CS 1400-03 Introduction to Programming and Problem Solving
Coding Practice #3
(Due: 11:59 PM, Friday, 2/19/2021)

Except Coding Practice #1, I will not grade your coding practice submissions. Instead, they will be treated as participation points. On blackboard, you will receive full points as long as you work on the exercises, which don't necessary mean they are all correct. Please check your own programs carefully and make sure they do generate the desired output.

Objectives:

- Be able to create complete Java programs with
  - Formatted output
  - String comparison methods
  - Decision Structures
  - Keyboard input and output
- Be able to compile and execute a Java program
- Be able to test and debug a program

Change your working directory to `cs1400/codingPractice` for this assignment.

Task #1 Formatted Output

Write a program, called `FormattedOutput.java`, using escape sequences and the `printf` method with format specifiers to print out the following: your name, your major, and your study list. The output format (name in a pair of double quotes, major in a pair of backslashes, and course number in a pair of single quotes) should look exactly like below except showing your own personal information.

```
Student:    "Tyler Wood"
Major:      \Computer Science\
Study List: CS '1300' and CS '1400'
```

Task #2 String Comparison

Write a program, called `StringComparison.java`, that reads in three strings and sorts them lexicographically. Here is a sample interaction:

```
Please enter three strings:
Charlie
Able
Baker
The inputs in sorted order are:
Able
Baker
Charlie
```

Task #3 Quadratic Equation

The quadratic equation is $ax^2+bx+c=0$. Write a Java program, called `roots.java`, which reads in the `int` values of a, b, and c, from the user and produces the roots for x with the behavior shown below. Format the result to be rounded to 4 decimal places.

```
$java Roots
Enter the three coefficients: 1 -1 -6
The two roots are 3.0000 and -2.0000.
$java Roots
Enter the three coefficients: 1 2 1
The single root is -1.0000.
$java Roots
Enter the three coefficients: 5 1 3
There are no real roots.
$java Roots
Enter the three coefficients: 0 4 5
This is not a quadratic equation.
```

Submission:

Generate a `script` file `practice3.txt` with appropriate time stamps and the following steps visible:

1) a `pwd` to show the current working directory
2) a `ls -l` to show in long format the files in your `cs1400/codingPractice` directory
3) a `cat` to display `FormattedOutput.java`
4) compile `FormattedOutput.java`
5) run `FormattedOutput`
6) a `cat` to display `StringComparison.java`
7) compile `StringComparison.java`
8) run `StringComparison`
9) a `cat` to display `roots.java`
10) compile `roots.java`
11) run `roots` four times with test data given in Task #3

Submit the script file `practice3.txt` to the instructor on Bb, under the Coding Practice Folder, Practice #3 assignment.