When you first get access to a digital computer and you have connected all of the hardware together, you need to connect the computer (and if necessary the Monitor) to the mains. Before applying power, however, check that you do not have any floppy disks installed in disk drives. Switch on the monitor and then switch on the computer. You should hear a series of bleeps and groaning sounds, the floppy and hard disk lights should flash and messages should start to appear on the screen. If you have forgotten to remove floppy disks then this message will be an error message telling you that the computer has found a non-system disk. These checking and loading operations are performed by a 'built-in operating system' which comes ready loaded, in ROM, by the manufacturer. This software also tells the computer to search for The Operating System.

Operating Systems
Operating systems are software packages that tell the computer what to do and when to do it. There is a range of operating systems but for most PC users, DOS and Windows are the norm. Apple Macintosh computers use a system called Mac OS. New PCs normally come with Windows 95 ready loaded but older computers will probably have a version of DOS eg 6.1 and a version of Windows eg 3.11. Some very old computers may only have DOS.

DOS
DOS is an acronym for Disk Operating System. To communicate with DOS needs a shorthand lan
guage, which can fill a large book however a few examples are given below:

- **DOS Prompt.** If your computer has DOS loaded and is set up so that you must access Windows through DOS then the DOS prompt will appear on the screen when the built in operating system has completed its job. The DOS prompt will be shown as C:\>. This means that the computer is operating from the C drive ie hard drive and is in the base directory (I will look at directories in more detail later). To load Windows then all you normally have to do is type Windows, after the DOS prompt ie C:\>_Wind, and DOS will start to look at Windows.

- **Drives.** As was stated in last month’s article, each disk drive is identified by a letter eg the hard disk is given the letter C, floppy drives A and B and CD ROM is given the letter D. To change drives in DOS you type the appropriate letter followed by a colon eg C to change from the C drive to the A drive type A: after the DOS prompt and press Enter and to change from the A drive to the C drive type C: at the DOS prompt ie A:\>C: followed by pressing the Enter key.

- **Directories.** Directories are used to store collections of information. This can be data in files, software, or other directories. DOS allows you to access directories simply by typing Dir after the DOS prompt followed by Enter. However, the whole directory will be displayed on the screen and could cover several pages. Therefore, it is better to type Dir/p followed by Enter, which outputs one page (more pages may be output by pressing any key until all pages have been accessed) or by typing Dir/w followed by Enter, which prints in wide format. To change directories, type cd (followed by a space) and then the name of the directory and Enter. Eg to change from Windows to MSWorks: C:\Windows>cd MSWorks (Enter), C:\MSWorks>

### Running programmes in DOS

At the DOS prompt type the programme name. C:\MSWorks>Works

The programme (application) should now run.

- **Stopping a programme in DOS.** A programme can be stopped in a number of ways but is normally done by pressing Esc.

### Windows

Windows is the Windows operating environment differs from DOS in many ways. It is more ‘user friendly’, there are less words to remember and it can allow more than one concurrent task to be run ie multi tasking. Many books have been written to help users understand Windows and I can only give a brief summary here. As I said above, Windows can be selected automatically by your computer (using Autoexec.bat) or you may have to select it through DOS. Nevertheless, when Windows is selected, the screen will show the Windows logo and information about the version being used. Once Windows is fully loaded, your screen will show the programme manager window (rectangular shape) or a number of windows on top of the programme manager window. Each window may contain a number of icons ie pictures which indicate an application eg the MS Works window may show an icon which represents MSWorks. It is normal to run applications in windows by using the mouse eg:

- **Point the mouse pointer at the icon.**
- **Double click the mouse button.** The application should now run. The application can be stopped in two main ways.

- **Point the mouse at the small rectangle in the top left corner of the open window and double click the mouse button.**

- **Point the mouse pointer at File on the menu line. Then point at Quit and double click.**

The final action with any computer system is shutting down the system before switching off. This action is important as turning off the computer without performing

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shutdown can cause irrecoverable damage to disks. If the computer is running an application then shut down the application. Then shut down Windows by pointing at the rectangle in the top left corner of the programme manager window and double click or pull down the file menu, as above, point to Quit and double click. Windows will ask if you really want to quit and you agree by pressing Enter. The computer will then show the DOS prompt and you can switch off the power to the computer, monitor and any peripheral devices (printers etc) and turn off the mains supply.

Windows 95
Windows 95 is meant to be easier to use than previous versions of Windows and it has the added advantage that is does not need DOS to run, although it will run DOS programmes. It also comes with 'free' applications software ie a word processor, an address book, a calendar and a drawing package. There is less pointing and clicking in Windows 95 and there are more icons (meaningful pictures) that you can use. It allows you to use longer filenames of up to 255 characters as against 8 in previous Windows versions. many processes are automated and operate 'in the background' and it automatically looks after the computer hardware. All of this does come for nothing, however, and if you want to upgrade to windows 95 then you may have to upgrade your hardware. Windows 95 needs at least 8 Mb RAM, at least 120 Mb Hard Disk space and a 486DX or Pentium processor.

