Department of Statistics & Computer Science
University of Kelaniya
Academic Year – 2022/2023
COSC 12043 / BECS 12243 - Object Oriented Programming
Tutorial 05

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1. Write a Java program that calculates a discount using the ternary operator. If the purchase amount is greater than 5000, the program should apply a 10% discount; otherwise, it should apply a 5% discount.

   After calculating the discount, the program should print the following:

   The purchase amount

   The discount applied

   The final amount after applying the discount

2. Write a Java program to find the length of the string "**Welcome to Java Programming**" and print the result.

3. Show two ways to concatenate the following strings to produce the result "Hello, World!":

```
String first = “Hello, ";
String second = “World!";
```

4. Write a Java program that takes two strings as command line arguments and compares them to check if they are equal. The program should print whether the strings are equal or not. If the entered strings are "Hello" and "hello", the output should be:

```
Two strings are equal: false
```

5. What is the output of the following Java code segment (Write the output before executing the given code)?

```
String original ="software";
StringBuilder result = new StringBuilder("hi");
int index = original.indexOf('a');
result.setCharAt(0, original.charAt(0));
result.insert(1, original.charAt(4));
result.append(original.substring(1, 4));
result.insert(3, (original.substring(index, index+2) + ""));
System.out.println(result);
```

6. Write a Java program to print the reverse of a user-input string. For example, if the input string is "Sample Text", the output should be:

   `Reversed string: txeT elpmaS`

7. A password for a student will be generated as follows. It takes the first letter from the first name, the first two letters from the middle name, and the two letters before the last letter from the last name. The obtained letters will be concatenated along with age which is multiplied by 100. Finally displays the following:

   Note:

   The password must be in lowercase. The first letter in the first name, middle name, and last name must be given in upper case.

   ```
   First Name: Kamala
   Middle Name: Sugarcane
   Last Name: Perera
   Age: 20
   Password: ksuer2000
   ```

   Your program should work for any input **NOT ONLY** this given example in the exercise.

8. Create an enum WeatherCondition with constants SUNNY, RAINY, and CLOUDY. Write a program that uses a ternary operator to display an activity based on the weather condition:

   If the weather is **SUNNY**, the activity is "**Go for a picnic**."

   If the weather is **RAINY**, the activity is "**Stay indoors and read a book**."

   If the weather is **CLOUDY**, the activity is "**Take a relaxing walk**."

9. Write small Java programs for the following.
   a. Implement a Java program that removes the first three occurrences of the character 'm' (capital or small) from the "**I'm a JaVa PrOgRaMmEr**", string then print the resulting string to the screen.

      Output: **`I' a JaVa PrOgRaEr`**

   b. Implement a Java program that will split and print the three components of the following.

      course description: **ICS 102: Introduction to Computing I** as shown below:

      ```
      Course Name: ICS
      Course Number: 102
      Course Description: Introduction to Computing I
      ```

c. We have two students named **Niroshan Perera** and **Kamal Alwis**. Implement a Java program that will exchange the last names of the two students in such a way that the new names are going to be **Niroshan Alwis** and **Kamal Perera**.
   Your program should work for any given two names NOT ONLY this given example in the exercise.