

## Redditch U3A Computer Users Group - Computer Maintenance

### What are we trying to achieve?

- 1) Faster-running machine  
Quicker start-up. Intensive tasks, e.g. graphic editing, complete quicker
- 2) Less wasted disc space  
Can store more on a given disc. Also contributes to faster running
- 3) Quicker retrieval of existing files  
Quicker start-up. Quicker launching of programs
- 4) Less prone to virus infection, fewer program and system crashes  
Both of these problems can damage data on your computer, infect a friend's computer or crash the computer making it difficult to recover proper operation.
- 5) Maintenance of the Computer Hardware

## Delete temporary internet files, cookies and browsing history

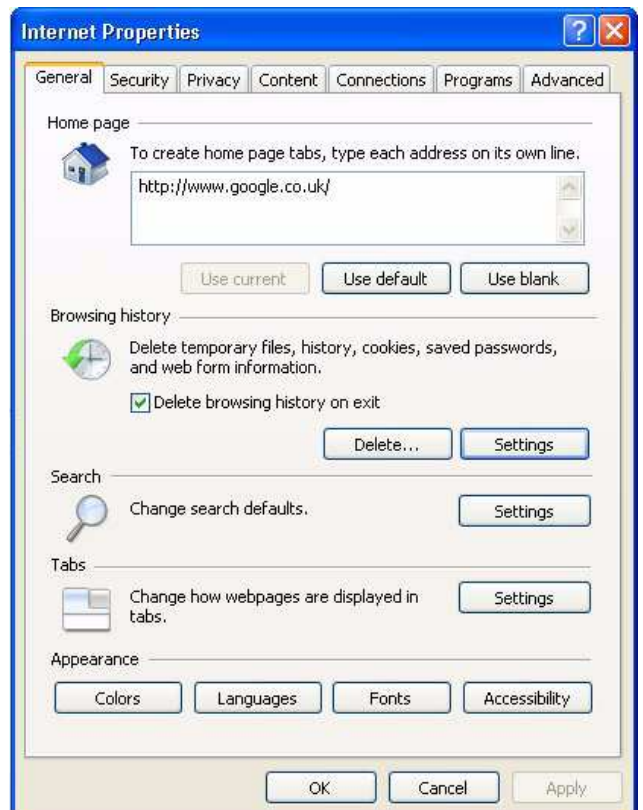
This will contribute to faster running, reduce wasted space and improve system security.

All these files accumulate while browsing the Internet and can be deleted without danger to the computer. You can set up options which will instruct the machine to clear these on exit from the Browser, or on a time-scheduled basis. Alternatively the machine will clear them on specific request.

You can control the operation of Internet Explorer 8 via Start menu/Settings/Control Panel/Internet options which will bring up this screen:-

From here you can clear cookies, temporary internet files and browsing history, and specify they should be cleared on browser exit.

Alternative ways to clear these folders will be given later (deleting unwanted files).



