

Chapter (2)

Basic Application Software

2-1 Understanding Software

The software is a major driving force behind computer. Computer users work with *application programs* to complete day-to-day business task more efficiently, search for the information they need faster and analyze their options more effectively.

Application software can be purchased as a package or it can be custom designed.

2-1-1 The people who use application packages

- Users who are business managers or employees who need computer-produced information to summarize and analyze data and to help them make decisions.
- Software specialists who customize the software
- Data entry operators who actually enter the data.

2-1-2 Types of Basic Application Software

They are 4 packages:

a- Word Processing: It is a *software* allowing to creating Documents Files, such as letters, contracts, reports,... and it reduces the time it takes to do them.

Word Processing is one of the most widely used application programs today.

b- Electronic Spreadsheets: It is a *software* permitting to creating Electronic Spreadsheets Files, where data is represented in column and row format.

Spreadsheets packages are *one of the most important and widely used business tools*.

c- Database Management Systems DBMS: It is software allowing creating a Database; and to enter data into the database, modify (update) the data as required, & retrieve information from the database. Data in the database is presented in fields and records format.

d- Presentation graphics: They are programs that include a variety of features to help users create attractive dynamic presentations.

2-1-3 Integrated Packages & Suites

a- Integrated Packages: An integrated package is a single program that provides the functionality of a word processor, spreadsheet, DBMS, and more.

The primary advantages are cost and simplicity. The cost of an integrated package is much less than the cost of the individual powerful, professional-grade application programs.

The primary disadvantage of an integrated package is that the capabilities of each function (such as word processing) are not as extensive as in the individual programs (such as Microsoft Word).

Integrated packages are sometimes classified as personal or home software.

The most widely used integrated packages are Microsoft Works and AppleWorks.

b- Suites: A Suite* is a group of basic software applications designed to work together. Advantages of suites:

- Various packages (applications) have the same “look & feel” – the same buttons, menus and overall appearance.
- Ease of data transfer from one package to another. Once you learn one application, the rest is easy.
- The cost of a suite is a much less the combined costs of individual packages.

Some examples of Suites

Word processing	Spreadsheet	DBMS	Presentations	Suites*
Word	Excel	Access	PowerPoint	Microsoft Office
WordPerfect	Quattro Pro	Paradox	Presentations	Corel WordPerfect Office
Word Pro	Lotus 1-2-3	Approach	Freelance Graphics	Lotus SmartSuite

* A suite can be composed of these main packages and of one or more of additional packages, or combination of them. The additional packages for:

- Microsoft office 2003 are: Outlook 2003, Publisher 2003 and Frontpage 2003.
- Microsoft 2007 & 2008 are: Outlook 2007, Publisher 2007, Accounting Professional 2008 and other packages.

SELF- TEST

1. ***(T or F) Most PC users purchase application packages rather than write their own custom programs.***
2. ***(T or F) Basic Application Software Packages are a part of operating systems software.***
3. ***Define and describe four Basic Application Software.***
4. ***What is the difference between an integrated package and a suite?***

Solutions:

1. *T*
2. *F- They are types of application software.*
3. *They are:*
 - a. *Word processing package for entering, editing, and printing documents.*
 - b. *Spreadsheet package for representing data in column-and-row format, for calculating automatically, for graphing results, and for determining the impact or potential changes (“What – if “ analysis).*
 - c. *Database management package for creating, editing, and updating files and for producing reports and answering inquiries about the status of those files.*
 - d. *Presentation graphics for creating attractive presentations.*
4. *An integrated package is a single program (one software tool) that provides the functionality of a word processor, spreadsheet, DBMS, and more. A suite consists of the separate, full-blown Basic Application Software packaged as a unit. A suite consists of separate packages (It has the complete features of these packages).*

3-2 Common Features of Basic Application Software

To get started with any software package, learn how to:

- Load the program.
- Name a new file that you will create or retrieve an existing file.
- Enter a new file.
- Edit or make changes to a file.
- Select and execute commands.
- Save the file.
- Print the file.
- Exit the program.

