

WORD PROCESSING

INTRODUCTION

One of the simplest, yet most useful, applications for a personal computer is to use it as a typewriter to create text files. It is useful to make a distinction in this regard between **text editors**, **word processors** and **desktop publishing applications**. A text editor may be used to enter and edit text in an Ascii text file. Text editors are normally used to save text exactly as it is typed, and generally contain very few additional formatting features. Examples of text editors include **Notepad** and **Wordpad** (both of which are supplied with Windows) and **Edit** (supplied with DOS). Word processors, in contrast, provide a wide range of formatting options. They are designed to allow one to layout documents exactly as they are to be printed. **Wordperfect** and **Microsoft Word** provide examples of a word processor. Desktop publisher applications may be thought of as advanced word processors that provide more control over the layout of pages. They are useful for designing things like advertising leaflets, posters, business cards etc. but are not generally required in the normal course of events. We will not consider them further. Examples include **Adobe PageMaker** and **MS Publisher**.

Word processors provide much greater flexibility than text editors, and would generally be used when one wishes to create a document to be read by others (e.g. an essay or a thesis). However, a simple text editor may be more appropriate in other situations. For example, if you need to create a file containing data or commands in a specific format to be used as input into a program, it is generally preferable to create the file using a text editor. The main reason is that files created by a word processor (typically with a **.doc** extension) contain a lot of information about fonts and other things in addition to the text which you enter, whereas application programs which read text files expect only text or numbers. Most word processors, including **Word**, provide options for saving the text as a text only file (typically with a **.txt** extension), but it is generally safer to use a text editor.

The remainder of this handout confines itself to a discussion of the word processor **Microsoft Word**.

BAD HABITS TO BE AVOIDED

Word processors provide a variety of advanced features which can take some time to master. However, they can also be used with some success by complete novices. This, unfortunately, results in many users developing very bad habits that can cause all sorts of problems later on. It is therefore recommended that you develop good habits right from the start. Examples of bad habits include:

1. **Writing out text by hand before typing it into the computer.** This is perhaps understandable if you are not used to typing and therefore find it difficult to type and compose at the same time. However, you should try to develop the habit of composing at the keyboard. Most people quickly develop an acceptable typing speed even with only two fingers. Remember that it is not essential to type everything correctly the first time round - one of the big advantages of a word processor over a typewriter is that you can easily correct your mistakes and rephrase the text at a later date. If you cannot remember specific details, mark the place with an asterisk * and then fill in the details later. Once you get used to composing at the keyboard, you will find it difficult to go back to more traditional methods.
2. **Pressing the <Enter> key at the end of a line.** Each time you press the <Enter> key it inserts a line feed into the text (i.e. it begins a new line). However, word processors use **word wrapping** to begin a new line automatically. If you need to change the size of the page or the type of font, the word processor can automatically reformat the text - unless you have screwed things up by inserting surplus line feeds.
3. **Pressing <Enter> twice to start a new paragraph.** Some people press <Enter> twice to insert a blank line between paragraphs. This is totally unnecessary and can be very irritating for editors trying to convert documents from different sources to a standard format. If you wish to insert a blank line between paragraphs, you should adjust the paragraph spacing settings (see below). **Never hit the <Enter> key more than once.**
4. **Pressing <Space> several times to space text.** One of the most common errors is to press the <Space> bar several times in an attempt to control the spacing between words. This can be a futile exercise because the word processor will simply adjust the size of the spaces to avoid breaking words at the end of a line. If you

wish to control the spacing of items of text you should use tabs in conjunction with the ruler (see below), except in situations where a table (see below) might be more appropriate. **Never hit the <Space> bar more than once.**

STARTING WORD

Word may be started using any of the usual methods (e.g. double clicking the **Word** icon on the desktop). On starting, *Word* will normally display a blank page ready for you to start entering text. If the application and document windows are not both maximised, maximise them using the maximise buttons at the top right.

If you wish to work on an existing text document, you can open the file using the **File|Open** menu option (or by clicking on the **Open** icon). When the dialogue box appear, adjust the contents of the Look In box to point to drive X: (or wherever your file is located), navigate if necessary to the correct folder, and then double click on the name of the file you wish to open.

Before entering or editing text, you may wish to check the following settings:

1. **Printer settings.** Make sure the printer on which you propose to print your final copy is selected. *Word* may reformat the document if you change printers, so it is best to design the document with the final printer in mind. As a general rule, you should make sure the **Geography 1 (Mono PS)** printer is selected, using the **File|Print** menu option. After selecting the printer, click the **Cancel** button (as opposed to the **OK** button) to avoid printing at this stage.
2. **Page settings.** Use the **File|Page Setup** menu option to check that your page settings are correct. For example, the page settings should be set to A4 if you propose to send your document to the laser printer. You can also adjust the size of the margins and other parameters (although it is generally best to leave these at the default settings unless you suspect someone else has modified them).
3. **Document template.** *Word* allows you to define different standard layouts (or templates) for different types of documents (see below). The **Normal** template will be loaded by default if you are starting a new document using the **New** button, but you can select from several alternative templates if you use the **File|New** menu option. Make sure you have a suitable template before proceeding.

Word allows you to work on several documents at the same time. If you wish to work on a second document use the **Open** or **New** button on the Toolbar or else select the **File|Open** or **File|New** menu option. Each open document will be located in a different document window. These may be displayed side by side using the **Window|Arrange All** menu option, but it will generally be more convenient to work on one at a time in a maximised window. You can switch between them using the list that appears at the bottom of the **Window** menu.

