

Name: _____

Problem	Points	Score
1	35	
2	35	
3	30	
Total	100	

Notes:

- (1) For this exam you are allowed to open a terminal window on your computer, you are allowed to web surf with Google, but you cannot use online chat or other interactive services.
- (2) Create your solutions in an MS Word document and email it to the instructor at the end of the exam. Use "ECE 3822" in the subject line, and name your attachment using our usual convention of "lastname_firstname_ex01.docx." Points will be deducted if you get the file name wrong.
- (3) In addition to providing your code, explain your solution to each problem.

You must show your code for each of these examples and briefly explain the steps you followed to reach your solutions. Your explanations don't need to be long but must cover all the key points that resulted in your answers.

Problem No. 1: The text database we provided in class has a directory structure of the form:

data/book_07/00009869_20040409

where "00009869" represents the subject ID, and "20040409" represents the date. For all the sessions that occurred in the year 2007 between May 1 and May 30, and count the number of text files for which the word "spike" and the word "sustained" occur at least once. Note that your solution must be case insensitive.

Problem 2: For the text database, generate a list of filenames whose full pathname contains the name "John". Write a shellscript that loops over this list and counts the number of characters in the file. Your shellscript should output each filename as it is processed, the number of characters in the file, and a summary that shows the total number of files processed and the total number of characters.

Problem 3: We have discussed the relationship of the .bashrc file to your overall environment. Write a script that sets an environment variable called "MY_OS" to the specific version of the operating system loaded in your machine. You cannot hardcode the operating system version. You must get this from the system so that your script can run on any Linux machine. You also need to set MY_PROC to the model name of the processor that your system is using (e.g., Intel Xeon). Again, this must be done in a machine-independent manner and work on any Linux system.

This script must also export this variable back to your root shell. Specifically, I should be able to do the following:

- (1) login
- (2) run your script (e.g., sh my_script.sh)
- (3) echo \$MY_OS
- (4) echo \$MY_PROC

and see the information. Alternately, I could embed this script in your .bashrc file.