Unit 3

# Computer Software

## Objectives:

In this unit you should

- Get a general idea of computer software.
- Identify the relationship between application software and system software.
- Recognize the application software classification.
- Finish the activities required in the two checkpoints.

## Introduction

Software is a general term for the various kinds of programs used to operate computers and related devices. In other words, software is just another name for programs. Programs are the instructions that tell a computer how to process data into the form you want.

Software can be thought of as the variable part of a computer and hardware the invariable part. There are two major kinds of software — application software and system software. You can think of application software as the kind you use and of system soft as the kind the computer uses.

Most computer uses have common fundamental personal productivity software needs — some combination of word processing, spreadsheet, presentation, personal finance, personal information management, Web authoring, and graphics. You can buy all these individually if you want to, or you can them in a suite. Software suites are "bundle" of related software packages that are packages that are sold together. The dominant leader in suite sales for office application is Microsoft Office. The high-end edition of this package bundled Word (for word processing), Excel (for spreadsheet), PowerPoint (for presentation graphics), Access (for database management), together with several other programs such as FrontPage (for Web site development). Most software suites are revised continuously, with a new version being released every year or two, which can

result in a high level of stress for those involved with the software development process.

## Passage One

### An Overview of Computer Software

Computer hardware is the collection of physical components that make up a computer, for example, a screen, a CPU, **laptop**, mouse, keyboard, ect. Computer software can't be touched. It is the set of job descriptions that a computer can perform. Computers often **come with** software already installed and ready to work, otherwise it can be bought in a box containing a set of CDs (the software is on the CDs) or downloaded from the internet.

An important point to understand about software and computers is that a computer won't do a job until it's told which one to do. A computer program is **the set of instructions** that tell the computer how to do the job.

Computer software is most commonly **created** by computer programmers using a programming language. The programmer writes commands in the programming language that are similar to what someone might use in everyday speech. These commands are called **source code**. Another computer program called a **complier** is then used on the source code, **transforming** the commands **into** a language that a computer can understand. The result is an **executable** computer program, which is another name of software.

Computer software falls into tow primary **categories**: application software and system software. Some experts also include a third category, programming software, though others put those programs into one of the other **previously** mentioned categories.

The operating system or O/S is the set of the very basic jobs computers do such as showing mouse movement on a screen when a physical mouse is moved by a computer user. Examples of operating systems include: **Windows Vista**, **Windows XP**, **Mac OS X**, **Linux and UNIX**.

**Windows Vista/XP**
微软操作系统
**Mac OS X**
苹果公司操作系统

Application software or just "application" is, for most people, where the fun starts. An application is the software bought to do common jobs such as play a game, allow people to speak to each other, record music and change it to new **formats**, view videos, play DVDs, **scan** books or listen to music-the list is endless.

Common applications include the software which allows access to the Internet and viewing **web sites** (an **Internet browser** such as **Firefox** or **Internet Explorer**). Other example applications include **word processor** to produce and print **documents**, **spreadsheets** to manage **accounts** and **finances**, or software to produce and print pictures.

**web site**
网站
**Internet browser**
网络浏览器
**word processor**
文字处理器

## Useful words & expressions

1. overview [ˈəuvəvjuː] n. [图] 综述;概观
2. laptop [ˈlæptɔp] n. 膝上型轻便计算机
3. instruction [inˈstrʌkʃən] n. 指令,命令;指示;教导;用法说明
4. create [kriˈeit] vt. 创造,创作;造成
5. source [sɔːs] n. 来源;水源;原始资料
6. code [kəud] n. 代码,密码;编码 vt. 编码;制成法典 vi. 指定遗传密码
7. complier [kəmˈplaiə] n. 依从者;编译器
8. executable [ˈeksikjuːtəbl] adj. 可执行的;可实行的
9. category [ˈkætigəri] n. 种类,分类;[数] 范畴
10. previously [ˈpriːvjuːsli] adv. 以前;预先;仓促地
11. format [ˈfɔːmæt] n. 格式;版式 vt. 使格式化;规定……的格式 vi. 设计版式
12. scan [skæn] vt. 扫描;浏览;细看 vi. 扫描;扫掠 n. 扫描;浏览;审视
13. browser [ˈbrauzə] n. [计] 浏览器;吃嫩叶的动物;浏览书本的人
14. processor [ˈprəusesə] n. [计] 处理器;处理程序;加工者
15. document [ˈdɔkjumənt] n. 文件,公文;[计] 文档;证件 vt. 用文件证明
16. spreadsheet [ˈspredʃiːt] n. 电子制表软件;电子数据表;试算表
17. account [əˈkaunt] n. [会] 账目 vi. 解释;导致 vt. 认为; 记账
18. finance [faiˈnæns] n. 财政,财政学;金融 vt. 供给……经费 vi. 筹措资金
19. come with 与……一起……; 伴随……的发生……
20. a set of 一套;一组;一副
21. transform into 转变成