Exercise 1.

Double click the **Gis04.bat** icon to copy a file called **word.doc** to c:\temp. Open the file in *Word*. The file should contain a copy of this handout. Create a new document in a second window using the **New** button. Experiment with arranging the windows, maximising and restoring them, and switching between them when they are maximised.

SAVING FILES

Word is normally configured to automatically save your work at regular intervals, but it is probably a good idea to get into the habit of manually saving your work at regular intervals (just in case there is an unexpected power cut). You can save a file at any time using the **File|Save** menu option (or by clicking the **Save** icon). Either way, the file will be saved using the current file name (i.e. the name of the file that you opened, or the name you used when you last saved the text). If you have not previously saved the text, a dialogue box will open asking you to enter a file name. Make sure that drive X: is specified in the Look In box (or drive A: if you want to save your file to a floppy disc), and enter the name you wish to give to the file, retaining a .doc extension, in the File Name box and then click the **Save** button. (N.B. The previous copy of the file will be destroyed when you save a file

using the **Save** option. This is not normally a problem, but situations may arise where you wish to save the original version. In such instances you could use the **File|Save As** option. This allows you to save the altered file using a new name, whilst retaining the original file under its old name.)

Word also allows you to save different versions of the same document in the same file. There are several ways to do this. One is to select file **File|Versions** menu option. When the dialogue box opens, click the **Save Now** button and enter a few words of text to help you identify the version later on. This could be as simple as 'Version 1'. Any changes you make and save to the document after this point will be saved as part of a new version. The next time you open the document, you will automatically open the most recent version, but the **File|Versions** menu option can be used to select an older version. The selected version and the current version will be displayed in separate panels for easier comparison. There are also options that we will come back to later that allow you to highlight the changes between documents.

By default *Word* will save your file as a *Microsoft Word* file. However, *Word* may also be requested to save the file using any of a number of other formats that are installed. To see what options are available, click the triangular arrow beside the Save As Type box. It is probably best to ignore most of these unless you need one of them for a particular purpose. (The *Text Only* option is possibly the only one you will ever need to use).

Exercise 2.

Save a copy of *word.doc* to your floppy disc or x: drive. Close the *word.doc* window using the close button, then close the window with the new document. Close *Word* and then start it again and load the file *word.doc* from your floppy disc.

CHANGING VIEWS

Word provides a number of alternative methods for viewing your text. Most of these are listed under the **View** menu. The four more commonly used options are also available from small icons in the bottom left corner of the screen:

- **Normal** view. This is the preferred view on a slow computer as it allows the text to be typed and reformatted quickly. It can probably be ignored on a Pentium machine.
- **Online Layout** view. This view is designed for displaying the document as it would appear if published as a web page. This view by default displays a 'document map' which is useful for moving around large documents. The panel on the right contains the document text, whilst the panel on the left contains the headings and sub-headings used in the document (assuming that you are using **styles** – see below). You can move directly to a particular part of the document by clicking on a heading in the left panel. One minor irritation with this view is that the small icons at the bottom left disappear, so it is necessary to use the **View** menu options if you wish to switch to a different view.
- **Page Layout** view. This is the preferred view if you wish to see how your document will appear on the page. Unless you are working with a very large document, in which case speed may be a more serious consideration, this is probably the preferred 'default' using a Pentium.
- **Outline** view / **Master** document. If you have a long document, organised by different levels of headings, you can use the Outline view to show headings of a particular level. Whole sections of text may be easily moved around by dragging headings to a new location. The Outline view is useful for reorganising very large documents. The Master option is similar except it can be used to organise very long documents spread over several files.

It should be noted that while the document map is only displayed by default in the online view, it can be toggled on and off in any view from the **View|Document Map** menu option.

In addition to changing the type of view, *Word* also allows you to change the size of the text as it appears on screen using the **View|Zoom** menu option. A very convenient alternative is also provided on the Toolbar. If you click the arrow beside the box containing a percentage figure, a variety of options will be displayed. The **Page**

Width option will be found convenient for most purposes, but you can select any of the options or else type a number in the box.

Exercise 3.

Examine the file *word.doc* using each of the view options. Try experimenting with different zoom factors. When using the Outline view, try clicking the numbers 1, 2 and 3 on the icon bar to see the first, second and third order headings. Double click on the plus sign beside one of the headings to see what happens.

EDITING TEXT

Editing text in a *Word* document is generally fairly intuitive. If you wish to **insert** text, simply click at the point where you wish to add text and then type the additional characters. The existing text will be automatically adjusted to make space for the new text. (N.B. *Word* also allows you to overwrite existing text. If you press the **Insert** key, the overwrite mode will be toggled on and off. The current status is indicated in the status bar).

If you wish to delete text, simply click on the text you wish to delete and either press the <**Delete**> or <**Back Delete**> keys. If you wish to delete a larger chunk of text, it will generally be quicker to use the **Cut** button (i.e. the button with the scissors icon). To cut a section of text you first need to select it by dragging the cursor so that the text is highlighted (i.e. point the cursor at the beginning of the text to be selected, press the left mouse button and, keeping it pressed, drag the cursor to the end of the text to be selected, before releasing the mouse button. The selected text will be highlighted). Once the text to be deleted has been highlighted, click on the **Cut** button. (If you discover you made a mistake, you can restore the cut text by clicking the **Paste** or **Undo** button – see below).

