CECS 220
Summer 2021
Assignment 2
Due Date: 9:00 pm. Wednesday, June 16, 2021

Please do the following:

1. Programming project 3.1 of Chapter 3.
   Write a program that prompts for and reads the user's first and last name
   (separately). Then print a string composed of the first letter of the user's first
   name, followed by the first five characters of the user's last name, followed by a
   random number in the range 10 to 99. Assume that the last name is at least five
   letters long. Similar algorithms are sometimes used to generate usernames for
   new computer accounts.
2. Programming project 3.6 of Chapter 3.
   Write a program that reads the radius of a sphere and prints its volume and
   surface area. Use the following formulas. Print the output to four decimal places.
   r represents the radius.

$$\text{Volume} = \frac{4}{3}\pi r^3$$
$$\text{Surface Area} = 4\pi r^2$$

3. Programming project 3.13 of Chapter 3
   Write a JavaFX application that draws a circle centered at point (200, 200) with a
   random radius in the range 50 to 150. Each time the program is run it will draw a
   different circle.
4. Programming project 4.8 of Chapter 4.
   Write a class called Flight that represents an airline flight. It should contain
   instance data that represents the airline name, flight number, and the flight's
   origin and destination cities. Define the Flight constructor to accept and initialize
   all instance data. Include getter and setter methods for all instance data. Include
   a toString method that returns a one-line description of the flight. Create a driver
   class called FlightTest, whose main method instantiates and updates several
   Flight objects.
5. Programming project 4.13 of Chapter 4.
   Write a JavaFX application that presents a button and a circle. Every time the
   button is pushed, the circle should be moved to a new random location within the
   window.

You may use any of the code in the source files posted on Blackboard.

<u>A note about assignments and reports:</u>
Your presentation in your report reflects great deal about you, your understanding of the
assignment and on how much this course means to you. I try very hard to look at the

substance of the report but I will be lying if I said that presentation does not influence my judgment. It would be wise on your part to assume that this true in every course at school and in real life/work. I expect your reports to be well formed and conform to the following rules:

1. All reports have to be submitted as a PDF report that contains:
   1.1. Title page with your name, assignment number and the day you are actually submitting this report (Not the assignment due date)
   1.2. A brief description of the assignment or the statement of the problem which ever is appropriate.
   1.3. A brief description of the logic employed and the needed input and expected output.
   1.4. A comprehensive set of snapshots showing the inputs submitted, outputs obtained in the case of a successful output or a failure.
   1.5. Any conclusions, analysis, or answers to any questions I as you as part of the assignment.
2. One text file that contains all source code of all your classes interface and implementation and not the whole project (.java files only).
3. Please zip both the PDF document with the source code and submit one zip file.
4. Name the final zipped file using your initials and assignment number, e.g. my file should be named: ini_assignment_2.zip