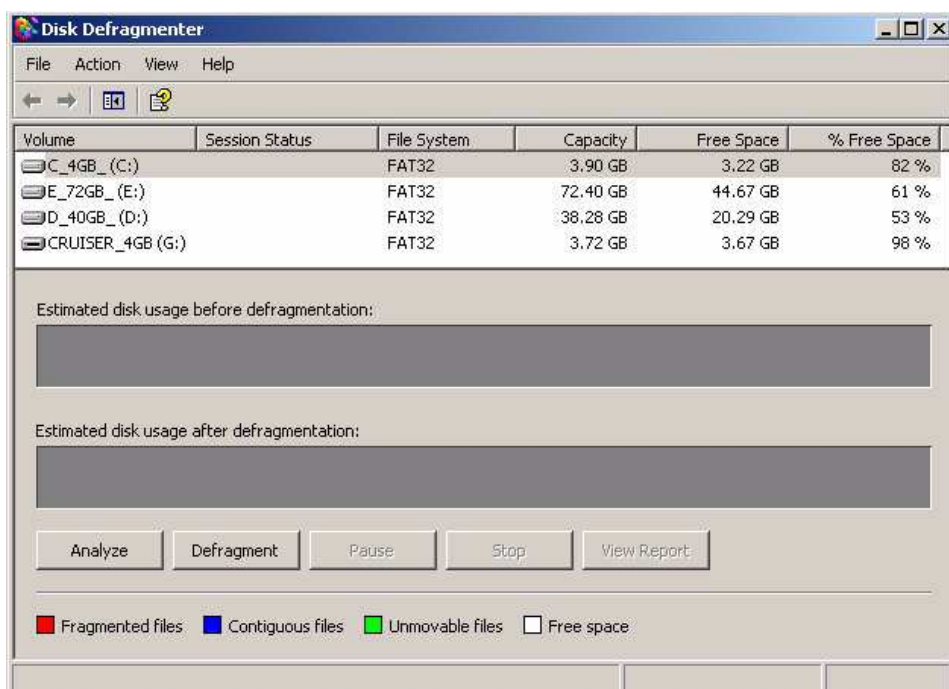
## Defragment (defrag) the Hard Disc

This important process will speed up the process of reading from/writing to the disc and may free up a small amount of disc space. There is a Windows tool that will do this for you. Other free third-party programs will do it better (e.g. WinContig)

To access the standard Windows XP defrag tool open 'My Computer'. Right-click the disc you want to defrag (probably 'C:') and select 'properties'. Click on the 'tools' tab and select 'Defragment' to open this screen:-

Now click on the 'C:' disc line and press 'defragment'. You should not turn the computer off until it has finished (which may be some hours!). If necessary press 'Stop' then wait till it finishes.

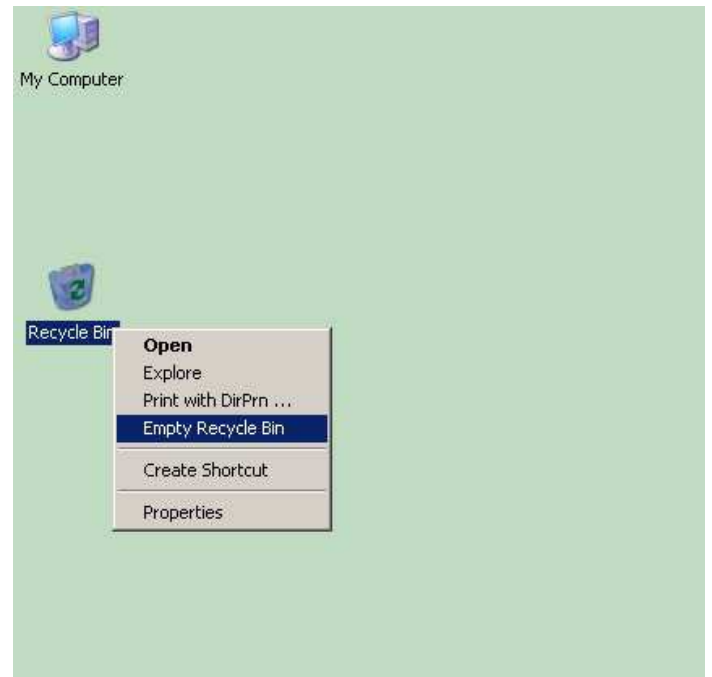
Windows XP runs defrag automatically ('in the background') when it sees the computer is not heavily used, but manual operation is often also of benefit.



