强制性的，命令式**

**approach vt. 接近,解决;n.近似,途径**

**evasive adj. 逃避的；回避的；推托的**

**potential adj. 潜在的, 可能的**

**terminology n. 术语学**

**encrypt v. 加密,将...译成密码**

**routine n. 程序**

**maintenance n. 维护, 保持**

**framework n. 构架, 框架, 结构**

**trial-and-error n. 试错，反复试验**

**after all adv. 毕竟**

**malfunction n. 故障，出错**

**prototype n. 原型**

**pretense 借口**

**discarded 放弃**

**tremendous 巨大的**

**narrow 专业的**

**conducive 有益的**

**elimination 减少**

**prevalent 普遍存在的**

**quest 探索**

**recursive 递归**

**off-the-shelf 现成的**

**computer-aided software engineering (CASE)**

**top-down methodology 自顶向下**

**bottom-up approach 自底向上**

**The stages within the development phase of the software life cycle are analysis, design, implementation, and testing**

**The Traditional Development Phase**

1. **Test methods: the box approach**

* **Black box testing**
* **White box testing**
* **Grey box testing**

**2. Testing type**

* **Alpha testing**
* **Beta testing**

**3. Stage of development in the view point of testing**

**(1) Pre-Alpha**

**(2) Alpha release**

**(3) Beta release**

**chapter 7**

**evolution n. 发展，演变**

**primitive 原始的**

**appropriating 适当的**

**interpreter 解释程序**

**compiler 编译器**

**intermediary 中间的**

**invoke 调用**

**premium 额外费用，奖金**

**cryptic 秘密(含义模糊)的**

**esoteric 深奥的 [ɛsə ˈtɛ rɪ k]**

**prompt n. 提示符**

**assemblers 汇编程序**

**correspondence 通信**

**an order of magnitude 一个数量级**

**crisis n. 危机**

**exploit v. 开发，使用**

**encapsulation n. 封装**

**inheritance n. 继承**

**polymorphism n. 多型，多态性**

**discrete adj. 单个的，离散的**

**edit-interpret-debug cycle**

**edit-compile-run-debug cycle**

**These instructions were translated back into machine language by interpreters and compilers.**

**If the compiled program can run on a computer whose CPU or operating system is different from the one on which the compiler runs, the compiler is known as a cross-compiler.**

**Normally the C’s program building process involves four stages and utilizes different ‘tools’ such as a preprocessor, compiler, assembler, and linker.**

**Preprocessing is the first pass of any C compilation. It processes include-files, conditional compilation instructions and macros.**

**摩尔定律是观察密集集成电路中晶体管的数量大约每两年翻一番。**

**这个周期通常被称为18个月，芯片性能每18个月增加一倍。**

**Software design principles, such as abstraction, information hiding, modularization and stepwise refinement**

**chapter 8  
hyperlink n.[计] 超链接**

**slice vt. 把...切成薄片; 把...分成部分**

**domain name 域名**

**host computer (host) 主机**

**instant messaging 即时信息服务**

**packet-switching 分组交换技术**

**client/server 客户机/服务器**

**circuit switching 线路转接**

**Router [计] 路由器**

**routing algorithm 路径算法**

**Ethernet n. 以太网**

**glibly adv. 流利地, 流畅地**

**robust 健壮的**

**military 军事的**

**assume responsibility 承担责任**

**resolution 决议**

**reassemble 重新装配**

**dedicated (exclusive used) 专用的**

**vulnerable 易受伤害的**

**emulation 模拟**

**The history of the Internet can be segmented into three phases：the *Innovation Phase, the Institutional Phase, the Commercialization Phase***

**Protocols can be implemented in either hardware or software.**

**chapter 9：**

**animation n. 动画**

**supplant vt. 排挤掉, 代替**

**extension n. 扩展名**

**amateur 业余的**

**categorize 归类**

**layouts 布局**

**attainment 实现**

**compromise 损害，妥协，退让**

**monitoring site traffic 监测网站访问量**

**various flavors 不同的风格**

**chapter 10：**

**breach 破坏，缺口**

**depositor 寄托者**

**vulnerability 弱点，攻击**

**perimeter 周围，周边**

**penetrate vt. 渗入; 穿透**

**asset 资产**

**tamper v. 篡改，影响**

**interception 截取**

**modification 修改**

**fabricate v. 伪造**

**spurious adj. 假的**

**intruder 入侵者**

**perpetrates 犯(罪),做(坏事)**

**circumstances 环境**

**inadvertent 非故意的**

**subtle changes 微妙的修改**

**forgery 伪造品**

**cryptography n. 密码学**

**encryption 加密**

**decrypt v. 解密**

**plaintext n. 明文**

**cyphertext n. 密文**

**secret-key 秘钥**

**public-key 公钥**

**symmetric adj. 对称的**

**data integrity 数据完整性**

**state-of-the-art 最新的**

**proliferate v. 增生,扩散**

**crack v. 解开，裂开**

**in possession of 拥有**

**vendors 厂家**

**Conversely 相反**

**authenticity 真实性**

**offensive adj. 无理的，攻击性的**

**proxy n. 代理**

**spam n. 垃圾邮件**

**rule of thumb 经验法则**

**a big deal 很重要**

**Steganography 隐写术**

**Digital forensics 数字取证**

**malicious 恶意的**

**steganography is concerned with concealing the fact that a secret message is being sent, as well as concealing the contents of the message.**

