



**COLORADO SCHOOL OF MINES
ELECTRICAL ENGINEERING & COMPUTER SCIENCE DEPARTMENT**

**CSCI-410
Elements of Computing Systems
Spring 2014**

ECS-09

The purpose of the programming assignment for this project is primarily to ensure that you are familiar with the details of the Jack programming language so that you have a framework from which to approach writing the compiler and the operating system libraries in the remaining projects.

Unlike the other projects, the “contract” (or the project requirements) for this project are not well defined; instead, only a vague notion of what is expected is provided. This makes it difficult for students to know if they have done enough (or wasted time doing too much) and it makes it difficult for the grader to assess the programs equitably.

Therefore, here are a set of reasonably clear-cut expectations:

- 1) You are required to develop a minimum of three classes that interact in some meaningful way (Main counts).
- 2) Each class is required to have at least two methods.
- 3) You must use both field and static variables.
- 4) One method/function must take zero arguments.
- 5) One method/function must take two or more arguments.
- 6) One method/function must use zero local variables.
- 7) One method/function must have at least two local variables.
- 8) One method/function must be a void function (does not return a value).
- 9) Variables of each type (int, boolean, char) must be used somewhere.
- 10) Each of the ten operators must be used at least once.
- 11) At least one positive and one negative “constant” must be used somewhere.
- 12) All of the reserved words must be used once.
- 13) At least one if() and one if()..else statement must be used.
- 14) At least one nested loop must be used.
- 15) At least one recursive method/function call must be made.
- 16) Except for Sys, must use at least two functions from each O/S library class.
- 17) At least one EOL, single-line block, and multiline block must be used.

The details of your program are open-ended. One recommendation would be to initially interact with the user via the console and the keyboard and then continue interacting

with them graphically. Some kind of a game is an obvious choice, but that is not required. While it is understood that some of the requirements may end up being met through somewhat contrived means, the bulk of the program should represent a reasonable approach to the application you've chosen to develop.

File Submission

Be sure to adhere to the File Header Formats and the Submission Procedures.