Word provides two convenient methods for moving text. If you need to move a large chunk of text, it is probably easier to **Cut** it (as above), then click at the point where you wish to insert the text, and then click the **Paste** button. The alternative method, which is quicker and particularly suitable for moving small sections of text, is to highlight the text to be moved, then drag and drop it in a new location (i.e. point the cursor at the highlighted text, then holding down the left mouse button move the cursor to the new location before finally releasing the mouse button). N.B. This also works in *Wordpad* and the more recent versions of *Eudora*, but it will not necessarily work in other applications – e.g. *Notepad*.

Other useful options include the **Edit|Find** and **Edit|Replace** menu options. **Find** may be used to find all occurrences of a particular text string. Simply enter the text you wish to locate in the *Find What* box (and click some of the other boxes if you wish a more sophisticated search), then click the **Find Next** button. This will locate the first occurrence of the text string after your current location. Click this button again to find the next occurrence and so on. The **Replace** option is similar, except it also contains a *Replace With* box. Each time **Replace** finds text matching that in the *Find Next* box, it gives you the option of replacing it with the contents of the *Replace With* box. You can therefore easily substitute the correct details for a known error (e.g. someone's name persistently misspelt). These options can also be very useful if you cannot remember various details when writing a document. Simply insert an asterisk (or some other character that is not likely to form part of the normal text) and then do a Find or a Replace later to locate them and to replace them with the missing details. You can also write yourself short notes (e.g. *check these figures) to remind yourself to do things later.

If you make a mistake, it should be remembered that it can usually be undone using the **Edit|Undo** menu option. The Toolbar also contains **Undo** and **Redo** buttons, which list the 100 most recent steps, any number of which can be undone.

N.B. It should be noted that there are two buttons at the bottom of the scroll bar which normally allow you to move backwards or forwards one page at a time when moving around the document in most views. In Outline Layout view they normally move you backward or forward one screen at a time. However, the buttons can be programmed to move by different amounts by clicking on the Select Browse Object button in between. It is probably best to leave the buttons set in 'Browse by Page' mode, unless you specifically want one of the other options.

Exercise 4.

Add new sentences to *word.doc*, then delete them again. Try moving a sentence to a new location using a cut and paste, then try moving it back again using a drag and drop.

THE SPELLING AND GRAMMAR CHECKERS

One extremely useful facility within *Word* is the built-in spelling checking. *Word* also has a grammar checker. Each option can be switched on or off from the **Tools|Options|Spelling and Grammar** menu – i.e. make sure the ‘Check Spelling As You Type’ and ‘Check Grammar As You Type’ boxes each contain a tick. Some people find the grammar checker to be irritating rather than helpful, so you may wish to switch it off. However, the spelling checker should be left on at all times.

If you make what *Word* thinks is a spelling mistake, the word will be underlined in red. Grammatical mistakes are underlined in green. To correct a suspected spelling error, right click on it to activate the spelling checker dialogue. This will normally suggest alternatives, which can be accepted or rejected. If the correct spelling is in the list, click on it to select it, then click the **Change** button. If the original word is actually spelt correctly, you can either click the **Ignore** button to avoid making any changes, or click the **Add** button to add the word to the dictionary of correct spellings. (However, only do this if you are absolutely certain that the spelling is correct). The grammar checker operates in a similar manner, although its suggestions do not always make sense.

The entire document can be checked at any stage (even if the auto checking is off) using the **Tools|Spelling and Grammar** menu option.

CHANGING FONTS

Changing the zoom factor on a view will only affect how the document appears on the screen - it does not affect how it will appear when it is printed. However, it is a simple matter to change the size and style of the text using **Format|Font** menu option. Most of the main options may also be controlled from buttons on the Toolbar.

The current font (e.g. Times New Roman) is displayed in a box on the Toolbar. If you click the down arrow, you will see a list of available fonts. If you select one of these, then the selected font will be applied to whatever is subsequently entered from the current location of the cursor onwards. The box to the right contains a number. This is the font size. If you select a larger number, then the text will be printed larger. Most of this document is printed in Times New Roman 10 point. The document would also look okay in Times New Roman 12 point, but anything larger would look like the front page of a tabloid newspaper. *Word* often uses Arial font by default. This has the advantage of producing strong characters, even at 10 point, but it is not (in my opinion) a very attractive font. However, each of us has their own tastes.

The three buttons to the right of the font size box may be used to create different special effects. The first icon will cause the text to be printed in **bold**, the second will cause it to be **italicised**, and the third will cause the text to be **underlined**. All three special effects may be applied to the same text at the same time (although it is not to be recommended).

Font changes can be applied retrospectively to text that has already been typed. To change the font of existing text, select the text (i.e. point at the beginning of the text you wish to change, then drag the cursor to highlight the required text) then change the font settings or special effects as required. Click anywhere else (e.g. in the margin) to unselect the text after it has been reformatted.

Warning : Resist the temptation to use too many fonts and special effects. Documents using lots of different character styles simply look amateurish and ugly. As a general rule, you should never mix font styles in the same document, especially serif and sans serif fonts. It is preferable to use different font sizes and special effects only if you wish to emphasise headings or sections of text, but even then you should exercise restraint.

Exercise 5.

Select sections of text in the document *word.doc*, and experiment with different font styles, font sizes and special effects.

PARAGRAPH ALIGNMENT AND SPACING

Several options are provided for altering the ‘shape’ of paragraphs. Four icons are provided on the Toolbar (to the right of the special effects buttons) to align text on the left margin, centre it, align it to the right margin, or justify it (i.e. increase the size of the spaces so that the text is aligned on both margins). For most purposes you would either align it on the left margin or justify it.