**而隐写术则考虑秘密消息如何进行发送及隐藏消息的内容。**

**the type of digital devices involved; computer forensics, network forensics, forensic data analysis and mobile device forensics.**

**hardware, software, and data.**

**计算机系统的主要资源是硬件、软件和数据**

**interruption, interception, modification, and fabrication.**

**有四种对计算机安全的威胁：中断，截取，篡改和伪造**

**防火墙使用下列三种方法之一或几种来控制进出网络的通信：**

1. **Packet filtering 数据包过滤**
2. **Proxy service 代理服务**
3. **Stateful inspection 状态检查**

**examples of exposures are unauthorized disclosure of data, modification of data, or denial of legitimate access to computing.**

**The two main competing cryptography schemes are known as the secret-key (symmetric) system and the public-key (asymmetric) system.**

**chapter 11：**

**facilitate 使容易，促进**

**field n. 字段**

**retrieval n. 检索**

**chronologically 按年代顺序排**

**reference n. 涉及，参考，引用**

**literature n. 文献，著作**

**bibliography 书目，参考书目**

**pertaining to 属于**

**aggregate 总数**

**flat databases 非结构化的数据库**

**declarative 陈述性的**

**deviate 偏离**

**sparse matrix 稀疏矩阵**

**hierarchical structure 树结构**

**network structure 网状结构**

**relational structure 关系结构**

**physical structure 物理结构**

**interoperate 交互**

**add-on adj. 附加的**

**console n. 控制台**

**archivelog n.. 档案日志**

**proactive adj. 前摄的，积极主动的**

**wizard n. 向导，范例**

**utility n. 实用程序，效用**

**critical adj. 临界的，关键性的**

**expire v 期满，到期**

**improper 不正确的**

**Entity–attribute–value model (EAV)**

**实体-属性-数值模型（EAV模型）**

**DBMS STRUCTURING TECHNIQUES：**

**List structures. Hierarchical (tree) structures. Network Structures.**

**2. Add-on packs**

**(1) Standard Management Pack 标准管理包**

**(2) Diagnostics Pack 诊断包**

**(3) Tuning Pack 调整包**

**(4) Change Management Pack 变化管理包**

**chapter 12：**

**retention n. 保留，保持**

**full-motion video 全运动影像**

**aid v. 援助，帮助**

**project from 伸出来**

**feature-length movies 长篇**

**pixel 像素**

**coordinate with 协调**

**by no means 绝不是**

**trade-off 权衡**

**playback v. 重播，读出**

**frame n. 帧**

**jargon n. 行话，术语**

**synthesizer n. 综合器，合成器**

**analog circuits 模拟电路**

**Multimedia requires sound and graphics capability.**

**下面是MPC的两个术语：FULL-MOTION VIDEO，MIDI**

**Digital audio is technology that can be used to record, store, generate, manipulate, and reproduce sound using audio signals that have been encoded in digital form.**

**数字音频是使用已被编码成数字格式的音频信号来记录、存储、产生、操作和复制声音的一种技术。**

**analog-to-digital converter 模-数转换**

**Digital audio systems may include compression, storage, processing and transmission components.**

**数字音频系统可能包括压缩、存储、处理和传输等部件**

**Rounding and truncation are typical examples of quantization processes.**

**舍入和截断是量化过程的两种典型例子**

**chapter 13：**

**conversation n. 会话，交谈**

**pervade 蔓延，遍及，扩大**

**simulation n. 模拟，仿真**

**perspective a. 透视的**

**intractable a. 难解决的**

**diverse a. 不同的**

**indispensable 不可缺少的**

**visual appeal 视觉魅力**

**rugged 粗糙的，要求不高的**

**raster-scan display 光栅扫描显示器**

**hard-copy 硬拷贝**

**resolution n. 分辨率**

**electron beam 电子束**

**illuminated 被照明的**

**horizontal a. 水平的**

**transparency n. 透明性**

**We can classify applications of computer graphics into four main areas:**

**·  Display of information**

**·  Design**

**·  Simulation**

**·  User interfaces**

**我们可以把计算机图形学的应用分作四个主要方面：**

**· 信息显示、 设计、 模拟、· 用户界面**

**In general, a sequence is designed with the following steps:**

**·  Storyboard layout**

**·  Object definitions**

**·  Key-frame specifications**

**·  Generation of in-between frames**

**动画序列的设计**

**通常，一个动画序列按照以下几步进行设计：**

**故事情节拆分**

**对象定义**

**关键帧描述**

**插值帧的生成**