3-3 Other Main Features of Basic Application Software

3-3-1 Word processing packages, They allow users to:

- Edit documents benefiting from available tools: AutoCorrect, Spelling checker, grammar checker, thesaurus,...
- Format documents: Use different type fonts, change margins, adjust character and line spacing, adjust paragraph alignment, create bulleted and numbered paragraphs,...
- Create documents using templates or wizards.
- Create tables and organize information into rows and columns.
- Do simple Web-pages design and support Internet & intranet *¹ hyperlinks *².

(*¹) Intranet is an in-company Web site viewed only from computers of company network.

(*²) This is a common feature for other tools (Excel & Access).

3-3-2 Electronic Spreadsheets packages

It is software permitting to create Electronic Spreadsheets Files; where data is represented in column and row format. The intersection of a column and row forms a *cell*. Each cell can contain:

- *A value*: It is a number that you want to use in calculation.
- *A label*: It is any text that is used to describe data.
- *A formula*: It tells the computer how to use the contents of cells in calculations.

Relative and Absolute Cell Addressing: The address of a cell can be either *relative* or *absolute*.

- *A relative address*: A *relative address* is an address that cell references are relative to the position of the formula. It changes if you copy the formula elsewhere. Suppose that you enter the flg. formula in cell D1:

$$D1 = B1 + C1$$

In this formula, the addresses B1 and C1 are relative. If you copy the formula to cell D2, for example, D2 holds this: B2 + C2.

- *An absolute address* is an address that cell references always refer to cells in a specific location. It does not change if you copy the formula elsewhere. If a dollar sign (in Excel) precedes the letter and/or number, the column and/or row reference is absolute.

If you want to sum two columns of data (B1 with C1, B2 with C2, and so on) and then multiply each sum by constant number, for example, the constant number could be a cell referred as an absolute address. That formula might look like this:

$$= (B1 + C1) * \$B\$5$$

\$B\$5 is *an absolute address*, but B1 and C1 are relative. If you copied the formula down one row, the formula would change to this:

$$= (B2 + C2) * \$B\$5$$

Note: When using Formulas, in the cell's formula, each formula *begins* with an equal sign.

The Primary Math Operators (Excel)

Operator	Example	Description
^	= 3 ^ 2	Raises 3 to the power of 2 (exponentiation).
/	= 6 / 3	Divides 6 by 3.
*	= 4 * 3	Multiplies 4 by 3.
+	= 5 + 4	Adds 5 and 4.
-	= 8 - 6	Subtracts 6 from 8.

When combining operators, the package follows the traditional computer (and algebraic) *operator hierarchy* model: Exponentiation (first), then multiplication and division, addition and subtraction (in left-to-right order).

The following formula:

$$= 18 - 2 ^ 3 / 4 * 2$$

returns a result of 14: the exponentiation of 2 raised to the third power (= 8), and then the answer is divided by 4 (= 2), then the result is multiplied by 2 (=4), and finally 18-4 = 14.

Note: using parentheses you can override the *operator hierarchy*. For example, the following Formula: $= (18 - 2) ^ 3 / 4 * 2$

returns a different result from the previous one, despite the same values and operators used: instead of 14, this formula returns 2048.

Working Functions: Spreadsheets have built-in functions that can be used to evaluate or operate on data. Instead of writing a formula to do a summation, you can use the sum () function. The function: =Sum (B6 : B12) means

$$=B6+B7+B8+ B9+B10+B11+B12$$

Other Common Functions:

- Average (): Computes the average of its arguments.
- Max (): Returns the highest (maximum) value in the argument list.
- Min (): Returns the lowest (minimum) value in the argument list.
- Product (): Computes the product (multiplicative result) of the argument range.
- Sqrt (): Computes the square root of the cell argument.

Graph: Numeric data in a spreadsheet can be graphed to provide a pictorial representation of the data for analysis or decision-making. Graphs can be displayed, saved, retrieved, and printed.