## Notes

**1. System Software(系统软件)**

计算机的软件分为系统软件和应用软件。系统软件是为了计算机能正常、高效工作所配备的各种管理、监控和维护系统的程序及其有关资料。系统软件主要包括如下几个方面:

- 操作系统软件,这是软件的核心。
- 各种语言的解释程序和编译程序(如 Basic 语言解释程序等)。
- 各种服务性程序(如机器的调试、故障检查和诊断程序等)。
- 各种数据库管理系统(FoxPro 等)。

系统软件的任务,一是更好地发挥计算机的效率;二是方便用户使用计算机。

**2. Application Software(应用软件)**

应用软件是为解决各种实际问题而编制的计算机应用程序及其有关资料。应用软件往

往都是针对用户的需要,利用计算机来解决某方面的数学计算软件包、统计软件包、有限元计算软件包。事务管理方面的软件如工资系统、人事档案系统、财务系统等。计算机的作用之所以如此强大,最根本的原因是计算机能够运行各种各样的程序,从而发挥强大的作用。

**3. Internet Browser(因特网浏览器)**

网页浏览器是个显示网页服务器或档案系统内的文件,并让用户与这些文件互动的一种软件。它用来显示在万维网或局部局域网路等内的文字、影像及其他资讯。这些文字或影像可以是连接其他网址的超链接,用户可迅速及轻易地浏览各种资讯。网页一般是 HTML 格式。有些网页需使用特定的浏览器才能正确显示。个人计算机上常见的网页浏览器包括微软的 Internet Explorer、Opera、Mozilla 的 Firefox、Maxton 和 Safari。浏览器是最经常使用到的客户端程序。万维网是全球最大的连接文件网络文库。

**4. Firefox(火狐)**

火狐,为一开源网页浏览器的非正式中文名称(Firefox)。使用 Gecko 引擎(非 IE 内核),由 Mozilla 基金会与数百个志愿者所开发。原名“Phoenix”(凤凰),之后改名“Mozilla Firebird”(火鸟),再改为现在的名字。2010 年 1 月 14 日,火狐开发商 Mozilla 高管迈克·贝尔泽纳(Mike Beltzner)表示,为进一步加快火狐后续版本的开发进度,Mozilla 发布火狐 3.6 正式版后,将放弃原先火狐 3.7 版开发计划,而改为通过定期发布安全升级方式,为火狐逐步增加各项新功能。

**5. Internet Explorer(微软网页浏览器)**

什么是浏览器呢? 浏览器(Browser)实际上是一个软件程序,用于与 WWW(什么是 WWW )建立连接,并与之进行通信。它可以在 WWW 系统中根据链接确定信息资源的位置,并将用户感兴趣的信息资源取回来,对 HTML 文件进行解释,然后将文字图像或者将多媒体信息还原出来。

IE 浏览器是微软公司推出的免费浏览器(全称为 Internet Explorer),2006 年的最新版本是 IE 7.0 浏览器。IE 浏览器最大的好处在于,浏览器直接绑定在微软的 Windows 操作系统中,当用户计算机安装了 Windows 操作系统之后,无须专门下载安装浏览器即可利用 IE 浏览器微实现网页浏览。不过其他版本的浏览器因为有各自的特点而获得部分用户的欢迎。

## Checkpoint 1

1. Put the following terms into Chinese.
   (1) source code
   (2) programmer
   (3) DVD
   (4) system software
   (5) application software
   (6) programming software
   (7) web site
   (8) word processor
2. Fill in the blanks with the information given in the text.
   (1) Computer _____ is the collection of physical components that make up a computer, for example, a screen, a CPU, laptop, mouse, keyboard, ect.

