Visual Resource Centre
School of Humanities

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Using digital images in teaching and learning
Managing Image Files

Once you begin to get more than a few images stored on your computer, it can become difficult to find a particular image again, either because you can't remember where you stored it or because there are a lot of images to scroll through. Here is a selection of methods that you can use to manage your image files so that you can find them again more easily.

Using Filenames and Folders

Filenames

Using meaningful filenames that describe your images is the simplest method of organising your files, and may be good enough if you don't anticipate your collection growing very large. For example, if you have a collection of photographs of buildings, you could ensure that each filename includes the name of the building and its location. When you want to find pictures of the Coliseum in Rome, for instance, you can use the Windows search facility (or the Mac Spotlight feature) to look for files that have the word 'coliseum' in the filename – all the relevant images will then be found.

Most computer systems will now allow the use of long filenames rather than the original 8 character maximum, so it is possible to create some very descriptive filenames (up to 260 characters, although this includes the file path as well as the filename). However, too many characters can get a bit unwieldy, particularly when viewing a list of your files onscreen, so it is good practice to limit their length to something manageable. There are also problems with long filenames when they are transferred to CD-ROMs, so it is good practice to restrict the length of filenames to a maximum of 64 characters, especially if you think you will be likely to burn images to a CD.

- Apart from filename length, there are several other conventions that should be followed when naming files in order to avoid compatibility issues:
- limit characters used in filenames to a-z, 0-9, underscore and hyphen – other characters may cause problems when switching between programs
- don't include spaces within the filename - either leave out the spaces or use an underscore or hyphen instead (eg "map_of_spain.jpg")
- don't use a full stop in a file or folder name except before the file extension (eg map.jpg).

Folders

A further level of organisation can be introduced by using a hierarchy of folders to organise your images. These could be based on any set of categories that is relevant to you but it should be logical and consistent. For example, some students have a folder for each module they are taking, and within this they have folders for each assignment. Alternatively, your folder structure

may reflect the contents of your images, such as date of creation of an artwork, or a geographical location: for example, images of architecture could be organised into country folders, and further subdivided by cities and then by particular buildings.

Browsing files and folders

Apart from searching for images by filename, it is possible to browse through thumbnails of your images to find the one you need. The simplest way of doing this is just to use the thumbnail view in Windows Explorer to view the contents of a folder: select *View* from the menu bar and click on *Thumbnails* or *Filmstrip*. If you use a Mac, click on *View* on the menu bar and select *As Icons* from the list to see thumbnails of images within a folder.

Alternatively, on a Windows PC, you can use Microsoft Office Picture Manager* to collect shortcuts to all your image folders in one place so that you can quickly move between them to browse your image collection. This program also makes easy to move files between folders,

perform some basic editing operations, and copy selected images directly into Microsoft applications such as Word and PowerPoint.

*Microsoft Office Picture Manager is available on all Windows PCs with Office 2003 onwards installed. It can be found by clicking on the Start menu, pointing your cursor at All Programs, Microsoft Office, Microsoft Office Tools, and then selecting Microsoft Office Picture Manager.
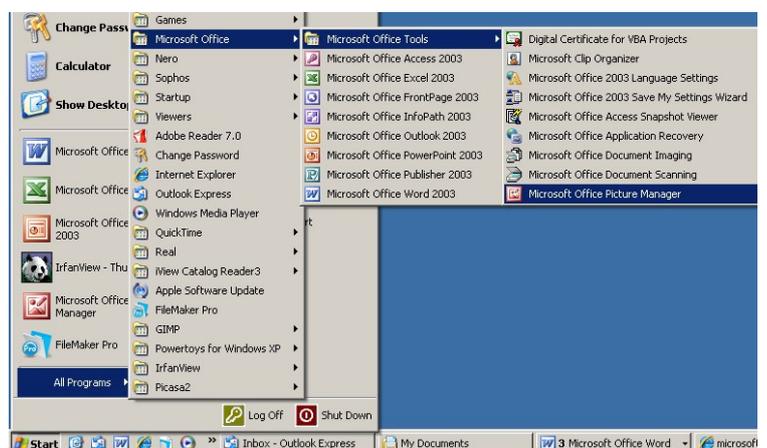
Limitations of using filenames and folders

There are a few limitations in using this method of file organisation:
- Each image must have a unique filename, which may be difficult to manage if the number of files gets too large: even if files are in two different folders, it is still good practice not to duplicate filenames, to prevent compatibility issues if you move files around within your folder structure.
- It can be difficult to think of a good folder structure that suits all of your images.
- You may end up needing to put an image in two folders if it relates to two different themes in your structure, which can waste space on your hard drive.

