Day2_Java_Assignment1

1. Primitive Data Types

Task: Create a program that accepts age, height, and weight of a person and prints them with appropriate data types.

Sample Input:
Age: 25
Height: 5.9
Weight: 68.5

Sample Output:

```
Age: 25

Height: 5.9
Weight: 68.5
Program:
package assign;

import java.util.Scanner;

public class PrimitiveDataTypes {
    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter Age: ");

        int age = scanner.nextInt();

        System.out.print("Enter Height (e.g., 5.9): ");

        double height = scanner.nextDouble();

        System.out.print("Enter Weight (e.g., 68.5): ");

        double weight = scanner.nextDouble();

        System.out.println("\n--- Your Entered Details ---
");
        System.out.println("Age: " + age);
        System.out.println("Height: " + height);
        System.out.println("Weight: " + weight);


        scanner.close();
    }
}
```

2. Variables

Task: Declare and initialize different types of variables to store a student's information: ID, name, marks, and grade. Print them.

Sample Input:
ID: 101
Name: Arun
Marks: 89.5
Grade: A

Sample Output:

```
Student ID: 101

Name: Arun
Marks: 89.5
Grade: A

Program:


package assign;

public class StudentInfo {
    public static void main(String[] args) {

        int studentID = 101;
        String studentName = "Arun";
        double studentMarks = 89.5;
        char studentGrade = 'A';

        System.out.println("--- Student Information ---");
        System.out.println("Student ID: " + studentID);
        System.out.println("Name: " + studentName);
        System.out.println("Marks: " + studentMarks);
        System.out.println("Grade: " + studentGrade);
    }
}
```

3. Operators

Task: Accept two numbers and perform arithmetic, relational, and logical operations on them.

Sample Input:
Number1: 10
Number2: 20

Sample Output:

```
Addition: 30
Program:
package assign;
```

```
import java.util.Scanner;

public class OperatorsDemo {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter Number 1: ");
        int num1 = scanner.nextInt();

        System.out.print("Enter Number 2: ");
        int num2 = scanner.nextInt();

        System.out.println("\n--- Operations ---");

        // 1. Arithmetic Operations
        System.out.println("Addition: " + (num1 + num2));
        System.out.println("Subtraction: " + (num1 - num2));
        System.out.println("Multiplication: " + (num1 *
num2));
        // Be careful with division by zero, though not
explicitly asked for in sample
        System.out.println("Division: " + ((double) num1 /
num2)); // Cast to double for float result
        System.out.println("Modulus: " + (num1 % num2)); //
Remainder

        // 2. Relational Operations
        // To find the greater number as per sample output
        int greaterNumber = (num1 > num2) ? num1 : num2;
        System.out.println("Greater number: " +
greaterNumber);

        System.out.println("Is " + num1 + " greater than " +
num2 + "? " + (num1 > num2));
        System.out.println("Is " + num1 + " less than " +
num2 + "? " + (num1 < num2));
        System.out.println("Is " + num1 + " equal to " +
num2 + "? " + (num1 == num2));
        System.out.println("Is " + num1 + " not equal to " +
num2 + "? " + (num1 != num2));

        // 3. Logical Operations
        boolean areBothPositive = (num1 > 0 && num2 > 0);
        System.out.println("Are both positive? " +
areBothPositive);
```

```
        boolean isEitherNegative = (num1 < 0 || num2 < 0);
        System.out.println("Is either negative? " +
isEitherNegative);

        boolean notNum1Positive = !(num1 > 0);
        System.out.println("Is " + num1 + " not positive? "
+ notNum1Positive);

        scanner.close();
    }
```

4.String Concatenation

Task: Create a greeting message using first name and last name entered by the user.

Sample Input:
First Name: Ravi
Last Name: Kumar

Sample Output:

```
Hello, Ravi Kumar! Welcome to the system.
```

Program:

```
package assign;

import java.util.Scanner;

public class GreetingMessage {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter First Name: ");
        String firstName = scanner.nextLine();

        System.out.print("Enter Last Name: ");
        String lastName = scanner.nextLine();


        String greeting = "Hello, " + firstName + " " +
lastName + "! Welcome to the system.";

        System.out.println(greeting);

        scanner.close();
    }
}
```

5.StringBuilder

Task: Accept a sentence and reverse it using `StringBuilder`.

