

System Software Project

Debugger

The goal of this project is to implement a simple debugger for Java programs using the *Java Platform Debugger Architecture (JPDA)*. It is sufficient to implement a command-line interface, but if you are ambitious you can also try to give your debugger a graphical user interface. The project *cannot* be implemented in teams, i.e. you have to implement it alone.

Your debugger should have the following minimum features:

- It should be possible to set a breakpoint to a certain line in the debuggee. The breakpoint position is specified by its line number.
- There should be commands to list all currently set breakpoints and to delete individual breakpoints.
- There should be a command to run the program to the next breakpoint.
- There should be a single-step command (both *step in* and *step over*).
- There should be a command that prints all currently active methods of the debuggee (i.e. a stack trace).
- It should be possible to print the names and values of all variables in the current stack frame. If a variable is structured (i.e. an array or an object) it should also be possible to print the values of individual array elements and object fields.

As a simplification you can restrict your debugger to be able to debug only single-threaded programs.