Research Skills

Advanced MSc and PhD Students

http://www.cs.bham.ac.uk/~jxb/rs.html

Lecture 4
Organised and Systematic Literature Search

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Summary of previous two lectures

• Importance of literature search and review
• Forms of scientific dissemination
• Search strategies

• Changing scenario for databases and search
• Overview of search engines and search techniques
• Use of keywords
• Access to university resources
Literature searching & review

A long process that can last months or years

• Not always continuous in time

• The amount of information gathered increases with time

• It can change direction in time or simply focus on different aspects (sub-field) of the general topic
Literature searching & review
how it starts
Research Skills

Literature searching & review
how it might end up
Literature searching & review

→ It becomes difficult to

- remember papers, terms and keywords, authors already reviewed
- know what was found already and what still need to be searched
- retrieve again a paper that has been found and read earlier

If one doesn’t remember all the papers and terms, doesn’t have a clear picture of what was found and not, has difficulty fetching papers already found

→ literature search is unsystematic and sub-optimal
Organisation and systematic search

A **systematic literature search** can be more easily performed if the **incoming material is kept well organised**

- What keywords have I used so far?
- How many papers did I find on a certain topic?
- When was that I last found a paper with a given keyword?
- What are the catalogues I have used so far?
- Can I quickly gather all the papers I found on a certain topic?
- Can I quickly retrieve a paper with a certain title, author?
- Considering the result so far, what and how should I search more?
Organisation and systematic search

How can one answer all the previous questions?

Reference management software could help!

http://en.wikipedia.org/wiki/Reference_management_software

A comparison of software


Note:
- the use of BibTex files with Latex will be explained in Lecture 6
- the correct way of citing and referencing will be explained in Lecture 12
Organisation and systematic search
Overview of JabRef

• JabRef is reference management software. It’s free and available for Windows, Linux and Mac OS X

Note: JabRef is one example, other software can also be good or more suitable to personal requirements

Demonstration on how one can

• Insert entries with keywords, abstracts, comments, reviews
• Link entries to downloaded PDF files
• Search entries (authors, titles, etc.)
• Visualise entries by keyword (groups)
• Use date of entry insertion to track the progress and arrange reading and new searches
• Use this organised information to formulate new searches
JabRef interface
Research Skills

Organisation and systematic search

Ref. Management Software

• PDF files can be viewed instantly from the database

• Searches on terms, authors, journals are easy to perform

• Overview on keywords allows to see how well all areas of interested are covered

• Insertion time-stamp allows to track the progress of search, or to postpone reading of papers without forgetting
Literature search: how to secure your progress - I

JabRef, as other software, stores information in plain text in a file with “bib” extension.

The database ideally is updated daily or weekly and in time (years) can grow from few entries up to hundreds (for a PhD).

Suggestion: use version control system (VCS) to secure your progress.
Literature search: how to secure your progress - II

The School of Computer Science has a Subversion Service available to all postgraduates. At [http://supportweb.cs.bham.ac.uk/services/subversion/](http://supportweb.cs.bham.ac.uk/services/subversion/) are the instruction on how to set up the service.

Useful not only for your bibliography file but also for plain text files that are updated frequently:
- The log file of your activity
- Software you are coding
- Thesis