## Empty the recycle bin

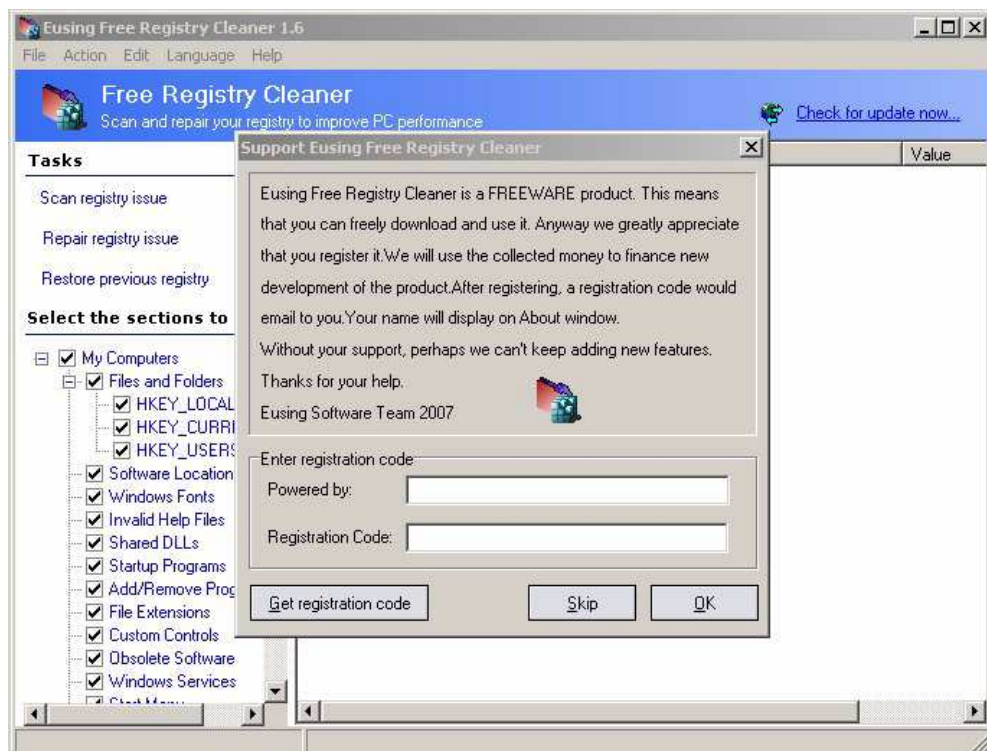
Frees up storage space and makes the machine run (a little bit) quicker. Note that deleted files normally get moved automatically to the recycle bin, though this can be changed, and can then be recovered if required. Recovering files from an empty recycle bin is harder [advanced topic!] but not impossible, so take some care with sensitive information.

To empty the recycle bin, right-click it and select 'Empty Recycle Bin'.



## Run a 'Registry Cleaner'

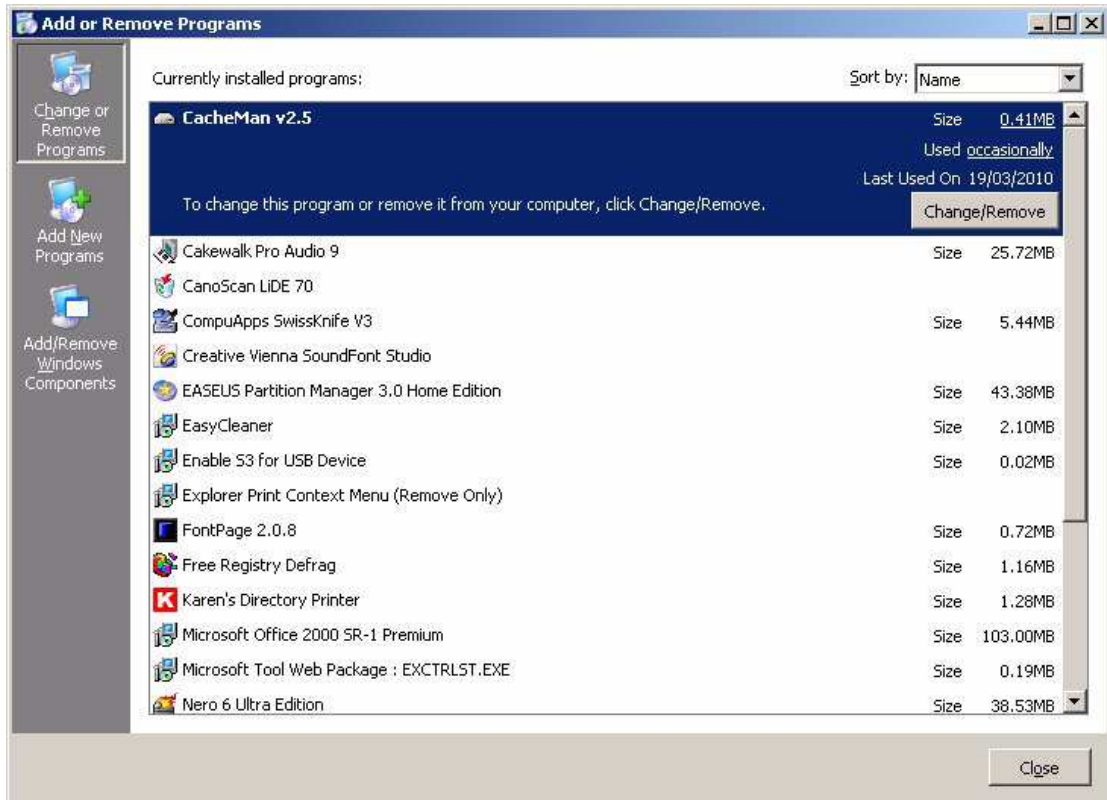
The registry is a section of memory which Windows uses as 'notepaper' and contains all sorts of stuff. It has a significant tendency to accumulate out-of-date rubbish, slowing the machine down. Working with the registry is an advanced topic, but there are free programs which make the task of cleaning the registry fairly fool-proof.