These alignments may also be set using the **Format|Paragraph** menu option, which also provides numerous other options. For example, you can create wider margins (e.g. if you wish to inset a passage of text containing a quotation); you can indent the first line in each paragraph; you can adjust the spacing between lines within a paragraph; you can adjust the spacing between paragraphs; and so on.

The paragraph settings will affect any new text entered after the settings are selected. However, you can also adjust the settings of any paragraph retrospectively. Just click anywhere in the paragraph you wish to reformat, and then make the appropriate changes. (N.B. If you right click on a section of text, a pop-up menu will appear giving you rapid access to the paragraph dialogue box. This menu also provides a quick route to the dialogue box to change the font).

Exercise 6.

Experiment with different paragraph settings until you get a feel for each of the options.

THE RULER AND TABS

If you adjust the indent settings using the **Format|Paragraph** menu option (which can also be triggered by a right click), you will notice the position of the **markers** on the **ruler** (at the top of the document window when in page outline view) changing. The margins and indents may also be altered by dragging the margin boundary or the markers on the ruler to new locations. A little experimentation will indicate the function of each of the markers.

The ruler may also be used to locate **tab stops**. There are four types of tab stop: left aligned, centred, right aligned, and decimal point aligned (for aligning numbers). You can select the one you require by clicking on the button at the left end of the ruler until the symbol for the tab you wish appears. If you click on the ruler, a tab stop of that type will be placed at the point where you clicked. You may place as many tab stops on the ruler as required. To remove a tab stop, simply drag it off the ruler.

When tab stops are present on the ruler, the <Tab> key may be used to jump forward to the next tab stop location. The left aligned and decimal point aligned tabs are particularly useful for vertically aligning text and numbers respectively. If tab stops are not explicitly defined on the ruler, *Word* will use default settings.

Any adjustments made to the ruler will apply to the current paragraph (and any paragraphs which are subsequently entered immediately after). However, ruler settings can be applied to several paragraphs simultaneously by highlighting before making adjustments to the ruler.

Exercise 7.

Move to a new line. If there are any tab stops on the ruler remove them. Type the letters a, b and c, pressing <Tab> after each letter. This will space the letters using the default tab settings. Now insert a tab stop on the ruler at the one inch mark and at the three inch mark (or 3cm and 6cm mark if your ruler uses metric units). What happened to the three letters? What happens if you drag one of the tab stops to a new position? Press the <End> and <Enter> keys to begin a new line, and type the letters d, e and f, pressing <Tab> after each. Are the letters vertically aligned? What happens if you drag one of the tab stops to a new position? Can you figure out how to realign the letters?

BULLETED AND NUMBERED LISTS

Word provides handy facilities for placing bullets or numbers beside items that form a list. To add bullets, select the items that form a list and click the **Bullets** button. To remove the bullets, simply highlight the bulleted items in question and click the **Bullets** button again. The list items can be numbered or unnumbered in exactly the same manner using the **Numbering** button.

Once a numbered list has been defined in this manner, list items will automatically be renumbered when additional items are added to the list. The sequence of the items may also be resorted using the **Table|Sort Text** menu option.

More complex multi-level lists may also be defined - i.e. list items may contain sub-lists, which contain further sub-lists etc. down to a maximum of 9 levels. To create a multi-level list, highlight the items to be placed in the list, then select the **Format | Bullets and Numbering** menu option. (N.B. A quicker way of doing this is to right click on the highlighted list). When the dialogue box appears, click the **Outline Numbered** tab and select the style of numbering you wish to use. Once the multilevel list has been created, you change the level of selected items using the **Decrease Indent** or **Increase Indent** buttons on the Toolbar.

Various other options exist for modifying the appearance of bulleted and numbered lists. You should explore the on-line Help for further information.

Exercise 8.

Enter the following list items on separate lines: 'One', 'Two', 'Two A', 'Two B', 'Two B subsection 1', 'Three'. Highlight the items and create a multilevel list using one of the three options in the top row. Sort the items into three levels. Try changing the style of the numbering to one of the other styles on the top row.

HEADINGS AND STYLES

When writing a lengthy document, you will probably wish to add various headings and sub-headings. You will probably wish to alter the font and spacing of these headings to make them stand out. If you have several different levels of sub-heading, you will probably wish to use a standard format for each level. Rather than try to remember the settings for each level of heading, it is much better to use **Styles**. A style is a set of defined font and paragraph settings which can be applied in one easy step to any selected text.

To apply a style, click on the text you wish to apply it to. This text may be a heading, or the main body of a paragraph - the style will be applied to the whole heading or the whole paragraph. Next click on the arrow beside the **Style Box** at the left end of the Toolbar. Select the style you wish from the drop-down list by clicking on it. The style will be applied to your selected text.

You can see what style is currently applied to any text by clicking on the text: the style name will be displayed in the Style Box. It is also possible to see the names of all the styles currently in use in the Normal view. If the style names do not appear in the left margin of the Normal view, selection **Options** on the **Tools** menu (making sure you still have the Normal view open), click the View tab, then insert any positive number (e.g. 1 inch) in the box headed Style Area Width. However, to see how the styles will appear in the final printed document you will need to use the Page Layout view.