Create Database File: Spreadsheets can be used to create simple database file.

In conclusion, Spreadsheet Packages allow users to:

- Prepare worksheets and reports that are formatted properly and are arithmetically correct.
- Make corrections or changes easily and perform automatic calculations.
- Perform automatic recalculation in cells that includes formulas.
- Help users to make plans, and analyze these results.
- Perform “what-if ” analysis to test the impact of projected changes
- Create graphs based on data in the worksheet
- create templates or worksheet shells that can be reused when new data is compiled.

3-3-3 Database management systems (DBMS) packages:

It is software allowing creating a Database; and to enter data into the database, modify (update) the data as required, & retrieve information from the database. Data in the database is presented in fields and records format.

A Relational DB Management S/W is capable of creating *Interrelatable files* that are referred to as *tables*. Hence, a Database is a collection of related tables. Two steps are needed to create a database table (file):

- Design the structure of the table; where the following has to be specified:
 - Field Name.
 - Field Type: character fields, numeric fields, date fields, logical fields.
 - Field Width.
- Enter the data into the table.

A Relational DB Management S/W is capable of joining two files by using a *primary key field* that appears in both fields.

The key field is a main field that uniquely identifies each record and that is used to create an index for fast retrieval of records.

Forms: These electronic forms (that look similar to traditional printed forms) are displayed on the computer monitor and typically reflect the contents for one record in a table. They are primarily used to enter new records and to make changes to existing records.

Queries: It is a question or a request for a specific data contained in the database. For example, what is the average salary?

Note: When entering instructions that involve making comparisons, flg. rational operators will be needed:

<u>Command</u>	<u>Explanation</u>
<	Less than
>	Greater than
=	Equal to
<=	Less than or equal to
>=	Greater than or equal to
< >	Not equal to

Reports: A DB Management S/W can be used to generate reports. Data from tables and queries can be printed in a variety of different types of reports from a simple listing of an entire field in a table to a list of selected fields based on a query involving several tables.

The user specifies the sequence in which output information is to appear, to actual information desired, the format, the headings, and any totals.

Working Database Quickly: DBMS (Access 2003 for example) comes with a set of databases that are designed to perform specific functions such as Inventory Control, Expenses, Resource scheduling,.. Each of these databases comes with a Wizard that allows you to customize it to fit your needs. Using a wizard to create your database is a very easy process: You merely respond to a few dialog boxes with some information, and Access creates your database application.

DBMS allow users to:

- Make data entry, editing, updating, and viewing easy.
- Create template that can be reused when new data is compiled.
- Inquire about data in the files and to obtain quickly statistics and other summary data.
- Provide printed reports based on data in the database files.
- Generate output without the need for a computer professional to write sophisticated programs
- Join or link data in two or more database files for obtaining more comprehensive information.

3-3-4 Presentation Graphics

Presentation programs include a variety of features to help users create attractive dynamic presentations.

People in a variety of settings and situations use presentation programs to make their presentations more interesting and professional. For example:

- Marketing managers use presentation graphics to present proposed marketing strategies to their superiors.
- Salespeople use these programs to demonstrate products and encourage customers to make purchases.
- Students use presentation graphics programs to create high-quality class presentations.

Some Terms

- ***Slide:*** A presentation is made up of many slides shown in different views and presentation styles.
- ***Master slide:*** A special slide that does not appear in a presentation but

controls all the formats and placement of all slides in a presentation. The design template can be changed for an entire presentation using a master slide.

- ***Design template:*** It provides professionally selected combinations of color schemes, slide layouts, and special effects for presentation graphics.

In conclusion, Presentation packages allow users to create computerized slides (or electronic transparencies) by:

- Create a new presentation using the AutoContent Wizard.
- Create a new presentation using a Design Template.
- Create a new blank presentation; or
- Open an existing presentation.

