

Chapter 30: Programming Tools

- Modern programming tools decrease the amount of time required for construction
- Using leading edge tools can increase productivity by 50% or more

Design Tools

- A good and easy to use design and drawing tool is huge

Source Code Tools

- IDEs and desired features
 - o Compilation and error detection from within the editor
 - o Integration with source-code control
 - Build, test and debugging tools
 - o Compressed or outline views of programs
 - Class names only
 - Logical structures without contents
 - o Jump to definitions of classes, routines and variables
 - o Jump to all places where a class, routine, or variable is used
 - o Language specific formatting
 - o Interactive help for the language being edited
 - o Templates for common language constructs
 - o Smart indenting
 - o Automated code transformations or refactoring
 - o List of search strings so common strings don't need to be retyped
 - o Search and replace across a group of files
 - o Editing multiple files simultaneously
 - o Side by side diff comparisons
- Class Hierarchy Generators
 - o These are useful for breaking out inheritance trees
- Data Dictionaries
 - o Database that describes all the significant data in the project
 - o Actual data
 - o Class definitions

Building Your Own Programming Tools

- Good idea, also fun
- Project Specific Tools
 - o Tools to generate special kinds of test data
 - o Tools to verify quality of data
 - o Tools to emulate hardware
 - o Part of planning for a project should be thinking about the tools that might be needed and allocating time for building them

- Like that ridiculous tool box that the forklift picked up in KY
- Scripts
 - Tool that automates a repetitive chore

Tool Fantasyland

- We will always need people who can bridge the gap between real world problems and the computer that is supposed to solve the problem