(2) Computer _____ is the set of job descriptions that a computer can perform.

(3) A computer _____ is the set of instructions that tell the computer how to do the job.

(4) Computer software is most commonly created by computer programmers using a _____ language.

(5) The _____ writes commands in the programming language that are similar to what someone might use in everyday speech.

3. Choose the best one from the items given below to complete the following passage.

The computer itself does not do all the work on its own. The work is done by a __(1)__ of the computer, called hardware, and __(2)__ of instructions, called software or computer programs. Inside the machine, the instructions are __(3)__ and carded out to do the work you want to do. A computer with out software is nothing more than a mass of metal and plastic. On the other hand, software without a computer is simply wasted __(4)__ because only the computer can use the software and put it to work. When you talk about a computer's being able to do this or that, you are really referring to the __(5)__ that accepts your commands and the computer that carries them out.

| | | | |
|---|---|---|---|
| (1) A. memory | B. chip | C. combination | D. wire |
| (2) A. programs | B. procedures | C. sets | D. subroutines |
| (3) A. composed | B. explained | C. interpreted | D. organized |
| (4) A. disc | B. file | C. tape | D. potential |
| (5) A. editor | B. hardware | C. keyboard | D. software |

## Passage Two

### Application Software

There are many types of application software.

An **application suite** consists of **multiple** applications **bundled** together. They usually have related functions, **features** and **user interfaces**, and may be able to **interact** with each other, such as open each other's files. Business applications often come in suites, for example, Microsoft Office, OpenOffice.org, and iWork, which bundle together a word processor, a spreadsheet, etc. But suites exist for other purposes, such as **graphics** and music.

**application suite**
应用程序套件
**user interface**
用户界面

#### Enterprise software

**Enterprise** software **addresses** the needs of organization processes and data flow, often in

a large **distributed** environment. (Examples include Financial, Customer Relationship Management and Supply Chain Management).

**Enterprise infrastructure software** provides common capabilities needed to support enterprise software systems. (Examples include **databases**, E-mail servers, and **network and security management**).

**enterprise infrastructure software**
企业构架软件
**database**
数据库
**network and security management**
网络和安全管理

## Information software

Information software addresses the needs of individuals to create and manage information, often for individual projects within a department, in contrast to enterprise management. Examples include time management, resource management, documentation tools, **analytical** and **collaborative**. Word processor, spreadsheet, E-mail and blog **clients**, personal information system, and individual media editors may aid in multiple information worker tasks.

## Content access software

Content access software is the software used **primarily** to access content without editing, but many include software that allows for content editing. Such software addresses the needs of individuals and groups to **consume** digital entertainment and published digital content. (Examples include Media Players, Web Browsers and Games).

## Media development software

Media development software addresses the needs of individuals who **generate** print and electronic media for others to consume, most often in a **commercial** or educational setting. This includes graphic art software, **desktop publishing software**, multimedia development software, **HTML editors**, digital **animation** editors, digital audio and video **composition**, and many others.

**graphic art software**
版画软件
**desktop publishing software**
桌面发布软件
**HTML editor**
网页编辑器

## Product engineering software

Product engineering software is used in developing hardware and software products. This includes Computer Aided Design (CAD), Computer Aided Engineering (CAE), Computer Language Editing and **Compiling** Tools, **Integrated** Development Environments, and

**Computer Aided Design**
计算机辅助设计
**Computer Aided Engineering**
计算机辅助工程
**Integrated Development Environment**
集成开发环境

Application Programmer Interfaces.

