

CMPE 230 Systems Programming, Fall 2009
Homework 2 (due Dec 21st)

Problem 1

Write a perl program that will act as a simple language interpreter. Your interpreter will be called **simple** and will have the following features:

- It will have just scalar numeric variables,
- The variable names will consist of one lower case alphabetic character,
- It should support +, *, -, /, **, ++ and -- operations,
- It should have comparison and logical operators,
- It should support for loop,
- It should support while loop,
- It should support print statement,
- It should have standard input statement,
- You can assume input program will have no syntax errors,
- You can assume there will be at most one statement on each line.

The following are example programs that your simple interpreter will accept.

| Example 1 | Example 2 |
|--|--|
| <pre>>a = 3 >while (a>0) { > a-- >} >print a</pre> | <pre>> input a, b >for(i=a ; i < b ; i++) { > x++ > y=2*x >} > print x, y</pre> |

Problem 2

Implement a complete GUI program in Qt that will have the following widgets:

- A line edit widget to enter words
- Two list box widgets that will store list of words
- An add button that will add the word entered in the line edit widget to the list box selected by the radio buttons left and right.
- Two radio buttons left and right which will indicate to which list to add the word.
- A remove button that will remove a selected word from a list box
- An OK button that will terminate the program.
- A left pointer button (←) and a right pointer button (→) that will transfer a selected word in the list box to the other.

A picture of the GUI you will develop is given below.