You can use the Eusing free registry cleaner to remove most of this junk. First install the program and run it. Dismiss the registration box shown here in grey by clicking 'skip'. Then click 'scan registry issue' in the main window. Wait (possibly a few minutes) till it's finished, then click on 'repair registry issue'. The first time you run this type of tool you may be astonished how many errors it picks up for you.

## Remove unused programs

These take up disc space and contribute slightly to reduction in machine speed. The Windows XP 'Control Panel' has a fairly painless (but not always completely effective) way to do this. Access this function from Start Menu/Settings/Control Panel/Add or Remove Programs to bring up this screen:-



## (Remove unused programs - continued)

### When can I do this safely?

I frequently come across new and possibly interesting programs, and am forever installing them to see if they offer some benefit. If I find they are not of value I make sure I uninstall them - using the above procedure or another - so as to minimise the amount of clutter, wasted space, unused icons, etc. on the computer.

If you are not sure what a program does, or you're not sure whether you should remove it - then don't.

The process of re-instating a deleted program (called 're-installing it') requires access to an original CD, or its specific installer program (which is not the same as the program you've just deleted).

Data and System backup procedures (to be presented later) will give you some protection against the potential dangers of these actions.

## Compress (zip) collections of data files not frequently accessed

This will usually save disc space - sometime a great deal of disc space! - and as a result can sometimes speed up the machine during its ordinary operation and for data transmission. However it will slow it down during the compress/decompress action.

To compress files, run WinZip. Drag and drop files to be compressed into the Zip window. For the first file you must specify the name for the compressed file. You can drop a folder full of files into the Zip window if you wish. Close the Zip window once all are compressed.



To recover compressed files, double-click the compressed file. The same window will open. Select a file for de-compression and drag it to e.g. the desktop. Note the original (compressed) file is still present in the Zip file.

A presentation specifically on File Compression, also discussing other features and benefits, is available for inclusion later in the calendar.



## Delete temporary and out-of-date files

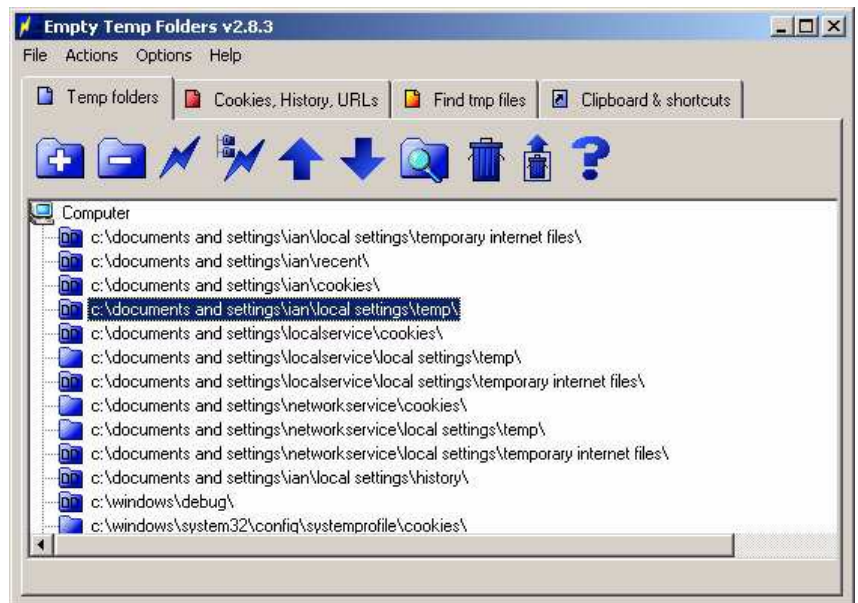
Many programs will generate temporary files during their work, and some will not tidy up afterwards. Tools exist which will automatically delete these temporary files and other left-over rubbish. Some experience is needed to identify such files.

