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Batch 31

OOP

### Q- 1 Relational Operators

- : Write a program that takes an age as input and checks if the person is eligible to vote (age  $\geq 18$ ).
- : Check if a password length is between 8 and 16 characters. goog\_1790747051

Code:

```
import java.util.Scanner;

public class VoteEligibility {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter your age: ");

        int age = scanner.nextInt();

        if (age >= 18) {

            System.out.println("You are eligible to vote!");

        } else {

            System.out.println("You are not eligible to vote yet.");

        }

        System.out.print("Enter a password: ");

        String password = scanner.next();

        if (password.length() >= 8 && password.length() <= 16) {

            System.out.println("Password length is valid.");

        } else {

            System.out.println("Password length is not valid.");

        }

        scanner.close();

    }

}
```

The screenshot shows an IDE with a Java file named `VoteEligibility.java`. The code defines a `main` method that prompts the user for their age and password. It checks if the age is 18 or older and if the password length is between 8 and 16 characters. The terminal output shows three test cases: age 19 (eligible, password invalid), age 25 (eligible, password invalid), and age 16 (not eligible, password valid).

```
[2024]OOP > J VoteEligibility.java > Language Support for Java(TM) by Red Hat > VoteEligibility > main(String[])
3 public class VoteEligibility {
4     public static void main(String[] args) {
5         Scanner scanner = new Scanner(System.in);
6         System.out.print("Enter your age: ");
7         int age = scanner.nextInt();
8         System.out.println("You are eligible to vote!");
9     } else {
10        System.out.println("You are not eligible to vote yet.");
11    }
12
13    System.out.print("Enter a password: ");
14    String password = scanner.next();
15
16    if (password.length() >= 8 && password.length() <= 16) {
17        System.out.println("Password length is valid.");
18    } else {
19        System.out.println("Password length is not valid.");
20    }
21
22    scanner.close();
23 }
24
25
26
27
28
29
30
```

PROBLEMS 4 OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS

powershell - [2024]OOP + - [ ] ... ^ x

```
PS D:\d_drive\Practicals\Sem 3\[2024]OOP> ^C
PS D:\d_drive\Practicals\Sem 3\[2024]OOP> ^C
PS D:\d_drive\Practicals\Sem 3\[2024]OOP> java .\VoteEligibility.java
Enter your age: 19
You are eligible to vote!
Enter a password: this
Password length is not valid.
PS D:\d_drive\Practicals\Sem 3\[2024]OOP> java .\VoteEligibility.java
Enter your age: 25
You are eligible to vote!
Enter a password: thisismeandworkingon
Password length is not valid.
PS D:\d_drive\Practicals\Sem 3\[2024]OOP> java .\VoteEligibility.java
Enter your age: 16
You are not eligible to vote yet.
Enter a password: thisisnotme
Password length is valid.
PS D:\d_drive\Practicals\Sem 3\[2024]OOP>
Completed. Java: Ready
```

Ln 15, Col 9 Spaces: 4 UTF-8 CRLF Java

## Q- 2 Conditional (Ternary) Operator

- : Use the conditional operator to apply a discount based on total purchase amount.
- : Use the conditional operator to check if a student has passed based on their score.
- : Use the conditional operator to determine if a number is even or odd.

Code:

```
import java.util.Scanner;
```

```
public class VoteEligibility {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // Apply discount based on total purchase amount

        System.out.print("Enter total purchase amount: ");

        double purchaseAmount = scanner.nextDouble();

        double discount = purchaseAmount >= 100 ? 0.1 : 0.0;
```

```

double discountedPrice = purchaseAmount - (purchaseAmount * discount);

System.out.println("Discounted price: " + discountedPrice);

// Check if a student has passed based on their score

System.out.print("Enter student's score: ");

int score = scanner.nextInt();

String result = score >= 60 ? "Passed" : "Failed";

System.out.println("Result: " + result);

// Determine if a number is even or odd

System.out.print("Enter a number: ");

int number = scanner.nextInt();

String parity = number % 2 == 0 ? "Even" : "Odd";

System.out.println("Parity: " + parity);

scanner.close();
}

```

The screenshot shows an IDE with three tabs: 'prac\_2.java 1, U', 'prac\_3.java U', and 'VoteEligibility.java 1, U X'. The active file is 'VoteEligibility.java', which contains the Java code shown in the previous block. The IDE interface includes a toolbar at the top with icons for running, debugging, and other actions. Below the code editor, there are tabs for 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL', 'PORTS', and 'COMMENTS'. The 'TERMINAL' tab is active, displaying the output of the program when run in a PowerShell window. The output shows the program's behavior for two different inputs: a purchase amount of 10 and a student's score of 50, and a purchase amount of 100 and a student's score of 95. The program correctly calculates the discounted price and determines the student's result and the parity of the entered number.

```

[2024]OOP > J VoteEligibility.java > Language Support for Java(TM) by Red Hat > VoteEligibility > main(String[])
20
21 import java.util.Scanner;
22
23 public class VoteEligibility {
24     public static void main(String[] args) {
25         Scanner scanner = new Scanner(System.in);
26
27         // Apply discount based on total purchase amount
28         System.out.print("Enter total purchase amount: ");
29         double purchaseAmount = scanner.nextDouble();
30         double discount = purchaseAmount >= 100 ? 0.1 : 0.0;
31         double discountedPrice = purchaseAmount - (purchaseAmount * discount);
32         System.out.println("Discounted price: " + discountedPrice);
33
34         // Check if a student has passed based on their score
35         System.out.print("Enter student's score: ");
36         int score = scanner.nextInt();
37         String result = score >= 60 ? "Passed" : "Failed";
38         System.out.println("Result: " + result);
39
40         // Determine if a number is even or odd
41         System.out.print("Enter a number: ");

```

```

PS D:\d_drive\Practicals\Sem 3\[2024]OOP> java .\VoteEligibility.java
Enter total purchase amount: 10
Discounted price: 10.0
Enter student's score: 50
Result: Failed
Enter a number: 10
Parity: Even
PS D:\d_drive\Practicals\Sem 3\[2024]OOP> java .\VoteEligibility.java
Enter total purchase amount: 100
Discounted price: 90.0
Enter student's score: 95
Result: Passed
Enter a number: 65
Parity: Odd
PS D:\d_drive\Practicals\Sem 3\[2024]OOP>

```

completed. Java: Ready

Ln 32, Col 47 Spaces: 4 UTF-8 CRLF Java