## Useful words & expressions

1. suite [swiːt] n. (一套)家具;套房;组曲;(一批)随员,随从
2. multiple ['mʌltipl] adj. 多重的;多样的;许多的 n. 倍数;[电] 并联
3. bundle ['bʌndl] n. 束;捆 vt. 捆 vi. 匆忙离开
4. feature ['fiːtʃə] n. 特色,特征;容貌 vi. 起重要作用 vt. 特写;由……主演
5. interface ['intəfeis] n. 界面;接口;接触面
6. interact ['intərækt] vi. 互相影响;互相作用 vt. 互相影响 n. 幕间剧;幕间休息
7. graphic ['ɡræfik] adj. 形象的;图表的;绘画似的
8. enterprise ['entəpraiz] n. 企业;事业;进取心;事业心
9. infrastructure['infrə,strʌktʃə] n. 基础设施;公共建设;下部构造
10. distribute [di'stribjuːt] vt. 分配;散布;分开;把……分类
11. address [ə'dres] vt. 演说;从事;写姓名地址;向……致辞 n. 地址;演讲
12. capability [keipə'biləti] n. 才能,能力;性能,容量
13. client ['klaiənt] n. [经] 客户;顾客;委托人
14. collaborative [kə'læbərətiv] adj. 合作的,协作的
15. analytical [ænə'litik,-kəl] adj. 分析的;解析的;善于分析的
16. primarily ['praimərəli] adv. 首先;主要地,根本上
17. consume [kən'sjuːm] vt. 消耗,消费;使……着迷 vi. 耗尽,毁灭;耗尽生命
18. generate ['dʒenəreit] vt. 使形成;发生;生殖
19. commercial [kə'məːʃəl] adj. 商业的;营利的;靠广告收入的 n. 商业广告
20. animation [æni'meiʃən] n. 活泼,生气;激励;卡通片绘制
21. integrate ['intiɡreit] vt. 使……完整; vi. 成为一体 adj. 整合的 n. 一体化;集成体
22. compile [kəm'pail] vt. 编译;编制;编辑;[图情] 汇编
23. composition [kɔmpə'ziʃən] n. 作文,作曲;[材] 构成;合成物
24. enterprise software 企业软件
25. information software 信息工作处理软件
26. content access software 内容访问软件
27. media development software 媒体开发软件
28. product engineering software 产品工程设计软件

## Notes

**1. Enterprise Software(企业管理软件)**

企业管理软件是能够帮助企业管理者提高工作效率,而不是增加他们的负担。没有

复杂的流程设计,没有复杂的表单设计等。企业管理软件重视系统功能的全面性,流程的可控性,技术的先进性,更要注重系统的易用性。

企业管理软件,是指能够体现企业管理的大部分职能(包括决策、计划、组织、领导、监控、分析等),能够提供实时、相关、准确、完整的数据,为管理者提供决策依据的一种软件。以模块划分,企业管理软件可分为财务管理、车间管理、进销存管理(ERP)、资产管理、成本管理、设备管理、质量管理、分销资源计划管理、人力资源管理(HR)、供应链管理(SCM)、客户关系管理(CRM)等品种。

**2. Media Development Software(媒体开发软件)**

一般的多媒体系统由如下四个部分的内容组成:多媒体硬件系统、多媒体操作系统、媒体处理系统工具和用户应用软件。

- 多媒体硬件系统:包括计算机硬件、声音/视频处理器、多种媒体输入/输出设备及信号转换装置、通信传输设备及接口装置等。其中,最重要的是根据多媒体技术标准而研制生成的多媒体信息处理芯片和板卡、光盘驱动器等。
- 多媒体操作系统:或称为多媒体核心系统(Multimedia kernel system),具有实时任务调度、多媒体数据转换和同步控制对多媒体设备的驱动和控制,以及图形用户界面管理等。
- 媒体处理系统工具:或称为多媒体系统开发工具软件,是多媒体系统的重要组成部分。
- 用户应用软件:根据多媒体系统终端用户要求而定制的应用软件或面向某一领域的用户应用软件系统,它是面向大规模用户的系统产品。

**3. CAD(计算机辅助设计)**

除计算机本身的软件如操作系统、编译程序外,CAD 主要使用交互式图形显示软件、CAD 应用软件和数据管理软件 3 类软件。

交互式图形显示软件用于图形显示的开窗、剪辑、观看,图形的变换、修改,以及相应的人机交互。CAD 应用软件提供几何造型、特征计算、绘图等功能,以完成面向各专业领域的各种专门设计。构造应用软件的四个要素是算法、数据结构、用户界面和数据管理。数据管理软件用于存储、检索和处理大量数据,包括文字和图形信息。为此,需要建立工程数据库系统。它同一般的数据库系统相比有如下特点:数据类型更加多样,设计过程中实体关系复杂,库中数值和数据结构经常发生变动,设计者的操作主要是一种实时性的交互处理。

