

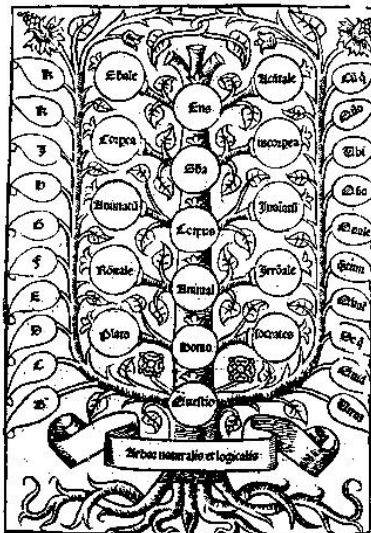
More about graphics

SET09103 Advanced Web Technologies

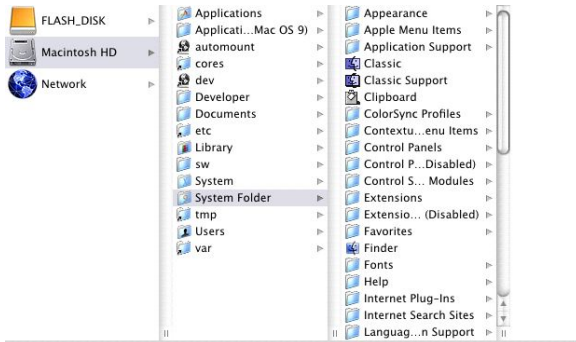
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2008

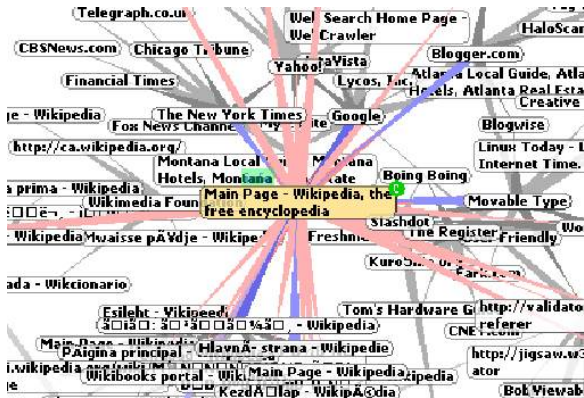
Tree of Porphyry (Lull's version, 1305)



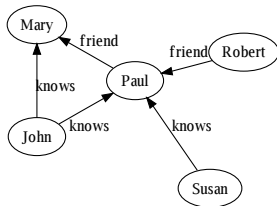
File hierarchy display (MacOS)



Spring Embedder Graphs - TouchGraph



Social Networks



6 degrees of separation

Do you know the Prime Minister?

Do you know someone who knows the Prime Minister?

Do you know someone who knows someone who knows the PM?

...

The claim: everybody is connected to everybody else by at most 6 degrees of separation.

⇒ It is a **small world**.

Small-world networks

- ▶ Small world effect: small average node-to-node distance (“6 degrees of separation”)
- ▶ Clustering:
your friends also tend to be friends among each other
- ▶ Hubs and resources

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Google's PageRank:

pages that are more linked to get a higher rank.

ImageMagick

A software suite to create, edit, and compose raster graphics.

- ▶ convert: for converting between formats, changing size, etc
- ▶ identify: for describing image formats and metadata

Available for free for PC, Mac, Linux.

ImageMagick's convert

Reducing file size:

```
convert -resize 800 file1.gif file2.gif
```

Combining several jpgs into a pdf and reducing size:

```
convert -resize 500 -density 70 *.jpg result.pdf
```

Creating a favicon:

```
convert favicon.png -resize 16x16! favicon.bmp  
mv favicon.bmp favicon.ico
```

Image metadata

Magic number: historically in Unix, a number that identifies the file format and is part of the file's header information. The purpose was so that double clicking the executable would start the right program without relying on the file's extension.

These days many file types contain a header with metadata about the file.

JFIF/EXIF data

Jpeg files contain two types of header information: JFIF and EXIF.

Examples of jpeg metadata:

- ▶ colour information
- ▶ height and width
- ▶ camera type
- ▶ file creation date and time

ImageMagick's identify

Print filename and date:

```
identify -format "%f %[EXIF:DateTime]\n" filename.jpg
```

Print all of the metadata:

```
identify -verbose filename.jpg
```

Metadata can be removed with `convert -strip`