'EmpTemp' is a free program which conveniently removes unwanted files and folders (once you've identified them). Use the '+' icon to browse for a folder to add to the list for deletion. Then click on the fourth icon (2nd lightning flash) to empty all listed folders. Similarly select the 'Cookies' tab to delete Internet cookies and Browsing history.

If you can't persuade your Internet browser to delete temporary files, you may be able to determine where these are kept, then add this folder to the EmpTemp list of folders for deletion.

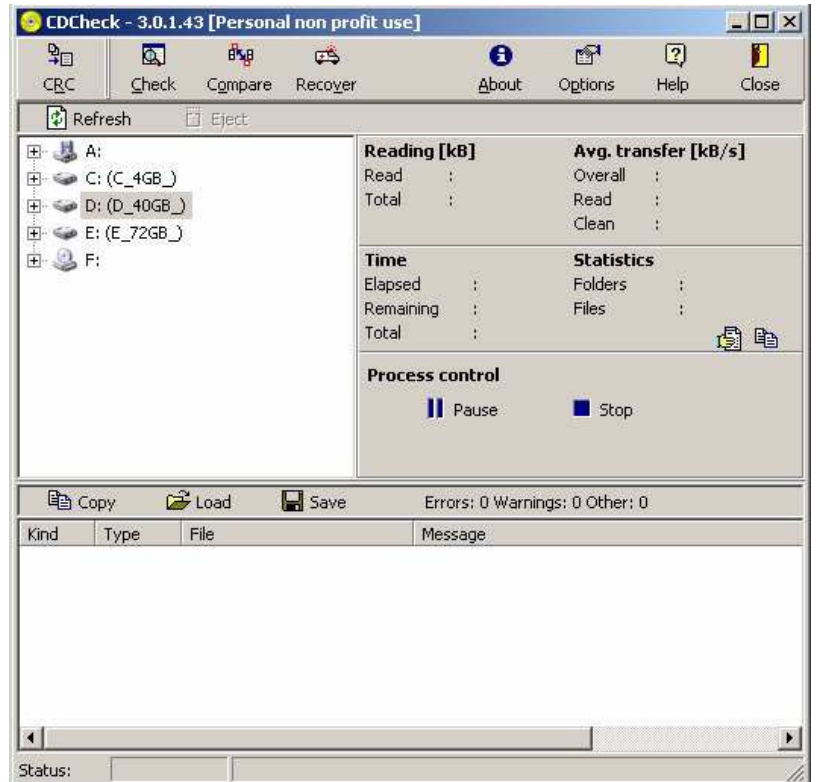
There is an associated program 'EmpRunner' which allows you to set up an automatic time-scheduled operation of EmpTemp.

**DON'T ADD FOLDERS TO THIS LIST UNLESS YOU'RE SURE IT'S SAFE TO DELETE THEM**



Consider moving old files out to CD/DVD for archive if they're not often referenced

This is part of a general 'data backup' strategy anyway. Once they're safe on CD/DVD the originals can be deleted from the hard disc, freeing up space. Tools exist (example 'CDCheck') which will confirm a CD/DVD is an accurate copy of a set of files on the hard disc. Some DVD/CD burners also offer this feature.



## Regularly run system-wide malware scans

Malware is an umbrella term for a variety of malicious code (including viruses and spyware) which pose a security threat as well as potentially slowing down the machine. We will be presenting a complete session on 'Malware' at a later date. Many of malware scanners will run in the background automatically. It's still a good idea to do a manually-selected scan from time to time.

## Regularly run definitions updates for these malware scanners

New viruses appear all the time. Virus scanners work most effectively if they have been told key details of the viruses involved, and their designers work continuously to keep this information up to date. Your virus scanner needs to work from the latest version of these 'virus definitions' so you need to keep the program updated. Most scanners have an 'auto-update' option which does the work for you (though it also slows down the machine!!) Check yours has this option selected.

Accept updates offered for your operating system (Windows, etc.) and for the installed programs

Astonishing though this may seem, most software is distributed (i.e. sold ) while it's still full of errors. Some of these errors make the program more susceptible to virus attack. Accepting these (free) updates as they become available means you minimise the risk of virus infection and program malfunction.

