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Faculty of Computing

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OOP -Lab2 - Introduction to Java

1. Implement one Java program and get the result of the following problems.
   - **5 + 2 * 3 - 1;**
   - **5 + 4 / 2 + 6;**
   - **3 + 6 / 2 * 3 - 1 + 2;**
   - **6 / 2 * 3 * 2 / 3;**
   - **int x = 2;**
     - **result = x++ + x++ * --x / x++ - --x + 3 >> 1 | 2;**
   - **x < 5 && x < 10**
   - **x < 5 || x < 4**
   - **!(x < 5 && x < 10)**

2. Write a program allowing the user to enter a sentence. In that sentence, you need to find the number of words, vowels, lowercase characters, uppercase characters, and frequency of each character. You need to implement separate methods for each task.

   > **Input the Text………….**
   > **Output.**
   > **Number of words = …**
   > **The number of vowels = ..**
   > **The number of lowercase characters = …**
   > **Character = H Frequency = ..**
   > **Character = W Frequency = …**

3. Write a Java program to find whether the number is even or odd. You need to use Ternary Operator to write your program. Create separate methods for user input values and calculations.

4. You need to write a Java program to get the following output. If that word is the same if we start reading it from left to right or right to left, you need to show the output as its reverse string is the same as it is, otherwise, you need to show no. Create separate methods for user input values and calculations.

   > **Input:** word = "abba"
   > **Output:** Its reverse string is the same as it is
   >
   > **Input:** str = "welcome"
   > **Output:** No

5. If the age is equal to or greater than 18 years and his/her weight is greater than 50Kg that person can donate blood. By considering the above scenario write a program to check that the person can donate blood. You need to show the following statement for appropriate positions in your code. Create separate methods for user input values and calculations.

   - **Hint – Use nested if else.**

     "You are eligible to donate blood".

     "You are not eligible to donate blood".

     "Age must be greater than 18".

6. If the user enters his/her level relevant Java course name should be displayed. Write a program by using the **switch case** statement and use the following data to implement the program. Create separate methods for user input values and calculations.

Level	Related course name
1	Java Programming for Complete Beginners
2	Java Programming and Software Engineering Fundamentals
3	Object-Oriented Programming in Java Specialization
4	The Complete Java Development Bootcamp
5	Java Programming Masterclass covering Java 17

7. By referring to the following output, write a Java program. Use arrays to implement the program.

   1st text –> 202,345, 1001, 235,875

   Output -> 875,235,1001,345,202

8. The user enters the temperature in day-wise for a week. Finally, the week's average temperature should be displayed to the user. Here you can use arrays.

9. First Initialize a Two-Dimensional Array and store the following values. Display the array item.

   {40, 50, 60}, {40, 50, 60}, {70, 80, 90}

   The array items should be displayed as follows.

```
Elements in Array are:

Row [0]: Column [0] :40
Row [0]: Column [1] :50 ………………………………
```

10. Find the largest and smallest element in each row of the above array and find the sum of rows and columns of the array. You can use separate methods for implement the above scenario.