Day2_Java_Assignment1

```
import java.util.*;

import java.text.*;
```

1.Primitive Data Type:

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

```
class PrimitiveDataTypes {

    public static void main(String[] args) {

        int age = 25;

        float height = 5.9f;

        double weight = 68.5;

        System.out.println("Age: " + age);

        System.out.println("Height: " + height);

        System.out.println("Weight: " + weight);

    }

}
```

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

```
class StudentInfo {

    public static void main(String[] args) {

        int id = 101;

        String name = "Arun";

        double marks = 89.5;

        char grade = 'A';
```

```
        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.

```
class OperatorsExample {
    public static void main(String[] args) {
        int num1 = 10, num2 = 20;
        System.out.println("Addition: " + (num1 + num2));
        System.out.println("Greater number: " + (num1 > num2 ? num1 : num2));
        System.out.println("Are both positive? " + (num1 > 0 && num2 > 0));
    }
}
```

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

```
class Greeting {
    public static void main(String[] args) {
        String firstName = "Ravi";
        String lastName = "Kumar";
        System.out.println("Hello, " + firstName + " " + lastName + "! Welcome to the system.");
    }
}
```

5. StringBuilder

Task: Accept a sentence and reverse it using StringBuilder

```
class ReverseSentence {
    public static void main(String[] args) {
        String input = "Hello Java Learners";
        StringBuilder sb = new StringBuilder(input);
        System.out.println("Original: " + input);
        System.out.println("Reversed: " + sb.reverse());
    }
}
```

6. String API

Task: Count how many times a specific character appears in a string. Sample Input: String: banana Character: a

```
class CharCount {
    public static void main(String[] args) {
        String text = "banana";
        char ch = 'a';
        int count = 0;
        for (int i = 0; i < text.length(); i++) {
            if (text.charAt(i) == ch) count++;
        }
        System.out.println("Character '" + ch + "' appears " + count + " times.");
    }
}
```

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

```
class DateCurrencyFormat {
    public static void main(String[] args) {
        Date today = new Date();
        SimpleDateFormat sdf = new SimpleDateFormat("dd-MM-yyyy");
        NumberFormat nf = NumberFormat.getCurrencyInstance(new Locale("en", "IN"));
        double amount = 12345.678;
        System.out.println("Current Date: " + sdf.format(today));
        System.out.println("Formatted Amount: " + nf.format(amount));
    }
}
```

8. Flow Control

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

```
class CheckNumber {
    public static void main(String[] args) {
        int num = -5;
        if (num > 0)
          System.out.println("The number is positive.");
        else if (num < 0)
          System.out.println("The number is negative.");
        else
          System.out.println("The number is zero.");
    }
}
```

9. Conditions

Task: Accept marks and display the grade using if-else. Sample Input: Marks: 76

```
class GradeCheck {
    public static void main(String[] args) {
        int marks = 76;
        if (marks >= 90) System.out.println("Grade: A");
        else if (marks >= 75) System.out.println("Grade: B");
        else if (marks >= 60) System.out.println("Grade: C");
        else System.out.println("Grade: D");
    }
}
```

10. Switch

Task: Build a simple calculator using switch to perform operations (+, -, *, /). Sample Input: Number1: 10 Number2: 5 Operation: *

```
class Calculator {
    public static void main(String[] args) {
        int a = 10, b = 5;
        char op = '*';
        switch (op) {
            case '+':
                    System.out.println("Result: " + (a + b)); break;
            case '-':
                    System.out.println("Result: " + (a - b)); break;
            case '*':
                     System.out.println("Result: " + (a * b)); break;
            case '/':
                     System.out.println("Result: " + (a / b)); break;
            default:
```

```
                System.out.println("Invalid Operation");
        }
    }
}
```

11. Loops and Branching

Task: Print the first N even numbers using a loop. Sample Input: N = 5

```
class EvenNumbers {
    public static void main(String[] args) {
        int N = 5;
        for (int i = 0; i < N * 2; i += 2) {
            System.out.print(i + " ");
        }
    }
}
```

12. Array

Task: Accept 5 numbers, store them in an array, and display their average. Sample Input: Numbers: 10, 20, 30, 40, 50

```
class ArrayAverage {
    public static void main(String[] args) {
        int[] nums = {10, 20, 30, 40, 50};
        int sum = 0;
        for (int num : nums) sum += num;
        System.out.println("Average: " + (sum / (double) nums.length));
    }
}
```

13. Enum

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

```
enum Day {
   MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, SATURDAY, SUNDAY
}
class EnumDemo {
   public static void main(String[] args) {
      Day today = Day.MONDAY;
      switch (today) {
         case MONDAY:
                  System.out.println("Start of the work week!"); break;
         case FRIDAY:
                  System.out.println("Weekend is near!"); break;
         case SUNDAY:
                  System.out.println("Time to relax!"); break;
         default:
                   System.out.println("Regular day.");
      }
   }
}
```

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

```
class Student {
   String name;
   int marks;
   Student(String n, int m) {
```

```
        name = n;
        marks = m;
    }
    void display() {
        System.out.println("Student Name: " + name);
        System.out.println("Marks: " + marks);
    }
    public static void main(String[] args) {
        Student s = new Student("Riya", 87);
        s.display();
    }
}
```

15. Inheritance

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

```
class Employee {
    String name;
    double salary;
    Employee(String n, double s) {
        name = n;
        salary = s;
    }
}
class Manager extends Employee {
    String department;
    Manager(String n, double s, String d) {
        super(n, s);
        department = d;
```

```
    }
    void display() {
        System.out.println("Name: " + name);
        System.out.println("Salary: " + salary);
        System.out.println("Department: " + department);
    }
    public static void main(String[] args) {
        Manager m = new Manager("Raj", 50000, "Sales");
        m.display();
    }
}
```