CS306 – Introduction to Perl
Summer 2006
Homework Assignment #2
Due: June 28th, 11:20am

Please follow the guidelines on HW0 on how to submit the homework. Remember, one zip file like this:
lastname-firstname-hw2.zip
  answers.txt
  hw2p1.pl
  hw2p2.pl
  etc....

This week I will use an automated grading script, so please pay attention to the naming and zip file structure.

Homework #2

Question 1. What are the advantages of using the <> operator over using STDIN or a filehandle? Why do you think Larry chose to provide such a flexible <> operator in Perl?

Question 2. The following code does not work as expected. What is the problem?

```
foo (@arr1, @arr2);

sub foo {
  my (@a1, @a2) = @_;
  ...
}
```

Question 3. What are the advantages to using *my*?

Notes on programs: While writing these programs below, remember to comment thoroughly, including your name near the top as well as comments throughout explaining what you are doing in your program.

Program 1. Write a program that uses a recursive function to calculate the factorial of a number that the user enters.

Program 2. Write a program that takes an array from STDIN and then passes that into a function which reverses the order of the array *without calling the reverse() function* and returns the new array.

Program 3. Write a program that will take the name of a file on the command line and will write out how many words and how many lines are in the file. Assume words are separated by spaces.

Program 4. Write a program that will take the name of a file on the command line and write out how many times each word appears in the file. Output the words most common to least common (i.e. sort by the number of times they appear, which will be the values in your counting hash). How to do this is a frequently asked question...you may want to look at chapter 4 of the perlfaq.....

Program 5. Write a program to track your progress in the class. You should maintain a data file like this:

17:20
19:20
25:30
...

where the first number is your score and the second number is the possible points on that particular assignment. You should save this data to a file. Each time you run the program, it should allow me to add another line to the data file (i.e. ask me for your grade and the total possible points for a new assignment). After you enter the new row, it should calculate how many total points you have earned this semester and how many total points you could have earned, and it should calculate a percentage. These calculations should be implemented in functions. One function could open the data file, and tally the two columns of points, and another could calculate a percentage.

Program 6. Write a program to number lines in an input file. For example, given:

How now,
brown cow?

produce:

1 How now,
2 Brown cow?

Focus on making this program small. It can be done in 5 lines or less.

Program 7. Write a program to maintain your contact list in a file. The file should have records like:

Fran|Fabrizio|555-1212|fran@cis.uab.edu

and should allow the user to search by last name and get the phone number and/or email address of the user with that last name if that last name is in the data file. The program should also allow me to add and delete users in the file, and list the entire contents of the file at once, in alphabetical order by last name. Assume unique last names.