However, if your image collection is never going to be very large, this method of organising image files may be all that you need.

Software solutions

Once your image collection begins to get larger, you may need to find more sophisticated methods of organising the images. Rather than just relying on the file or folder name to identify your images, the software detailed in this section will allow you to add some basic metadata to your images (metadata is information that describes your images, such as keywords). You can then search for all images that have, for instance, a certain keyword, regardless of where they are stored on your computer. As each image can have multiple keywords, this gives a lot of

flexibility in finding your images, although the trick is to ensure that you are consistent in how you keyword your images!

Some systems will also allow you to create 'virtual albums' – collections of images that share a common theme. This allows you to put an image into multiple sets to aid retrieval, without having to actually duplicate the image on your hard drive, thereby saving you valuable storage space.

There are lots of software options available, from free software to more expensive packages, including some that also offer basic image editing tools. What's right for you will depend on your needs, but the following sections will give you a basic overview of some of the options.

One thing to watch out for when choosing a system is whether it will allow you to save the keywords you assign if you move to another system in the future. Some systems will write the information directly into the image file, but others don't have this facility and so you may lose any keywords you have applied.

Free personal software

Picasa photo organiser (picasa.google.com)

Free to download from Google (but only available for Windows), this software provides an easy to use interface to organise your collection of images, as well as offering some basic image editing features. You can assign keywords and captions to your images, which can then be exported into JPEG images to be read by other programs, such as Photoshop. You can also create virtual albums (see above), giving you a lot of flexibility in organising your images in a way that suits you.

A summary of some of the key features of Picasa follows:

- For organising images, Picasa will locate images on your computer, sort the folder structure by date or name, move images around between folders, create virtual albums, rename images (singly or as a batch), search for images by keyword, label, caption or filename.
- Metadata can be added as keywords and captions, which can be written to the image and read by other programs, such as Photoshop
- When editing images, Picasa can crop, straighten, and rotate images, adjust their colour, contrast, highlights and shadows, apply red eye correction and other filters, such as colour cast removal.
- Picasa can resize images before they are saved to a folder or sent by email, as well as printing contact sheets and creating static web pages.
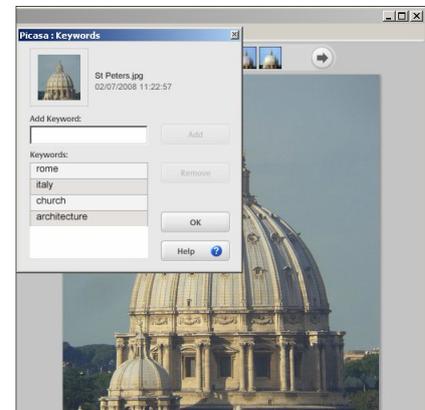
Microsoft Photo Gallery

Microsoft Photo Gallery is an image organisation tool that is standard on Windows Vista or available as a download for Windows XP (http://get.live.com/photogallery/overview). It can be used to browse your images, as well as organise them by keyword or date. Its key features are:

- To organise images, Photo Gallery can locate images on your computer, organise them by date, and they can be browsed by date, keyword, or user-assigned rating.
- Metadata can be assigned to images through the use of keywords (tags).
- Limited image editing is available, including the ability to crop, adjust exposure and colour, and apply red-eye filter, as well as create panoramas from multiple images.
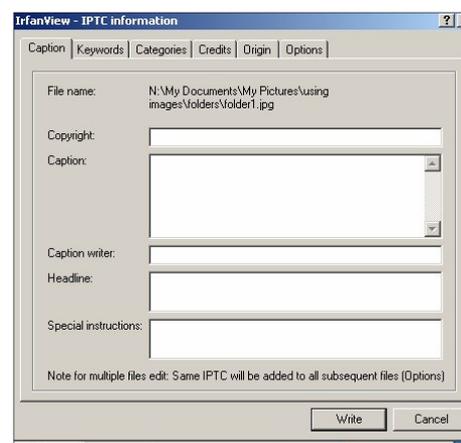
iPhoto

