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**Batch 31**

**OOP**

**Practical 2**

**Q – 1 Typecasting and operators**

- : Convert an amount from one currency to another using given exchange rates.
- : double for currency amounts, String for currency codes.
- : Arithmetic operators for conversion calculations.

Code:

```
import java.util.*;
```

```
class CurrencyConverter {
```

```
    public static void main(String[] args) {
```

```
        Scanner sc = new Scanner(System.in);
```

```
        double amount;
```

```
        System.out.println("Enter the amount in INR: ");
```

```
        amount = sc.nextDouble();
```

```
        double exchangeRateUSD = 82;
```

```
        double exchangeRateEUR = 120;
```

```
        double usdAmount = amount / exchangeRateUSD;
```

```
        double eurAmount = amount / exchangeRateEUR;
```

```
        System.out.println("The amount in INR is: " + amount);
```

```
        System.out.println("The amount in USD is: " + usdAmount);
```

```
        System.out.println("The amount in EUR is: " + eurAmount);
```

```
    }
```

```
}
```

```
J prac_2.java 1,0 X
[2024]OOP > J prac_2.java > Language Support for Java(TM) by Red Hat > StudentGradeCalculator > main(String[])
24
25 import java.util.Scanner;
26
27 class StudentGradeCalculator {
28     Run | Debug | Run main | Debug main
29     public static void main(String[] args) {
30         Scanner scanner = new Scanner(System.in);
31
32         System.out.println("Enter the number of subjects:");
33         int numSubjects = scanner.nextInt();
34
35         double totalScore = 0;
36
37         for (int i = 1; i <= numSubjects; i++) {
38             System.out.println("Enter score for subject " + i + ":");
39             double score = scanner.nextDouble();
40             totalScore += score;
41         }
42
43         double averageScore = totalScore / numSubjects;
44     }
45 }

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS D:\drive\Practicals\Sem 3\2024\OOP> java .\prac_2.java
Enter the number of subjects:
5
Enter score for subject 1:
10
Enter score for subject 2:
60
Enter score for subject 3:
80
Enter score for subject 4:
90
Enter score for subject 5:
50
Average score: 58.0
Grade: F
PS D:\drive\Practicals\Sem 3\2024\OOP>
```

Q – 2

- : Calculate the average grade of a student based on their scores in different subjects.
- : int or double for scores, char for grade letter.
- : Arithmetic operators for calculating the average and conditional operators to assign grades.

Code:

```
import java.util.Scanner;

class StudentGradeCalculator {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the number of subjects:");

        int numSubjects = scanner.nextInt();

        double totalScore = 0;

        for (int i = 1; i <= numSubjects; i++) {

            System.out.print("Enter score for subject " + i + ":");

            double score = scanner.nextDouble();

            totalScore += score;

        }

    }

}
```

```

double averageScore = totalScore / numSubjects;

char grade;

if (averageScore >= 90) {

    grade = 'A';

} else if (averageScore >= 80) {

    grade = 'B';

} else if (averageScore >= 70) {

    grade = 'C';

} else if (averageScore >= 60) {

    grade = 'D';

} else {

    grade = 'F';

}

System.out.println("Average score: " + averageScore);

System.out.println("Grade: " + grade);

scanner.close();

}

}

```

The screenshot shows an IDE with a Java file named `prac_2.java` and a terminal window. The Java code defines a `CurrencyConverter` class with a `main` method that prompts the user for an amount in INR and calculates the equivalent values in USD and EUR based on fixed exchange rates.

```

1  import java.util.*;
2
3  class CurrencyConverter {
4
5      public static void main(String[] args) {
6
7          Scanner sc = new Scanner(System.in);
8
9          double amount;
10         System.out.println("Enter the amount in INR: ");
11         amount = sc.nextDouble();
12
13         double exchangeRateUSD = 82;
14         double exchangeRateEUR = 120;

```

The terminal output shows three test runs of the program:

```

PS D:\d_drive\Practicals\Sem 3\2024\OOP> java .\prac_2.java
Enter the amount in INR:
100
The amount in INR is: 100.0
The amount in USD is: 8200.0
The amount in EUR is: 12000.0
PS D:\d_drive\Practicals\Sem 3\2024\OOP> java .\prac_2.java
Enter the amount in INR:
82
The amount in INR is: 82.0
The amount in USD is: 1.0
The amount in EUR is: 0.6833333333333333
PS D:\d_drive\Practicals\Sem 3\2024\OOP> java .\prac_2.java
Enter the amount in INR:
120
The amount in INR is: 120.0
The amount in USD is: 1.4634146341463414
The amount in EUR is: 1.0
PS D:\d_drive\Practicals\Sem 3\2024\OOP>

```