If you wish to change the definition of a particular style, select some text using that style, make the changes required using the **Format|Font** and/or **Format|Paragraph** options (as discussed in the previous handout), then select the style name in the Style Box. *Word* will recognise that the format has changed and will offer you a choice between two options. One is to reapply the current definition of the style to the selected text (i.e. to change the text format back to its original setting). The other is to change the definition of the style to match the selected text. If you select the latter option, all text in the document using that particular style will normally be changed automatically to the new definition. (N.B. This does not work with the Normal style, but the Normal style can be defined using the **Format|Style** menu).

In addition to changing the definition of an existing style, you may also add new styles of your own. To do this, select some text and reformat it in the format to be applied to the new style. Then select the **Format|Style** menu

option. When the dialogue box is displayed, click the **New** button. A second dialogue box will then be displayed. Enter a name for your new style in the *Name* box, and then press the **Ok** button to close the second dialogue box. (There are actually a few other very useful options that could be selected at this point, but we will ignore these for present). Click the **Apply** button to close the first dialogue box. The pull-down menu in the Style Box should now contain your new style.

When you open a new document, *Word* will provide you with a set of predefined styles. A style called Normal will be used for the main body of the text, whilst three levels of headings called Heading1, Heading2 and Heading3 will generally be provided. Other styles may also be present, depending upon the **Template** currently in use (see below). Even if you do not like the formats defined for these styles, you should get into the habit of using them at all times – i.e. *always apply one of the heading styles to format a sub-heading, rather than reformatting the heading manually*. It is a very simple matter to redefine the format of a style, compared with the hassle involved in redefining the format of every heading in a long document.

A second reason for using styles for the headings is that it makes it possible to get a better grasp of the structure of a long document using the Outline or Online views (see previous handout) - if you do not use styles, the entire document may appear at the same 'level'

Exercise 9.

Try redefining the Heading2 and Heading3 styles to see if you can improve the appearance of *word.doc*. Try redefining the Normal style to see if you can eliminate the blank lines between each paragraph, but begin each paragraph with the first line indented by half an inch. Notice what happens to the headings. Can you find any explanation for this. (Hint: look at the definitions for the heading styles using the **Format|Style** menu option). See if you can redefine the styles for Heading2 and Heading3 to restore them to their original appearance.

FORMAT PAINTER

Word provides an alternative method for copying the format from one section of text to another. To use this, you should highlight the section of text you wish to copy the format from, click on the **Format Painter** button on the Toolbar, and then drag the cursor across the text you wish to transfer the format to.

This method is useful for copying the format of parts of paragraphs (e.g. isolated words in bold script), but it needs to be used with caution when applying a format to a heading or a whole paragraph because the style name is not always copied (e.g. a heading reformatted in this way may still be regarded as Normal style, consequently if you redefine the heading style at a later stage the format for this particular will not be changed automatically). As a general rule it is preferable to apply styles, as described in the previous section.

TEMPLATES

Each document is based upon a **Template**. A template is basically a collection of styles (plus various other things that we can ignore for the present). It may also include text that can be automatically included in each new document to avoid retyping (e.g. an address in a letter heading). If you use the **File|New** menu option (as opposed to the **New** button) to open a new document, you will be presented with a choice of templates to choose from. However, if you use the **New** button on the Toolbar, the document will be opened using the Normal (or default) template.

If you redefine a style, the new definition of the style will be saved with your document - i.e. the formatting of your document will reflect the styles you defined, rather than those originally defined by the template. However, if you open a new document, the original template styles will still be in force. In other words, the template is not changed when you change styles in a document, unless you specifically edit the template. *However, you are requested not do this otherwise you will make life difficult for other users.*

If you hit upon a set of styles that you are particularly happy with, and wish to use it in other documents, one rather cumbersome (but effective) method of re-using the styles would be to open an old document containing the styles, delete all the text, and use the **File|Save As** menu option (not the **Save** option!!) to save the empty file

using the name you wish to give to your new document. You can then enter the text in the new document, using the styles preserved from the old document.

Exercise 10.

Use the **File|New** menu option to explore the templates available on your machine. Enter some text and apply a few styles to see how they appear.

COLUMNS

In most instances you will probably want the text to be displayed in a single column. However, in some situations you may prefer two or more columns. This can be handled very easily using the **Format|Columns** menu option. Simply select the number of columns you require, and select the appropriate options if you want to change column widths or spacing; want columns of unequal width; or lines drawn between the columns. The text will be organised to fill the first column to the bottom of the page, then the second column and so on, before starting on the first column on the next page. (N.B. The **Columns** icon may also be used to create columns using default settings).

SECTIONS

In most instances you will probably require the same layout to be applied to the whole document. However, in some instances you may wish to apply different layouts to different parts of the document. For example, you may wish the document to begin and end with a single column, but may wish the middle portion to be organised in two columns. This may be achieved by inserting two section breaks to divide the document into three **Sections**. Use the **Insert|Break** menu option to insert the beginning of each new section. You will see from the top portion of the dialogue box that it is possible to insert a page break or a column break (i.e. begin a new page or a new column) without actually starting a new section. However, if you wish to apply different formats to different parts of the document, it is preferable to start a new section. The New Page radio button, for example, will start a new page (e.g. to mark the beginning of a new chapter), whilst also beginning a new section. This gives you greater control over things like page numbering (see below).

If your document is divided into two or more sections, various settings (e.g. number of columns, page numbers) can be applied either to the whole document or to each section separately.

