What is Research?
and how to find a topic

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See Part I of: A Manual for Writers of Research Papers, Theses, and Dissertations by Kate L. Turabian, Wayne C. Booth, Gregory G. Colomb and Joseph M. Williams, Univ. of Chicago Press, 7th ed. (Apr 15, 2007).

What is Research?

- Asking a question and looking for facts to answer it.

What is a research paper?

- A report about the answer to your question.

- When the answer is not directly found in one source (like a textbook).

- When the reader may not accept your answer without some explanation of how you reached it. (support for your claim).

Research Reports

- Must rest on shared facts that readers accept as truths independent of your feelings and beliefs.

- Readers must be able to follow your reasoning from evidence that they accept to the claim you draw from it.

- Your success as a researcher thus depends not just on how well you gather an analyze data, but on how clearly you report your reasoning so that your readers can test and judge it before making your claims part of their knowledge and understanding.

Find a topic

- what do you already know about?

- what do you want to learn about?

- what issues do you debate with others?

Narrow your topic:
- read more about it (wikipedia, textbook)

- forums, blogs, google

- other books (more focused on the topic)

- foundational or summary papers in journals

Question your topic

- Ask how and why questions as you read.
- Ask what if? questions
- Analyze the topic:
  - what is its history?
  - what categories are there?
  - how do parts fit together?
- What kinds of questions do other people ask about it?
- Let one question lead to another.

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Some example questions:
(from software engineering)

- What is the best method to . . .
  - do rapid software development?
  - test programs containing concurrency?
  - prevent bugs in safety critical software?
  - prevent the failure of software projects?
- Under what conditions can agile methods be used successfully in large organizations?

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Where to find (reliable) answers
(useful sources)

- Journal articles, technical reports:
  - have been published in an academic journal (in print)
  - DO NOT cite copies of these on the internet.
- Other articles that have been published (in print or e-zine)
- Books (chapters) preferably NOT textbooks!
- On the internet: Be very careful
- Evaluating your source: see Harvard Guide to Using Sources

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Record the proper bibliographic data

- Author(s)
- Title
- Page numbers, volume + issue + edition numbers
- Publisher: name, place, date
- Conference? name and location and date
- URL **IFF** that's all that you have.

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How to find the sources:

- Go to Texas State Library home page, under Quick Links:
  - Library catalog (primarily for books)
  - Research Database (for scholarly articles, publications)
    - ✦ (MUST BE LOGGED IN to library to access articles)
    - ✦ Click on computer science
      - ‣ ACM Digital Library
      - ‣ IEEE Explore
    - ✦ Click on 'G' to find Google Scholar
- Browse the shelves in the library
- Browse internet