3-4 Evaluating Basic Application and Other Software Packages

- Speed.
- Cost.
- Compatibility with existing hardware and other software.
- Extra features such as the ability to import other files.
- Quality of the documentation.
- Ease of learning and ease of use.
- Error handling.
- Technical support.
- Update policy.
- Online help or tutorials.

SELF- TEST

1. *Right margins a word processing document can be _____ or _____.*
2. *Sometimes a word that is being typed using a word processing package can not fit on the current line and is automatically brought down to the next line. What is this process called?*
3. *Name three types of data users can enter in spreadsheet cells.*
4. *(T or F) Formulas can be copied from one cell or range of cells to another cell using a spreadsheet package.*
5. *(T or F) A DBMS can be used to inquire about records in a database file and to report from the database file.*
6. *Name six criteria often used for evaluating Basic Application Software.*

Solutions:

1. *Right justified; ranged right.*
2. *Word wrapping.*
3. *Labels; numeric data; formulas*
4. *T*
5. *T*
6. *Speed, cost, compatibility with existing hardware and other software, technical support, ease of learning and ease of use, quality of the documentation.*

Internet & Electronic Mail (E-Mail)

➤ *The Internet:*

It is a global collection of huge quantity of networks supported by governments, academic institutions, and businesses. It enables users not only to communicate with one another using e-mail but also to access data from vast databases on thousands of subjects.

Some Main Concepts

- *Web*: The Web, or World Wide Web (WWW), is a collection of Internet pages of information. Web pages can contain text, graphics, sound and video. So Web is a set of interconnected pages that contain specific information.
- *Uniform Resources Locator (URL)*: The URL is the unique address of Web page. *You can view any Web page if you knew its URL.*

format of URL:

Example → <http://www.ksu.edu.sa> where:

- *http* - hypertext transfer protocol: It is the means of communicating by using links, the clickable text or image that transports a user to the desired site. Newer browser versions supply the <http://>
- www.ksu.edu.sa - *address or domain name* is the address of the Internet Service Provider (ISP).

The last part of the domain name is called *top-level domain*. It represents the purpose of the organization or entity:

- **com for commercial (business sites).**
- **edu for education.**
- **gov for Government.**
- **org for nonprofit organization.**

- In case that this part is 2-letter code it stands for the country of origin: sa - for Saudi Arabia, jp - for Japan, de - for Germany. And so on.
- o *Some Terms:*
 - *Web Site:* It is a individual location on the World Wide Web.
 - *Home Page:* It is the start or main page in the site. It acts as a directory by linking to what are often numerous pages of content.
 - *Web Browser or Browser* is software used to access the Internet. It brings data to your desktop.

A number of browsers are available. Two popular browsers are Netscape communicator and Microsoft's Internet Explorer*.
 - *A Search Engine* is software that enables a user to enter words and phrases for which to search, and then to scan the vast information on the Web to locate sites that contain these words or phrases. Some examples: Yahoo, Google, ...
 - *Hypertext:* It is the text that can be clicked to cause a link to another Web site.
 - *HTML (HyperText Markup Language):* It is the most used language for developing Web pages. This & other *markup languages* are created to make possible to rapidly transmit documents over network using minimal line capacity.

Minimum requirements for connecting to Internet:

- | | |
|------------------------|-----------------------------------|
| - Processor 486. | - 100 MB free space on hard disk. |
| - 16 MB RAM. | - Windows 95. |
| - 28.8 kbit/sec Modem. | - ISP. |
| | - Internet Browser. |

(*) Microsoft's Web browsing program comes with every version of office (starting from office 2000).

➤ ***The Electronic Mail (E-Mail)***

It is a software enabling users to create messages files and to electronically send and receive messages over electronic communication systems. *E-Mail* is the most-used feature of the Internet, used by even more people than the Web.

Before the Internet, e-mail users were limited to communicating with others on the same network. As a network of networks, the Internet has made it possible for any user connected to the Internet to send e-mail to anyone on the Internet.