PAGE NUMBERING

You can get *Word* to automatically number the pages in your document, using the **Insert|Page Numbers** menu option. This option allows you to decide whether the numbers should be placed at the top or bottom of the page, and whether they should be placed on the right, left or centre. The Format button may be clicked to choose between different styles of numbering and also to specify what number to begin from if, for any reason, you not wish to begin at 1.

If your document is divided into several sections, the numbering in each section will begin at 1. However, you can reset the starting point within each section from the **Format** button (as described above). It can be irritating to have to do this in some situations, but it can also be very useful if you wish to skip certain page numbers (e.g. to leave a blank page for a map or diagram to be inserted at a later date). However, it should perhaps be added that trying to get the right number to appear on the right page using *Microsoft Word* can at times be extremely frustrating.

HEADERS AND FOOTERS

Page numbers normally appear in either the **header** or the **footer**. These are small areas at the top and bottom of each page which may be used to place not only page numbers, but other information (e.g. the time and date). Additional text may also be added (e.g. chapter or section headings). In this document, GIS04 (GIS module, class 4) has been added as a header. Two dashes have also been added to the footer, just to make the page numbers look slightly more attractive. The contents of the header and footer may be edited using the

View|Header and Footer menu option. This option may also be initiated by double clicking on either the header or the footer when in Page Layout mode. Either way a small toolbar will pop up. The function of each of the icons may be ascertained by pointing at them. Further details are available, if necessary, in the on-line Help.

To remove a header or footer, including page numbers, use the **Header and Footer** option to open the header or footer in question, highlight the material you wish to remove, then simply press the <Delete> key.

TABLES

If you are laying out text or numbers in rows and columns, you could align the contents using tab stops on the ruler. However, **Tables** provide much more control

To create a new table, select the **Tables|Insert Table** menu option. Specify how many rows and columns you require in the dialogue box. If you do not know for certain, just guess - you can always add or delete rows or columns at a later date (although changing the number of columns will probably require you to change column widths, so it is better to guess right). You can also choose between a number of pre-defined formats by clicking the **AutoFormat** button. When you have made your selections, click the **OK** button.

The table should appear in your document. If you did not use the AutoFormat option, and you cannot see anything, you will need to toggle the **Table|Gridlines** menu option. This will indicate the location of the rows and columns using dashed lines, although these lines will not appear on the final document when it is printed. This option can be toggled off again at a later stage to see exactly how the table will appear.

You can now begin to enter the contents of each of the cells in the table. Just click in the cell you want to add text or numbers to, and start typing. The vertical height of the cells will be adjusted to accommodate what you type. The vertical divides between the columns may be dragged to the left or right to make columns wider or narrower.

The normal formatting options may be also be used to improve the layout and appearance of the table. The text in each cell may be justified, centred, or left or right adjusted. Tab stops may be added to the ruler for aligning text. The contents of selected cells may be emboldened or italicised. And so on. The formatting will be applied only to the currently selected (i.e. highlighted) cells.

If you wish to align numbers in columns, its generally preferable to use decimal point tab stops for aligning numbers vertically in a column (as opposed to using the justify, centre, or left or right adjust buttons). **Do not even attempt to align numbers by entering extra spaces** - it will drive you demented, especially when what is printed does not match up with what is on your screen. To align numbers, select a column by clicking on the border at the very top of the column (the cursor will turn to a down arrow when it is correctly positioned), then add a decimal tab on the ruler at the point where you want the decimal points aligned.

If you did not use the AutoFormat option, you can draw lines around the cells using the **Format|Borders and Shading** menu option. Select either the whole table, or the cells that you want to draw a line around, then select the **Format|Borders and Shading** option. Select the style (e.g. grid) and thickness of line that you want, then click **OK**. This is a very flexible option which is probably best mastered through trial and error. By applying different styles to different selections of cells you can create virtually any effect you want. This option also allows you to insert a background shading if you wish. If it best to use only the lighter tones as they tend to be much darker in print than they appear on a monitor.

You can clear the contents of a table at any stage by highlighting the cells you want to clear and pressing the <Delete> key. If you want to remove a table completely, highlight it and then click on the **Cut** button. To delete a row or column, select the row or column in question, then select the **Table|Delete Row** or **Table|Delete Column** menu option.

INSERTING EMBEDDED OBJECTS

If you select the **Insert|Object** menu option you will be presented with a lengthy list of objects which can be inserted in Word document. Some of these are self-contained applications provided with Word and/or Microsoft

Office. However, the list also contains other applications on your machine which support OLE (Object Linking and Embedding). The contents of the list will vary from machine to machine, depending upon what software is installed and what options were selected during installation. We will focus initially on only a couple of examples.

Equation Editor

Occasionally you may need to include a mathematical or statistical formula, such as the one below for a population standard deviation, in a document. You could type it in from Word using different fonts, font sizes, superscripts, subscripts, etc. but a much simpler solution is to use the Microsoft Equation Editor.

$$\sigma = \sqrt{\frac{\sum_{i=1}^n (x - \bar{x})^2}{n}}$$

To start the Equation Editor, locate the cursor at the point where you wish to insert the formula and select the **Microsoft Equation 3.0** (or similar) option on the **Insert|Object** menu. A placeholder and a rather intimidating floating toolbar will appear. The menu bar at the top of the screen will also change to reflect the options available in the Equation Editor. These include a fairly good Help option that should be consulted for further details. However, the basic procedure is to enter Roman letters from the keyboard, and to enter Greek letters and special symbols from the floating toolbar. Small dashed boxes will be displayed indicating where additional details have to be added. It is important when entering the information to ensure that the cursor is always located at the point where the information is to be located. If you experience difficulties locating the cursor using a mouse, you may find it more convenient to use the arrow keys on the keyboard. You can also re-size the formula using the sizing handles.