Sample Input:
Input: Hello Java Learners

Sample Output:

```
Original: Hello Java Learners

Reversed: srenraeL avaJ olleH
```

Program:

```
import java.util.Scanner;

public class task5 {

public static  void

main(String[] args) {

Scanner sc = new

Scanner(System.in);

System.out.println("Enter a

sentance :");

String input = sc.nextLine();

// Reversing

StringBuilder reversed = new

StringBuilder(input);

reversed.reverse();

System.out.println("\nOrigina

l :"+input);

System.out.println("Reversed

:"+ reversed.toString());

sc.close();

}
```

6.String API

Task: Count how many times a specific character appears in a string.

Sample Input:
String: banana
Character: a

Sample Output:

```
Character 'a' appears 3 time.
```

Program:

```
Package assign;

 import java.util.Scanner;

 public class CharacterCount {

  public static void main(String[] args) {

  Scanner scanner = new Scanner(System.in);

  System.out.print("String: ");

  String input = scanner.next();

  System.out.print("Character: ");

  char character = scanner.next().charAt(0);

  int count = 0;

  for (char c : input.toCharArray()) {

  if (c == character) {

  count++;

  }

 }

 System.out.println("Character '" + character + "' appears "
 + count + " times.");

  scanner.close();

 }
```

7.Date, Time, and Numeric Objects

Task: Display the current date and format it as DD-MM-YYYY. Also, show a formatted currency value.

Sample Input:
Date: [current system date]
Amount: 12345.678

Sample Output:

```
Current Date: 20-07-2025

Formatted Amount: ₹12,345.68
```

Program:

```
Package assign;

import java.time.LocalDate;
```

```
import
java.time.format.DateTimeForm
atter;
import
java.text.DecimalFormat;
public class
DateTimeAndCurrency {
 public static void
main(String[] args) {
 // Get current date
 LocalDate currentDate =
LocalDate.now();
 // Format date as DD-MM-YYYY
 DateTimeFormatter formatter
=
DateTimeFormatter.ofPattern("
dd-MM-yyyy");
 String formattedDate =
currentDate.format(formatter)
;
 // Display formatted date
 System.out.println("Current
Date: " + formattedDate);
double amount = 12345.678;
 DecimalFormat decimalFormat
= new
DecimalFormat("₹##,##0.00");
```

```
 String formattedAmount =
decimalFormat.format(amount);
 // Display formatted amount

System.out.println("Formatted
Amount: " + formattedAmount);
 }
```

8.Flow Control
Task: Based on a number entered, print whether it's positive, negative, or zero.
Sample Input:
Number: -5
The number is negative.

Program:

```
import java.util.Scanner;
public class task8 {
public static void main(String[] args) {
Scanner sc = new Scanner(System.in);
System.out.println("Enter the number :");
int Number = sc.nextInt();
//condition
if (Number > 0) {
System.out.println("The number is positive");
} else if (Number < 0) {
System.out.println("The number is Negative");
} else {
System.out.println("The number is Zero");
}
sc.close();
}
}
```

9.Conditions

Task: Accept marks and display the grade using `if-else`.

Sample Input:
Marks: 76

Sample Output:

```
Grade: B
```

Program:

```
package assign;

import java.util.Scanner;

public class GradeCalculator {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter Marks: ");
        int marks = scanner.nextInt();

        char grade;
```

```
        if (marks >= 90) {
            grade = 'A';
        } else if (marks >= 80) {
            grade = 'B';
        } else if (marks >= 70) {
            grade = 'C';
        } else if (marks >= 60) {
            grade = 'D';
        } else {
            grade = 'F';
        }

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

        scanner.close();
    }
}
```

10.Switch

Task: Build a simple calculator using `switch` to perform operations (+, -, *, /).

Sample Input:
Number1: 10
Number2: 5
Operation: *

Sample Output:

```
Result: 50
```

Program:

```
import java.util.Scanner;
public class task10 {
public static void main(String[] args) {
Scanner s = new Scanner(System.in);
System.out.println("Enter number1 :");
int number1 = s.nextInt();
System.out.println("Enter number2 :");
int number2 = s.nextInt();
System.out.println("Enter operator :");
char operation = s.next().charAt(0);
double result;
//switch
switch (operation) {
case '+' :
result = number1+number2;
System.out.println("Result: "+result);
break;
```

```
case '-' :
result = number1-number2;
System.out.println("Result: "+result);
break;
case '*' :
result = number1*number2;
System.out.println("Result: "+result);
Break;
case '/' :
result = number1/number2;
System.out.println("Result: "+result);
 break;

default:
System.out.println("Invalid poperator");
s.close();
}
}
}
```

11.Loops and Branching

Task: Print the first N even numbers using a loop.

