

## Integrated Software Packages:

Integrated software combine the function of the most important PC software packages, such as **word processing, spreadsheets, presentation graphics, and data basis management**. This integration provides a more general purpose software tool and eliminates redundant data entry and maintenance. Integrated packages are a compromise. Although they can do many things well, they generally do not have the same power and depth as single-purpose packages.

Microsoft offices is an example. This software contains word, word processing software, Excel spreadsheets software. Access databases software, PowerPoint presentation graphics software, and Outlook, a set of tools for e-mail, scheduling, and contact management. This software has features of integrated packages, such as the ability to share data among different applications.

Other examples are OpenOffice, Google Docs and QuickOffice

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## Purpose of a word processor, spreadsheet and database

### Word processor

Word processing software is widely used for:

- writing documents such as letters, memos, reports, books, articles, notes and faxes
- creating email messages
- producing agendas and minutes of meetings
- generating invoices, statements, referrals and other written material.

Word processing software is used because it's easy and functional, allowing you to produce documents that include a range of **fonts** and font **sizes**, **graphics** (pictures), **symbols** and **charts**. A number of proofing tools such as **spelling** and **grammar checkers** are also available.

It's easy to make changes to existing documents and produce multiple documents that have only slight differences, for instance a **mail merge** where a standard letter is sent to customers with just the customer details changed.

Industry-standard word processing software packages include Microsoft Word and Corel WordPerfect.

## Features of a word processing package

Professional word processing packages are capable of performing many intricate tasks. Here is a list of some of the features you would expect to find:

- editing facilities with auto text
- spelling and grammar checkers
- cut and paste — text/graphics can be rearranged within the same document or between a number of documents
- page formatting — layouts, margins, pagination
- character formatting — eg bold, underline, italics, etc
- text alignment — eg justified centre, left right, full
- centering — vertical/horizontal
- automatic page numbering
- search and replace
- headers and footers
- sorting facilities
- macros
- tables
- footnotes, endnotes
- style sheets
- mail merge
- envelopes/labels
- newspaper/parallel columns
- table of contents, indices, table of authorities
- sequencing
- vertical text and other effects
- watermark
- some desktop publishing capabilities.

## Spreadsheets

Spreadsheet software is probably the second-most used software application on a computer behind word processing. Spreadsheets allow a user to quickly calculate numerical data, perform 'what if' scenarios,

represent data with charts and extract and print data quickly.

Spreadsheets can be used to

- organise and analyse data,
- create documents and reports,
- provide data for mail merges and tables, and
- create charts. In fact they can be used for any numerical or text/graphic based documents.

Features of a spreadsheet package

Spreadsheet software packages come in all shapes and sizes. These packages are capable of performing many intricate tasks.

All spreadsheets have the same overall features:

- formulas to perform varying grades of mathematics
- editing facilities with auto text
- cut and paste — text/graphics can be rearranged within the same document or between a number of documents
- page formatting, eg columns, margins and page breaks (pagination)
- character styling, eg bold, underline and italics
- text alignment, ie justified, centre, left, right and full
- centring — vertical/horizontal
- automatic page numbering
- search and replace
- spelling checker/grammar checker/thesaurus
- headers/footers
- sorting facilities
- use of relative and absolute referencing
- creating charts to visually represent data
- exporting and importing data easily to database products
- importing/manipulating graphics and graphs
- macros
- styles
- font changes
- provide data for mail merge
- vertical text and other text effects

• some desktop publishing capabilities.

Industry-standard spreadsheet packages include Microsoft Excel, Lotus 123 and Quattro Pro. The main difference between the packages will generally be the syntax (the structure) required to complete a task or the whereabouts on the menus of the individual features. For example, Microsoft Excel starts all formulae with the '=' sign; while Lotus 123 uses the '+' sign. Refer to the documentation that comes with the packages.

Database

Databases have become very important in recent decades and are now seen as being one of the most important assets of a business. Large amounts of vital information can be accumulated, stored, modified, processed, retrieved and distributed to many people and organisations. Just think of our banking system, car registration system, airline reservations and welfare payments systems.

Any database management system allows you to use a computer to create a database. It also allows you to add, sort, modify and select particular data, as well as to create forms and reports using the data in the database. There are many database packages available but Microsoft Access is one of the most popular.

### **What is a database?**

A database is a set of organised data. Non-computerised databases include filing cabinets where documents or cards holding many types of information are filed in chronological (date), numerical or alphabetical order.

### **Features of a computer database**

Computer databases have many advantages over paper or card based data storage systems. Computer databases:

- are organised in a more flexible form to allow easy updating, presentation and reporting of data
- have far superior means of retrieving and analysing the stored information using advanced search methods
- are designed to handle large amounts of data efficiently (imagine updating 10,000 records in a paper database!)
- can perform many processes very quickly, such as sorting records in alphabetical order

- can accurately maintain complex relationships between different groups of data
- allow the sharing of data. Data can be stored once and accessed by many different people. This helps control data redundancy (repetition) and consistency.

Just think about the banking system. You can have a savings account at one bank in a particular location but also gain access to your account through automatic teller machines at any shopping centre and through any electronic funds transfer machine that will accept your card. The bank processes and verifies each of your transactions along with many thousands of others each day, debits or credits your account, and instantly provides a new account balance. Then each month the bank mails out a statement to you and all its other customers, detailing the transactions in the accounts.

There are two main types of computerised databases:

- 1 **flat file**—all data is simply stored in one table and can be accessed from this single table
- 2 **relational**—data can be shared with or ‘related’ to other multiple tables in the same database.

### Features of a database package

There are many features of a database and they include:

- handling a collection of interrelated data
- the data is organised (in some fashion)
- there is a set of programs which can access the data.

There are three main features of a Database Management System (DBMS) that make it attractive to use in preference to other systems. These features are:

- centralised data management
- data independence
- systems integration.

In a database system, the data is managed by the DBMS and all access to the data is through the DBMS providing a key to effective data processing. This contrasts with conventional data processing systems where each application program has direct access to the data it reads or manipulates.

In the conventional data processing application

programs, the programs are usually based on a considerable knowledge of data structure and format. In such an environment any change of data structure or format would require appropriate changes to the application programs. If major changes were to be made to the data, the application programs may need to be rewritten.

In a database system, the database management system provides the interface between the application programs and the data. When changes are made to the data representation, the metadata maintained by the DBMS is changed but the DBMS continues to provide data to application programs in the previously used way. The DBMS handles the task of transformation of data wherever necessary.

This independence between the programs and the data is called **data independence**. Data independence is important because every time some change needs to be made to the data structure, the programs that were being used before the change would continue to work. To provide a high degree of data independence, a DBMS must include a sophisticated metadata management system.

In DBMS, all files are integrated into one system thus reducing redundancies and making data management more efficient. In addition, DBMS provides centralised control of the operational data.

### Categories of application packages

Software applications are available in a variety of ways. Each business should consider which type of package best suits their requirements. The choices are divided into two broad categories:

- 1 **proprietary software** (sometimes referred to as ‘off the shelf’ software) which is sold through retail outlets or freeware/openware which is made available free of charge over the Internet
- 2 **custom software** (know also as ‘in-house’ software) which is written specifically for the business by either employees or contracted programmers.

Within both of these categories applications can be available as ‘stand-alone’ programs or they can be part of an integrated package.

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