When the formula is complete, simply click anywhere on the Word document to return to Word. If you need to make further changes to the formula, all you need do is double click on the formula to re-open the Equation Editor.

If you select the formula with a single click, the sizing handles will be displayed. These may be used to resize the formula. The formula may also be repositioned when selected using the **Align Left** and **Centre** buttons on the Word toolbar. To delete a formula, select it with a single click, then press the <Delete> key on the keyboard.

Exercise 11.

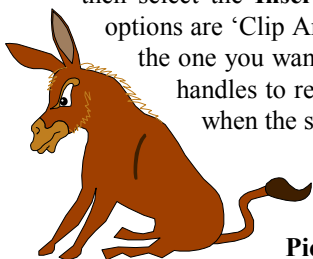
Use Equation Editor to place the formula for the classical linear model:

$$Y = \sum_{k=0}^n \beta_k X_k + \varepsilon$$

in a Word document.

Importing Pictures

If you wish to import a picture, you should locate the cursor near the point where the picture is to be inserted and then select the **Insert|Pictures** option. You will be presented with a sub-menu on which the first two options are 'Clip Art' and 'From File'. The **Clip Art** option displays a variety of clip art graphics. Select the one you want, then click the Insert button. Once the clip art object has been drawn, use the sizing handles to re-size and move the object to its intended destination. The object may also be deleted when the sizing handles are displayed.



The sizing handles can be re-displayed at any time by a single left click on the object. A right click will cause a pop-up menu to be displayed. The **Format Picture** option contains a number of useful options. The text can be made to flow around the picture using options on the **Wrapping** tab.

The **From File** option is generally used to import better quality pictures in one of a variety of formats including Windows Bitmaps (.bmp), Encapsulated Postscript (.eps), Tagged Image Format (.tif) and Joint Pictures Expert Group (JPEG) Filter (.jpg). On selecting the 'From File' option, you will be presented with a dialogue box asking you to identify the location of the file containing the picture. (N.B. If your picture is in a different format, it will generally be possible to convert it into one of the above formats using a utility programs such as **Paint Shop Pro**. Most graphics formats are *raster* based, but a few (especially those produced by drawing or CAD applications) are *vector* based. Vector based files can normally be converted fairly successfully into raster mode, but conversions in the opposite direction tend to be more problematical.)



Figure 1 - Karl Marx

When you identify the location of the file, a preview of the image will be displayed. Once you find the file you are looking for, click Okay. The picture will be displayed in your Word document. It may then be resized etc. in the normal manner. However, double clicking does not open the application which created the file (which has been inserted as an image, rather than as an embedded object); rather, it opens an application which in theory allows you to edit drawings, but does very little if the image is in a raster format (as will normally be the case).

The **Insert|Picture** menu contains an option called **Autoshapes**. This allows you to add selected shapes (e.g. arrows, flow chart boxes, etc) to your document. The easiest way to find out what it does is to try it.



Other options in the **Insert|Picture** menu provide alternative methods for starting WordArt and Graph. The 'From Scanner' option does not do much unless you are connected to a scanner.

INSERTING TEXT BOXES

Text may be inserted in the middle of other text as a 'box' or 'panel', in much the same way that a picture can be inserted, using the **Insert|Text Box** option. Select the **Insert|Text Box** option then Click on a point close to where you wish to insert the text box. A box will be displayed with sizing handles that can be dragged to define the size of the box initially float on top of probably not what you options, select the **Format|Text Box** menu option, and click on the Wapping tab, then choose the type of wrapping required. (N.B. if the Text Box option is not visible on the Format menu, make sure the text box is selected (i.e. displaying sizing handles)).

This is a small text box containing nothing in particular, but it illustrates the point.

Text may be entered into the box by clicking at the point where you want it to be inserted. To delete the box, click on it once to select it, then press the <Delete> key. (N.B. This option only appears to work if the box contains some text).

In some situations, it may not be possible to get the desired effect using a text box. Word contains a somewhat similar feature called a **Frame** which is a residual element from older versions, but which is still more appropriate in some situations (although Text Boxes generally provide greater flexibility). If you cannot get the effect you want using a Text Box, consult Help for more information on Frames.

Exercise 12.

Load the file **f:\word.doc**. Use the **File|Save As** option to save the file as **c:\temp\word.doc** – this will allow you to edit the file. Create a text box anywhere with the document. Retain the document for Exercise 6.

OTHER INSERT OPTIONS

Hyperlinks

You can insert a hyperlink to a web page by simply typing the web address (e.g. <http://www.may.ie>). The link address should appear underlined and be displayed in blue, indicating that it is a live link that can be used to access the address specified. (N.B. If this does not happen, the option may have been disabled. To re-enable it, click the **AutoFormat As You Type** tab in the **Tools|AutoCorrect** menu option and then select the **Internet and network paths with hyperlinks** check box.)