Sample Input:
N = 5

Sample Output:

```
0 2 4 6 8
Program:
package assign;

import java.util.Scanner;

public class EvenNumbersPrinter {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter N (number of even numbers to
print): ");
        int n = scanner.nextInt();

        if (n <= 0) {
            System.out.println("Please enter a positive
value for N.");
        } else {
            System.out.print("First " + n + " even numbers:
");
            int count = 0;
```

```
            int number = 0;

            while (count < n) {
                if (number % 2 == 0) {
                    System.out.print(number + " ");
                    count++;
                }
                number++;
            }
            System.out.println(); }

         scanner.close();
    }
}
```

12.Arrays

Task: Accept 5 numbers, store them in an array, and display their average.

Sample Input:
Numbers: 10, 20, 30, 40, 50

Sample Output:

```
Average: 30.0
```

Program:

```
package assign;

import java.util.Scanner;

public class ArrayAverage {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        int[] numbers = new int[5];
        int sum = 0;

        System.out.println("Enter 5 numbers:");


        for (int i = 0; i < numbers.length; i++) {
            System.out.print("Number " + (i + 1) + ": ");
            numbers[i] = scanner.nextInt();
            sum += numbers[i];
        }


        double average = (double) sum / numbers.length;

        System.out.print("Numbers: ");
        for (int i = 0; i < numbers.length; i++) {
            System.out.print(numbers[i]);
            if (i < numbers.length - 1) {
```

```
                System.out.print(", ");
            }
        }
        System.out.println();

        System.out.println("Average: " + average);

        scanner.close();
    }
}
```

13.Enum

Task: Create an enum for days of the week. Print a message depending on the day.

Sample Input:
Day: MONDAY

Sample Output:
```
Start of the work week!
```
Program:
```
package assign;

import java.util.Scanner;

public class EvenNumbersPrinter {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter N (number of even numbers to
print): ");
        int n = scanner.nextInt();

        if (n <= 0) {
            System.out.println("Please enter a positive
value for N.");
        } else {
            System.out.print("First " + n + " even numbers:
");
            int count = 0;
            int number = 0;

            while (count < n) {
                if (number % 2 == 0) {
                    System.out.print(number + " ");
                    count++;
                }
                number++;
            }
            System.out.println(); }

        scanner.close();
    }
}
```

14.OOPs Concepts

Task: Create a `Student` class with fields for name and marks. Create an object and display its data.

Sample Input:
Name: Riya
Marks: 87

Sample Output:

```
Student Name: Riya

Marks: 87
```

Program:

```
Package assign;



import

java.util.Scanner;

class Student {

 String name;

 int marks;

Student(String name,

int marks) {

 this.name = name;

 this.marks = marks;

 }

 void displayData() {


System.out.println("S

tudent Name: " +

name);


System.out.println("M
```

```
arks: " + marks);
 }
}
public class Main {
 public static void
main(String[] args) {
 Scanner scanner =
new
Scanner(System.in);

System.out.print("Nam
e: ");
 String name =
scanner.next();

System.out.print("Mar
ks: ");
 int marks =
scanner.nextInt();
 Student student =
new Student(name,
marks);

student.displayData()
;
 scanner.close();
```

```
 }

}
```

4. Inheritance

Inheritance Task: Create a class Employee and a subclass Manager that extends Employee
and adds department information.
Sample Input: NName: Raj

Salary: 50000
Department: Sales

Program:

```
package assign;



i mport
java.util.Scanner;

class Employee {

 String name;

 int salary;

 Employee(String
name, int salary) {

this.name = name;

 this.salary =
salary;

 }

 void display() {

System.out.println("N
ame: " + name);


System.out.println("S
alary: " + salary);

 }
```

```
}

class Manager extends
Employee {

String department;

 Manager(String name,
int salary, String
department) {

 super(name, salary);

 this.department =
department; }

void display() {

 super.display();


System.out.println("D
epartment: " +
department);

 }

}

public class Mainn {

 public static void
main(String[] args) {

 Manager manager =
new Manager("Raj",
50000, "Sales");

}

}
```