

Projects

There will be three projects of increasing complexity. The first two are individual projects, each taking 3 weeks. The final project is a team project and will take 6 weeks. The idea is that by the time we begin the final project, classroom groups will have learned to function as teams. Here are the goals and themes of the projects:

Project 1

Approximate dates: 7 September – 28 September.

The purpose is to review and consolidate our knowledge of the core Java programming language and of object-oriented programming techniques. The instructor will both provide the high-level design and devise the code structure.

Design elements: modularity; data abstraction; specification and implementation.

Language elements: primitive types; classes (including nested classes); interfaces; packages.

Environment elements: document comments.

Theme: the transfig/fig2dev program.

Project 2

Approximate dates: 28 September – 19 October.

The purpose is to review and consolidate our knowledge of the standard libraries available in Java. We use various data structures (sets, maps, etc.). We discuss compatibility issues between different releases of the language, different OS platforms, and different JVMs.

Design elements: polymorphism; inheritance.

Language elements: none.

Environment elements: none.

Theme: the gnuplot program.

Project 3

Approximate dates: 19 October – 10 December.

The purpose is to review and consolidate our knowledge of the standard libraries available in Java. We use various data structures (sets, maps, etc.) and graphical user interface components (AWT, Swing) available in the Java run-time environment. We discuss compatibility issues between different releases of the language, different OS platforms, and different JVMs.

Design elements: polymorphism; inheritance; design for accessibility; formal code design process; team work.

Language elements: none.

Environment elements: source versioning with multiple access; integrated development environments.

Theme: the Xfig figure editor.