Footnotes And Endnotes

The **Insert|Footnote** option may be used to insert a footnote. Locate the cursor at the point where the footnote reference is to be inserted - e.g. here¹ - and then select **Insert|Footnote** option. A dialogue box will appear asking whether you wish to insert a footnote or an endnote. Select as required, then click OK. Word will jump either to the bottom of the page or the end of the document, and position the cursor for you to enter the text for the note. When you have finished entering the text, click anywhere in the document to return to the main text. Repeat for the next footnote – e.g. here.²

Word takes care of the numbering automatically (assuming, of course, that you do not deliberately disable the autonumbering option) – i.e. if you insert a new footnote between footnotes 1 and 2, the new note will be numbered 2 and the old note 2 will become note 3. You can delete a note by highlighting its number in the main text, then pressing delete. This will remove not only the number, but also the attached note. The other notes will be renumbered accordingly.

If you point at a footnote reference in the main text, the contents of the footnote will be displayed on screen.

Exercise 13.

Create a few footnotes in **c:\temp\word.doc**. Place the third footnote before the second to confirm that the auto-numbering works correctly.

Figure And Table Numbering

The **Insert|Caption** option may be used to insert captions as, for example, under the picture on pages 12. One advantage of using this option rather than typing the captions in manually is that Word looks after the numbering - e.g. if you insert a caption between Figures 1 and 2, Word will number the new caption Figure 2 and increment each caption number after it by 1. (Note, however, that if you re-sequence the figures, you will need to instruct Word to update the numbers. To do this, right click on the number that is incorrect and select the **Update Field** option from the pop-up menu. Repeat for each other incorrect number. Alternatively, you can update all the references in a document at the same time by selecting the **Edit|Select All** option and pressing the **F9** key. The fields are also updated automatically each time the document is opened).

Exercise 14.

Create four table captions: Table 1 A, Table 2 B, etc. immediately below one another anywhere within **c:\temp\word.doc**. Drag the caption for Table 4 so that it is positioned between Table 1 and Table 2. What happened to the table numbering? Use **Edit|Select All** and **F9** to update the references. Are the tables now numbered in the correct sequence?

¹ This is the footnote typed in at the place created by the **Insert|Footnote** option.

² This is a second footnote created in exactly the same way.

Cross-References

The **Insert|Cross-Reference** option may be used to create a cross-reference to some other part of the document. For example, the first line in the previous paragraph contains two cross-references to figures 1 and 2. If these figures were moved to a different location, the cross-references could be updated using the same methods as for captions.

It should be noted that the cross-reference numbers are live links – i.e. if you click on a number you will jump to the item that the number refers to.

Tables Of Contents

The **Insert|Index and Tables** option provides an easy method for creating a table of contents (provided you have used the Heading1, Heading2, etc. styles), a list of tables, a list of figures, or a list of equations (provided you have used the Insert Caption option), an index (provided you have marked the items to be indexed using Alt+Shift+X – see Help for further details), or a table of authorities (as in legal documents). This is an extremely powerful option.

Note that the page numbers created in the table of contents and lists of tables, figures and equations are live links.

Exercise 15.

Create a table of contents for c:\temp\word.doc. Move the table captions created in exercise 7 to different pages in the document, then create a list of tables. Click on page numbers in the table of contents or list of tables to confirm that the live links bring you to the item selected.

ADVANCED FEATURES

Although the above may appear bewildering, it represents only the tip of the iceberg with regard to the functionality provided by *Microsoft Word*. Some of the more advanced features include support for the following:

- Various Intellimouse features (scroll, pan, autoscroll, zoom, etc.)
- A built-in Thesaurus (under **Tools|Language**).
- Comparing different versions of the same document (under **Tools|Track Changes**).
- Saving different versions of a document in a single file (**File|Versions**).
- Printing envelopes and organising mailshots (under **Tools|Envelopes and Labels** and **Tools|Mail Merge**).
- AutoCorrect, AutoText, AutoFormat facilities (under **Tools|Autocorrect**).
- Automating repetitive tasks using macros (**Tools|Macros**).
- HTML editing - i.e. creating simple web pages (**File|Save As HTML**).
- Inclusion of hyperlinks to web documents elsewhere.

We will look at some other advanced features later in the course, but in the interim you are encouraged to explore any of the above features that you think may prove useful using the on-line Help.

PRINTING

The end product of most word processing operations is to print a hard copy of the document that you have created. To do this you first need to be connected to a printer. This can be done from within *Word* using the **File|Print** menu option. This will open a dialogue box in which the currently selected printer will appear in the top box. This will normally be the laser printer (referred to as 'Geography 1 (Mono PS)'). If you require the colour printer select 'Geography 2 (Colour PS)'.

It should perhaps be noted that *Word* in general will substitute a different font if the font selected is not supported by the printer. If you select a different printer, *Word* may reformat your entire document to show you how it will appear when printed. If this happens, do not panic. If you change back to the original printer, *Word* will again reformat the document. It is advisable to select the printer that you will eventually use at the beginning, so that you see how your document will appear.

The Print option allows you to make various other decisions about what to print, how many copies, etc. When you are happy with your selections, click the **Okay** button to send your document to the printer.

FURTHER INFORMATION

A useful guide to *Microsoft Word* is available in hypertext format by double clicking the '**Word Guide**' icon in the **Software Guides** folder on the desktop.

Word is covered in module 3 of the ECDL.

HOMEWORK

Use Netscape to search the World Wide Web for GIS-related sites. Identify the site that, in your opinion, provides the best source of downloadable GIS data. Identify a second site that, in your opinion, provides the best description of a project (or projects) which uses GIS. Write a short essay (about 500 words) containing links to the two sites and a summary of their contents, strengths and weaknesses. Use headings and sub-headings. Email your essay as an attachment called **Word??.doc** (where ?? is your initials) to **dennis.pringle@may.ie**.