Day2_Java_Assignment

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

```
package wipro_day2ass;

import java.util.Scanner;

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

      System.out.print("Age: ");
      int age = scanner.nextInt();

      System.out.print("Height: ");
      double height = scanner.nextDouble();

      System.out.print("Weight: ");
      double weight = scanner.nextDouble();

      System.out.println("\nAge: " + 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

```
package wipro_day2ass;

public class StudentInformation {
    public static void main(String[] args) {
        // Declare and initialize variables
        int id = 101;
        String name = "Arun";
        double marks = 89.5;
        char grade = 'A';

        // Print student information
        System.out.println("Student ID: " + id);
        System.out.println("Name: " + name);
        System.out.println("Marks: " + marks);
        System.out.println("Grade: " + grade);
    }
}
```

3. Operators

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

Sample Input:

Number1: 10

Number2: 20

```
package wipro_day2ass;

import java.util.Scanner;

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

        System.out.print("Number1: ");
        int num1 = scanner.nextInt();

        System.out.print("Number2: ");
        int num2 = scanner.nextInt();

        // Arithmetic Operations
        System.out.println("\nArithmetic Operations:");
        System.out.println("Addition: " + (num1 + num2));
        System.out.println("Subtraction: " + (num1 - num2));
        System.out.println("Multiplication: " + (num1 * num2));
        System.out.println("Division: " + (num1 / (double) num2));
        System.out.println("Modulus: " + (num1 % num2));

        // Relational Operations
        System.out.println("\nRelational Operations:");
        System.out.println("Equal: " + (num1 == num2));
        System.out.println("Not Equal: " + (num1 != num2));
```

```
        System.out.println("Greater Than: " + (num1 > num2));
        System.out.println("Less Than: " + (num1 < num2));
        System.out.println("Greater Than or Equal: " + (num1 >= num2));
        System.out.println("Less Than or Equal: " + (num1 <= num2));

        // Logical Operations
        System.out.println("\nLogical Operations:");
        System.out.println("AND: " + (num1 > 0 && num2 > 0));
        System.out.println("OR: " + (num1 > 0 || num2 > 0));
        System.out.println("NOT: " + !(num1 > num2));

        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

```
package wipro_day2ass;

import java.util.Scanner;

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

        System.out.print("First Name: ");
        String firstName = scanner.next();
```

```
        System.out.print("Last Name: ");
        String lastName = scanner.next();

        String greetingMessage = "Hello, " + firstName + " " + lastName + "! Welcome to the system.";
        System.out.println(greetingMessage);

        scanner.close();
    }
}
```

5. StringBuilder

Task: Accept a sentence and reverse it using StringBuilder.

Sample Input:

Input: Hello Java Learners

```
package wipro_day2ass;

import java.util.Scanner;

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

        System.out.print("Input: ");
        String input = scanner.nextLine();

        StringBuilder sb = new StringBuilder(input);
        String reversed = sb.reverse().toString();

        System.out.println("Original: " + input);
```

```
        System.out.println("Reversed: " + reversed);


        scanner.close();
    }
}
```

6. String API

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

Sample Input:

String: banana

Character: a

```
package wipro_day2ass;

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

```
package wipro_day2ass;

import java.time.LocalDate;
import java.time.format.DateTimeFormatter;
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);
```

```
        // Format currency value
        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

```
package wipro_day2ass;

import java.util.Scanner;

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

        System.out.print("Number: ");
        int number = scanner.nextInt();

        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.");
        }

        scanner.close();
    }
}
```

9. Conditions

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

Sample Input:

Marks: 76

```
package wipro_day2ass;

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("Student Name: " + name);
        System.out.println("Marks: " + marks);
    }
}
```

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

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

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

        Student student = new Student(name, marks);
        student.displayData();

        scanner.close();
    }
}
```

10. Switch

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

```
package wipro_day2ass;

import java.util.Scanner;

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

        System.out.print("Number1: ");
        int num1 = scanner.nextInt();
```

```
        System.out.print("Number2: ");
        int num2 = scanner.nextInt();

        // Arithmetic Operations
        System.out.println("\nArithmetic Operations:");
        System.out.println("Addition: " + (num1 + num2));
        System.out.println("Subtraction: " + (num1 - num2));
        System.out.println("Multiplication: " + (num1 * num2));
        System.out.println("Division: " + (num1 / (double) num2));
        System.out.println("Modulus: " + (num1 % num2));

        // Relational Operations
        System.out.println("\nRelational Operations:");
        System.out.println("Equal: " + (num1 == num2));
        System.out.println("Not Equal: " + (num1 != num2));
        System.out.println("Greater Than: " + (num1 > num2));
        System.out.println("Less Than: " + (num1 < num2));
        System.out.println("Greater Than or Equal: " + (num1 >= num2));
        System.out.println("Less Than or Equal: " + (num1 <= num2));

        // Logical Operations
        System.out.println("\nLogical Operations:");
        System.out.println("AND: " + (num1 > 0 && num2 > 0));
        System.out.println("OR: " + (num1 > 0 || num2 > 0));
        System.out.println("NOT: " + !(num1 > num2));

        scanner.close();
    }
}
```

11. Loops and Branching

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

Sample Input:

N = 5

```
package wipro_day2ass;

import java.util.Scanner;

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

      System.out.print("N = ");
      int n = scanner.nextInt();

      int count = 0;
      int num = 0;
      while (count < n) {
         System.out.print(num + " ");
         num += 2;
         count++;
      }

      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

```
package wipro_day2ass;

import java.util.Scanner;

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

      double[] numbers = new double[5];
      System.out.println("Enter 5 numbers:");
      for (int i = 0; i < 5; i++) {
         System.out.print("Number " + (i + 1) + ": ");
         numbers[i] = scanner.nextDouble();
      }

      double sum = 0;
      for (double num : numbers) {
         sum += num;
      }

      double average = sum / numbers.length;
      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.

```
package wipro_day2ass;

import java.util.Scanner;

enum DaysOfTheWeek {
   MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, SATURDAY, SUNDAY
}

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

      System.out.print("Day: ");
      String day = scanner.next().toUpperCase();

      try {
         DaysOfTheWeek dayOfWeek = DaysOfTheWeek.valueOf(day);
         switch (dayOfWeek) {
            case MONDAY:
               System.out.println("Start of the work week!");
               break;
            case TUESDAY:
               System.out.println("Just another day!");
               break;
            case WEDNESDAY:
               System.out.println("Middle of the week!");
               break;
            case THURSDAY:
               System.out.println("Almost Friday!");
               break;
            case FRIDAY:
```

```
                System.out.println("Weekend is near!");
                break;
            case SATURDAY:
                System.out.println("Enjoy your weekend!");
                break;
            case SUNDAY:
                System.out.println("Last day of the weekend!");
                break;
        }
    } catch (IllegalArgumentException e) {
        System.out.println("Invalid day of the week.");
    }

    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

```
package wipro_day2ass;

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("Student Name: " + name);
        System.out.println("Marks: " + marks);
    }
}

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

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

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

        Student student = new Student(name, marks);
        student.displayData();

        scanner.close();
    }
}
```

15. Inheritance

Task: Create a class Employee and a subclass Manager that extends Employee and adds department information.

Sample Input:

Name: Raj

Salary: 50000

Department: Sales

```
package wipro_day2ass;

import 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("Name: " + name);
      System.out.println("Salary: " + 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("Department: " + department);
    }
}

public class Mainn {
    public static void main(String[] args) {
        Manager manager = new Manager("Raj", 50000, "Sales");
        manager.display();
    }
}
```