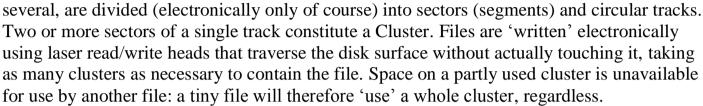When you create a new file on your computer and want to save it you press 'File' and then 'Save'. A dialogue box appears and you give it a filename. You decide where it is stored by nominating or creating a folder. Then you press Enter. The file is saved to the disc and the computer knows where to find it.

How does it all happen?

Your hard disk is formatted so that the computer has a 'map' of the drive. The circular disk platters, of which there are a stack of several, are divided (electronically only of course) into sectors (segments) and circular tracks. Two or more sectors of a single track constitute a Cluster. Files are 'written' electronically using laser read/write heads that traverse the disk surface without actually touching it, taking as many clusters as necessary to contain the file. Space on a partly used cluster is unavailable for use by another file: a tiny file will therefore 'use' a whole cluster, regardless.

Each cluster has an address reference that is stored in an index file on the disk. The file is known as the File Allocation Table (FAT) and records the folder structure you have created and remembers in which cluster(s) each file is stored so that it can be found. (This FAT is also copied to another part of the disk just in case the original becomes corrupted.)

The FAT is updated every time a file is changed. If you amend the file the original is overwritten when you save it. If your file is now larger and needs more space, the FAT is adjusted to take note of the additional space. By reference to its FAT file the computer knows which clusters are available for writing to and which are not.

If you drag and drop a file from one folder to another on the same disk, the computer simply updates the FAT file to record the change. It doesn't actually move the target file at all, but the filename now appears in the new folder. (Note that if you drag and drop to a different disk, the file is not moved, but copied to the new disk and added into the new disk's FAT.)

When you delete a file it is 'sent' to the Recycle Bin. Again, only the FAT is adjusted and the file stays put. If you decide to restore the file, then the computer simply reverses the change to the FAT.

If you delete the file from the recycling bin, the FAT is simply adjusted to indicate that the space occupied by the file is now available to be written on. The file is still there and can be retrieved with specialised software until such time as the clusters are over-written.

The next meeting is on Tuesday 28th February 2012 at All Saints Lesser Hall, Victoria Square. Penarth. 7.30 pm for 8.00. We will take a look at an E-book reader. (A Kindle) For more information ring Howard on 029 20708439.