Once you have installed Windows 95 and switched on the power the computer will make similar noises as with DOS and Windows. Once everything has stopped and Windows 95 is running, the screen will show the Welcome to Windows 95 window with a My Computer icon and a Recycle bin icon on the desktop. The most important icon is the Start icon. Pressing Start gives you access to a series of pop up menus so that you can run applications. You can shut down Windows 95 by clicking the Shut down button. This opens a window which asks if you are sure you want to shut down and has Yes No and Help buttons. Clicking on Yes will shut down Windows 95. Windows normally comes installed on new computers, however if you decide to update an existing Windows package it costs approximately £50 + VAT.

Applications Software
Applications software allows you to use the computer to do a task or tasks. These can be single applications such as word processors, databases, spreadsheets, games, multi applications such as MSWorks, MSOffice and Word Perfect Office, all of which have word processor, database and spreadsheet in the one application and specific application programmes such as TRIMS and Greenware and Office 2000. Each application comes with its own tutorial and Help features but I will try to describe the main features of several packages.

MSWorks
MSWorks is a straight forward office package which includes a word processor, database and spreadsheet. It comes in both DOS and Windows versions and costs approximately £80 + VAT. MSWorks needs a 386SX computer with at least 4 Mb of memory and 14 Mb of Hard Disk space available. DOS 3.1 or later and Windows 3.1 or later. Also available for Windows 95

Word processor
Most word processors are very similar. When the word processor is selected, you are faced with a blank piece of paper on which you can type your information. However certain features are set by the computer. These features are known as default settings and include margins, the type of print character (font), the size of print and page orientation. These settings may be altered so that you can customise your documents. Once you have typed your letter, you can use the spell check facility, make corrections and finally print the document. Before printing however, you should ensure that the document is oriented correctly ie portrait or landscape and that the printer settings match the document settings. Remember, that your document must be stored, usually on a floppy disk, before switching off the computer as it will be lost.

Databases
Most data bases are similar and have similar features. They are used to hold data that has the same features eg machinery servicing records, address lists and trade contacts. Before any data base is used, you must decide what data it is going to hold and sketch out a plan.

When you are ready, you can then input the layout into the data base. Each 'box' is known as a field and each set of fields is known as a record. Once the record has been inputted, you can then put data into records. Data bases allow you to search for records, search for data in records, match records sort records and print information from records. In MSWorks and most other office packages, you can link data bases with the word processor to produce mail merged documents, land labels.

Spreadsheets
Spreadsheets are used to hold data in columns and rows. There are many uses of spreadsheets but the most common use is for the storage and manipulation of financial records. Spreadsheets allow you input data, carry out calculations, print data and display information in graph and bar charts. MSWorks also contains Works Wizards. These are commonly used features that have been set up by the programmer which may save you time.

TRIMS
TRIMS is a Grounds Management software package that was developed in the USA. It was designed specifically for Golf Course Managers and, although available in DOS and Windows versions it is normally supplied in Windows format. Main features include:

- Schedule of Events Calendar, Safety Data Sheets
- Calculator, Emergency Telephone Directory
- Water Management, Weather Database
- Personnel Records, Inventory and Purchase Orders
- Fuel Inventory, Budget Monitoring
- Chemical Records, Soil Nutrient Charts

Maintenance Records
Further details on TRIMS and a demonstration disk may be obtained from BIGGA HQ. TRIMS costs £1250 (for Windows version), which includes delivery charges. Installation, basic training and one year's support can be arranged through BIGGA. Hardware requirements are 386, 486 or Pentium processor, 4 Mb RAM (8 Mb recommended), 25 Mb available on Hard Disk, Windows 3.1 or Windows 95, VGA display, Mouse and Windows compatible printer.

There are other grounds management programmes available. Greenware, which is available from Veenstra Adviesburo Golfterreinen, Whilingdijk, 1633 Avenhout, Netherlands, is similar to TRIMS however, we currently do not have any feedback on its operation.

Club 2000
Club 2000 is a golf club administration package. Used mainly by golf club secretaries, this software incorporates membership control, subscriptions, payrolls, integrated accounting and project planning. Club 2000 costs £1250 + VAT for the full system with annual software support costs of £245 + VAT. Full details may be obtained from Club Systems International 34/36 Fairacres Road, High Lane, Stockport, SK6 8JQ, telephone 01663 762499.

There are many software packages that may be of use to Golf Course Managers. More are being developed as more course managers become computer literate and are having hardware installed. It is difficult to gauge the advantages and disadvantages (and disadvantages) of using a computer to assist in day to day management of the golf course when you are unfamiliar with the hardware and the software supplied or inherited. However, as more greenkeepers become familiar with computing, hardware and software, the range of software management tools designed specifically for greenkeepers will increase.

In this second article, I have looked at how you can make the computer work for you by looking, briefly, at operating system software and applications software. The only way to become completely familiar with software is by attending a training course, such as the BIGGA Supervisory Management Courses at Aldwark Manor and around the BIGGA regions and then to practise using the hardware and software.