**4. CAE(计算机辅助工程)**

从广义上来说,计算机辅助工程包括很多,从字面上来讲,它可以包括工程和制造业信息化的所有方面,但是传统的 CAE 主要指用计算机对工程和产品进行性能与安全可靠性分析,对其未来的工作状态和运行行为进行模拟,及早发现设计缺陷,并证实未来工程、产品功能和性能的可用性和可靠性。这里主要是指 CAE 软件。

CAE 软件可以分为两类:针对特定类型的工程及产品所开发的用于产品性能分析、预测和优化的软件,称为专用 CAE 软件;可以对多种类型的工程和产品的物理、力学性能

进行分析、模拟和预测、评价和优化,以实现产品技术创新的软件,称为通用 CAE 软件。CAE 软件的主体是有限元分析(Finite Element Analysis,FEA)软件。

## Checkpoint 2

1. Put the following terms into English.
   (1) 编译器　　(2) 程序师
   (3) 指令　　(4) 博客
   (5) 浏览器　　(6) 计算机辅助工程
   (7) 服务器　　(8) 客户
2. Select one answer to each question.
   (1) The computer consist of hardware and _____.
   A. software　　B. instruction　　C. programmer　　D. user
   (2) Which of the following does NOT belong to application software?
   A. word processor　　B. electronic spreadsheet
   C. graphic program　　D. backup program
   (3) Where is application software stored on?
   A. RAM　　B. Hard disc　　C. ROM　　D. Buffer
   (4) Which of the following is the most fundamental concept of computer software?
   A. Word processor　　B. Spreadsheet
   C. Application software　　D. System software
   (5) _____ provides support for application software.
   A. User　　B. Motherboard
   C. Memory　　D. System software
   (6) When started by users, application software is loaded into the _____ of a computer.
   A. RAM　　B. monitor　　C. screen　　D. hard disc
3. Translate the following sentences into Chinese.
   (1) An application suite consists of multiple applications bundled together. They usually have related functions, features and user interfaces, and may be able to interact with each other, such as open each other's files.

   _____

   (2) Enterprise software addresses the needs of organization processes and data flow, often in a large distributed environment.

   _____

   (3) Information software addresses the needs of individuals to create and manage information, often for individual projects within a department, in contrast to enterprise management.

   _____

(4) Media development software addresses the needs of individuals who generate print and electronic media for others to consume, most often in a commercial or educational setting.

(5) Product engineering software is used in developing hardware and software products. This includes Computer Aid Design (CAD), Computer Aid Engineering (CAE), Computer Language Editing and Compiling Tools, Integrated Development Environments, and Application Programmer Interfaces.

## Listening comprehension

1. Listen to the Extract 1 twice and fill in the blanks.

**Word Processing Software**

There are many __(1)__ for using computers today. __(2)__ is one area that has demonstrated how __(3)__ computers can be. There are many different __(4)__ of word __(5)__, and many can be __(6)__ complicated. In fact, today, it is difficult to __(7)__ a computer __(8)__ word processing software included somehow. Although there are many different __(9)__ of software, most __(10)__ the same basic functions, and do not require advanced computer or typing skills to use.

2. Listen to Extract 2 and supply the missing words or phrases.

**Inserting Pictures**

A: What are you doing here with your computer, Tom?
B: I'm editing __(1)__.
A: Could you __(2)__ with me after you finish ?
B: I'd like to. But I'm having some trouble inserting pictures __(3)__.
A: Don't you know how to insert pictures?
B: Don't laugh at me, I have never done __(4)__ before.
A: Why didn't you ask me? I am quite familiar with that.
B: That __(5)__. You see the picture? That's what I want to insert.
A: First, put the cursor __(6)__ you want to insert the picture.
B: Here it is.
A: OK, __(7)__ the "insert" menu.
B: Then?
A: Point at the "picture" menu and click "from clipboard" or "from file" __(8)__.
B: OK. I want to insert one from a file.