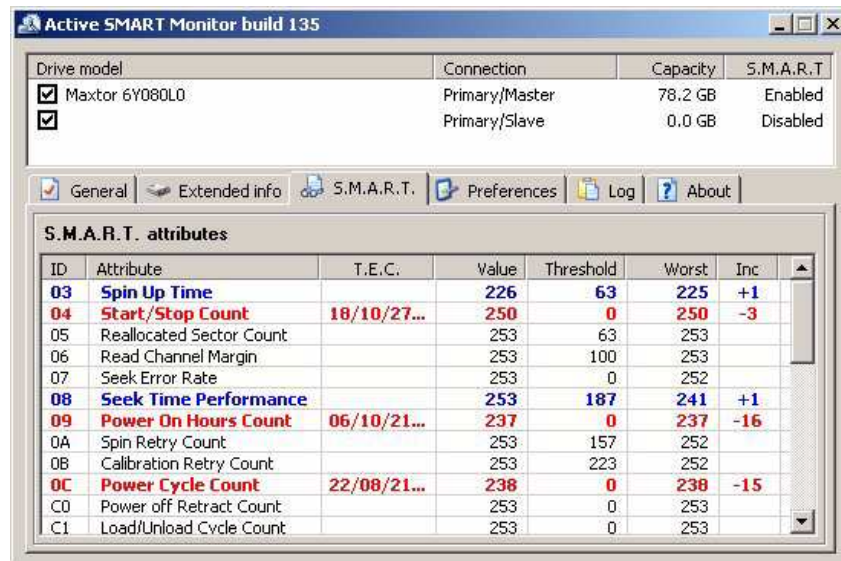
## Maintenance of Computer Hardware

- 1) Day to day cleaning (only with power OFF)
  - No liquids other than damp cloth
  - No abrasive cleaners on plastic screens
- 2) CMOS battery replacement
  - May need to back-up CMOS settings first (to be covered in a later presentation)
- 3) Printer cartridge replacement
  - Keep printer and cartridge separated for as short a time as possible
  - Don't touch gold contacts on cartridge
- 4) Printer head cleaning
  - See manufacturers instructions. Use only when needed (e.g. streaky printout)
  - since the procedure uses ('wastes') ink.
- 5) VDU screen and scanner platen cleaning
  - With a damp cloth (only while power turned OFF)
- 6) CD / DVD cleaning
  - Use a damp cloth with a small amount of washing up liquid, then rinse in clean water. NO abrasives. Wipe centre -> perimeter, not round-and-round.

## Hard Disc Monitoring

Failure of the hard disc (which is one of the more 'mechanical' components of your computer) will cause complete system failure and total loss of all your programs and data unless you've diligently backed them up (a topic for a future presentation).

Programs exist which will 'predict' the failure of a hard disc by monitoring key parameters of its operation - data you don't normally get access to. You should note that this 'prediction' has a significant degree of uncertainty to it and should not be relied on. It may give you plausible indication that the disc is reaching the end of its life and that a catastrophic failure may occur soon. You should be doing system and data backups independently of this information.



The screenshot shows the 'Active SMART Monitor build 135' window. It displays drive information for a Maxtor 6Y080L0 drive, including connection type (Primary/Master), capacity (78.2 GB), and S.M.A.R.T. status (Enabled). Below this, the 'S.M.A.R.T. attributes' table is shown, listing various attributes with their current values, thresholds, and trends.

ID	Attribute	T.E.C.	Value	Threshold	Worst	Inc
03	Spin Up Time		226	63	225	+1
04	Start/Stop Count	18/10/27...	250	0	250	-3
05	Reallocated Sector Count		253	63	253	
06	Read Channel Margin		253	100	253	
07	Seek Error Rate		253	0	252	
08	Seek Time Performance		253	187	241	+1
09	Power On Hours Count	06/10/21...	237	0	237	-16
0A	Spin Retry Count		253	157	252	
0B	Calibration Retry Count		253	223	252	
0C	Power Cycle Count	22/08/21...	238	0	238	-15
C0	Power off Retract Count		253	0	253	
C1	Load/Unload Cycle Count		253	0	253	