Software Development Tools

CSE 403 - Spring 1997

Why Tools?

- Increase the productivity of individual software engineer, as well as development team, by automating error-prone and/or tedious tasks.
- Division of labor

Software Development Tools

- Basically, these tools support programming activities of individuals.
  - Editors
  - Compilers & Interpreters
  - Linkers
  - Code Generators
  - Debuggers
- Each of these tools have evolved over time. What evolutions can you name?

Software Testing & Analysis Tools

- Testing bookkeeping.
- Test-case derivation.
  - Still experimental.
- Support for testing of other software quality.
  - Execution Profiler
- Other home-brew tools?
- Static analyzers
  - Derive and analyze certain flow properties.

Configuration Management Tools

- Source Code Control
  - Manage revisions made on a source code base by multiple programmers.
  - Common features found:
    - Code ownership: check-in, check-out & deltas.
    - Versioning.
    - Branching of source code base: fork & join.
  - Normally limited to text files.
  - E.g., SCCS, RCS, Visual Source Safe
- Make
  - Rebuild a system so that it will be consistent after modifications are made.
    - Want to only rebuild only those affected components.
  - Recompile and rebuild based on the dependencies specified in a make file.

Other Tools?