

## CS108 Assignment 5: GrepLike

**DUE DATE: THURSDAY 21 OCTOBER 2004, email to me by 5pm**

### Learning Objective

Learn how to use command-line arguments to a program; read from files; do some simple text searching and counting.

### Problem Statement

In UNIX and Unix-line operating systems, one of the most useful little applications is *grep*. Grep does simple pattern matching from files. For some background on *grep*, read the manual page at <http://www.aaronstevens.net/academics/cs108/grep.html>.

For this assignment, you will create a simplified version of the *grep* tool (called "*GrepLike*"). This application will scan input (from a text file redirected to standard input) one line at a time to match a certain pattern. The application you will develop will perform 4 different functions, depending on the command-line arguments supplied to it.

- Default mode: read each line of input, and print it out (to standard output) if it contains the pattern.
- "-c" option: read each line of input, and print out the number of lines which contain the pattern.
- "-n" option: read each line of input, and if it contains the pattern, print the line number and the line out (to standard output).
- If *GrepLike* is called with no parameters, it should print out a quick usage synopsis and exit.

The command-line calling convention is: *GrepLike* [-options] "pattern" filename

### Programming hints

- Program Structure: create a class *GrepLike*; use the constructor to do all the initialization based on the command-line arguments; create member variables for everything that gets initialized by the constructor; and use a method *findMatches()* to do all the pattern-matching work.
- Getting Started: begin by hard-coding the file name and pattern to match, and just getting your program to open the file, read each line, and look for the pattern.
- Add a counter to track the line numbers.
- Add a counter for the number of matches found.
- Create the necessary if/else logic to decide what to print out or count, and use **boolean** variables to turn the options on or off.
- Integrate the command-line arguments to specify the file name, pattern, and options.

### Deliverables

- The java code file(s) (\*.java).
- An executive summary of no more than 1 page, which will serve to introduce the *GrepLike* application, and provide some "how-to" type of user documentation.

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