If you are working on a Mac, you could try iPhoto, the image management system included with more recent versions of the OS X operating system. It has the ability to organise your images into virtual albums, including a useful feature called 'smart albums' that automatically adds new images to an album if they meet certain pre-defined criteria, such as a keyword. Its key features include:

- To organise images, iPhoto creates albums, smart albums and folders, offers browsing by keyword, and can search for image title, filename, keyword, date or comment.
- Metadata – titles, keywords and comments can be assigned to images to aid searching.
- To edit an image, iPhoto offers basic image editing features, such as rotate, straighten, crop, resize, adjustments to colour, brightness and contrast, and sharpening.

Irfanview (www.irfanview.com)

Although it is not an image organisation tool, Irfanview can write metadata, such as keywords, into JPEG images through use of the IPTC standard (a metadata standard used by the photographic industry for embedding text data, such as captions and keywords, into image files). This data can then be searched via the Windows search facility, or the Mac Spotlight feature. It is free to download for personal, educational or charity use, and offers comprehensive image editing features and a thumbnail browser. A summary of its key features includes:

- For viewing images, Irfanview can view thumbnails, which can be sorted by filename or date, and print single images or contact sheet of group of images.
- Metadata can be read and written to JPEGs using a plug-in (this needs to be downloaded from the IrfanView site separately).
- To edit an image, Irfanview can crop, rotate, straighten and sharpen images, rename files or convert them to a different file format (either singly or as a batch), use its Paint tool to add text or other annotations to an image, create panoramas by joining images together, adjust colour, brightness and contrast, and apply filters such as red eye correction.
- Images can be imported directly from a scanner.

Online photo management services

Online photo management sites are web sites that allow users to upload and store their images online, providing an easy way to share images as well as being a useful backup facility. Popular sites include Flickr, Photobucket, and Picasa Web Albums, but there are many more. Once uploaded, users can add descriptive data to their images, assign keywords (or 'tags'), and organise them into sets or albums so that it is easier to browse through your image collection. In addition, images can be shared with others: either with everyone, restricted to just your friends, or kept completely private.

However, there are several things to watch out for when using online photo management web sites:

- Although it is possible to have a free account, these are usually restrictions on the facilities that are provided, including the amount of storage space available and whether you have access to all the images you upload (with the free Flickr account, you can only access the last 200 images uploaded). If you want the full range of features, you will usually have to pay a small subscription.

- If you add metadata to an image, it is likely to be difficult to export it if you want to move the images to another service at a later date.
- If you make your images publicly available, you do not have any control over who has access to them or what they subsequently do with them.
- As the images are stored online, you are dependent on Internet access to view them.
- There may be restrictions on whether you or others can access your original photos at full size, or if you are limited to the automatically resized image that the service creates on upload.
- There are usually limits on the amount of storage space that you are allocated on these sites, so it is a good idea to resize any very large image files before uploading them (for example, some cameras produce very large file sizes). View the section 'Understanding Digital Images' to find out more about image sizes, and then look at 'Modifying Images' to find out what software you can use to resize your images easily.

TASI (Technical Advisory Service for Images) has written an advice document on using Flickr to organise an image collection, which contains a lot of very useful information: http://www.tasi.ac.uk/advice/using/flickr-organising.html.

Commercial image management systems

There are plenty of commercial options for managing image collections, ranging from under £50 to several thousand pounds. There is not room here to give a review of each of the options, but you could have a look at the TASI web site to see their reviews of some of the available packages (http://www.tasi.ac.uk/advice/delivering/imsoftware.html), or follow the links below to look at some of the less expensive options.

ACDSee Photo Manager - www.acdsee.com (Windows only)

Cerios Software ThumbsPlus - www.cerious.com (Windows only)

Extensis Portfolio - www.extensis.com (Windows and Mac)

FotoWare FotoStation Pro - www.fotoware.com (Windows and Mac)

Microsoft Expression Media - www.microsoft.com (Windows and Mac)

Photools iMatch - www.photools.com (Windows only)

Further information

Further advice on managing image collections is given on the TASI web site:
www.tasi.ac.uk/advice/delivering/ims2.html.