Some main Concepts

- ***Mail Server***: If you are connected to the Internet through your employee's network, the network will provide a *Mail Server* that collects and stores your e-mail in a *mailbox* that you can access at your convenience. If you connect to the Internet through an ISP, the mail server resides on the ISP's computer, and you have to check periodically for new mail.
- ***E-mail Address***: It consists of the user name assigned to you by your ISP or network administrator, followed by the @ symbol, then the domain name of your mail server; for example: *dncas@ksu.edu.sa*
- ***E-mail Client Software*** on your Pc allows you to retrieve, create, send, store, print, and delete your messages. There are some additional features like address book, from which you can select addresses for new mail.

Electronic commerce (e-commerce)

Electronic commerce, also known as e-commerce, is the buying and selling of goods and services over the Internet.

The underlying reason for the rapid growth in e-commerce is that it provides incentives for both buyers and sellers.

From the buyer's perspective:

- Goods and services can be purchased at any time of day or night.
- Buyers no longer have to physically travel to the seller's location.

From the seller's perspective:

- The costs associated with owning and operating a retail outlet can be eliminated.
- Reduced inventory: With e-commerce, there is no in-store inventory and products are shipped directly from warehouses

o *E-commerce disadvantages:*

While there are numerous advantages to e-commerce, there are disadvantages as well. Some of these disadvantages include:

- The inability to provide immediate delivery of goods.
- The inability to "try on" prospective purchases. &
- Questions relating to the security of online payments.

o *Basic types of electronic commerce:*

- **Business-to-consumer (B2C):** It involves the sale of a product or service directly to the consumer. This arrangement eliminates the middleman by allowing manufacturers to sell directly to customers.

The 3 most widely used B2C applications are:

- **Online Banking (e-banking):** Customers are able to perform many banking operations: Accessing account information, Transferring funds. Paying bills. Applying for loans.
- **Online Stock Trading (e-trading) :**It allows investors to research, buy, and sell stocks over the Internet.
- **Online shopping (e-retailing).** It includes the buying and selling of a wide range of consumer goods over the Internet.
- **Consumer-to-consumer (C2C):** A recent trend in C2C e-commerce is the growing popularity of Web auctions. Web auctions are similar to traditional auctions except that buyers and sellers seldom, if ever, meet face-to-face.
- **Business-to-business (B2B):** It involves the sale, over the Internet, of a product or service from one business to another.

o ***Security***

The single greatest challenge for e-commerce is the development of fast, secure, and reliable payment methods for purchased goods. The three basic payment options are:

- **Checks:** They are the most traditional and perhaps the safest.
Unfortunately, check purchases require the longest time to complete.
- **Credit card** purchases are faster and more convenient than check purchases. Credit card fraud, however, is a major concern for both buyers and sellers.
- **Electronic cash, or e-cash,** is the Internet's equivalent to traditional cash. Buyers purchase e-cash from a third party (a bank that specializes in electronic currency) by transferring funds from their banks. Although not as convenient as credit card purchases, e-cash is more secure.

CHAPTER SELF-TEST

1. *What are the four major categories of Basic Application Software?*
2. *A package that combines the features of the four Basic Application Software and adds some features of its own is called a (n)_____.*
3. *The intersection of a column and a row in a spreadsheet is called a _____.*
4. *(T or F) Once a spreadsheet is set up, you cannot insert new rows or columns, so it is important to get it right the first time.*
5. *To end a paragraph in a word processing file, press the_____ key.*
6. *(T or F) The structure of a database file can be changed by the user even after data has been entered.*
7. *(T or F) Records in a database file that meet used – specified criteria can't be displayed or printed.*
8. *What is the Internet?*
9. *(T or F) Electronic mail files can be sent to more than one recipient without having to reenter the message.*

Solutions:

1. *Word processing; spreadsheet; DBMS; presentation graphics.*
2. *Integrated package.*
3. *Cell*
4. *F*
5. *Enter*
6. *T*
7. *F*
8. *The Internet is a global collection of networks supported by academic institutions, governments, and business. Users with access to the Internet can send each other e-mail messages and access thousands of database.*
9. *T*