

CSN-103: Fundamentals of Object Oriented Programming

Assignment 03

General Instructions:

- a) Whenever required, use **Scanner** class to accept inputs for the user at the runtime.
- b) To submit this assignment: Create a single .zip file containing all the source code (.java) files. Rename the zip as 03_xxxxxxx where xxxxxxx is your enrollment number.
- c) Send the zip file to TA in-charge of assignment (will be informed later) via email.
- d) Follow indentation while writing programs.
- e) All submissions will be checked for Plagiarism. ANY ATTEMPT TO CHEAT WILL BE SEVERELY PENALIZED.

Programming Problems

- 1) Write a JAVA program that accepts **3 command-line arguments** in the following sequence: **Operand Operator Operand** and perform the arithmetic operation specified by the **Operator**. For example, if three command-line arguments are 4 + 5 then 9 should be printed on the screen. Program should work for the following operators: +, -, *, /, %
- 2) Write a JAVA program with the following two methods: **ctain()** and **ccat()**. **ctain()** should provide the same functionality as **contains()** method and **ccat()** should provide the same functionality as **concat()** method available in the String class. [\[Link\]](#)
- 3) Write a JAVA program to create a class **point** having two member variables; **x_coordinate** and **y_coordinate**. Create two objects of the **point** class and initialize them with random *double* values using a constructor. Finally, write a method **findDistance()** to calculate the distance between these two point objects.
- 4) Write a JAVA program to add two timestamps using a class. Timestamp is of the form *Hour:Minutes:Seconds*. Accept one timestamp using Scanner and initialize the second timestamp using a constructor. For example, given two timestamps 08:20:46 and 12:24:34, the resultant time will be 20:45:20.
- 5) Write a JAVA program to create a class **Rectangle** having two member variables viz., **length** and **width**, and a method called **calculate()**. The class should contain three constructors:
 - a. **Default constructor:** Initializes the length and width to 0.
 - b. **Constructor with one int parameter:** Initializes both length and width equal to the value of the int parameter.
 - c. **Constructor with two double parameters:** Initializes length and width equal to the value of first and second parameter, respectively.Create three objects of **Rectangle** class using the above constructors and print the area by calling the **calculate()** method for each object.