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:

```java
package day_2_java_assignment;
import java.util.Scanner;

public class prim_d_type {

    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.print("Age:");
        int age=sc.nextInt();
        System.out.print("Height:");
        double height=sc.nextDouble();
        System.out.print("Weight:");
        double weight=sc.nextDouble();
        sc.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:

```java
package day_2_java_assignment;

public class variable_stu {

    public static void main(String[] args) {
           int id=101;
           String name="sahithi";
           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.

Sample Input:

Number1: 10

Number2: 20

Sample Output:

Addition: 30

Greater number: 20

Are both positive? True

Program:

```
package day_2_java_assignment;

public class operators_arl {
   public static void main(String[] args) {
          int a=10;
          int b=20;
          //arithmetic operators
          System.out.println("a+b = "+(a+b));
          System.out.println("a-b = "+(a-b));
          System.out.println("a*b = "+(a*b));
          System.out.println("a/b = "+(a/b));
          System.out.println("b%a = "+(b%a));
          System.out.println("a++ = "+(a++));
          System.out.println("a-- = "+(a--));
          System.out.println("a = "+a);
          System.out.println("--b = "+(--b));
          System.out.println("++b = "+(++b));

          //Relational operators
          System.out.println("a == b = "+(a == b));
          System.out.println("a != b = "+(a != b));
          System.out.println("a > b = "+(a > b));
          System.out.println("a < b = "+(a < b));
          System.out.println("b >= a = "+(b >= a));
          System.out.println("b <= a = "+(b <= a));

          //logical operators
          boolean a1 =true;
          boolean b1 =false;
          System.out.println("a1 && b1 = "+(a1&&b1));
          System.out.println("a1 || b1 = "+(a1||b1));
          System.out.println("!(a1 && b1) = "+!(a1 && b1));

   }
}
```

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:

```java
package day_2_java_assignment;

import java.util.Scanner;

public class concat_name {

   public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          System.out.println("Firstname: ");
          String fn=sc.next();
          System.out.println("Lastname: ");
          String ln=sc.next();
          String msg="Hello, "+fn+" "+ln+"! welcome to the system";
          System.out.println(msg);
          sc.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

```java
package day_2_java_assignment;

import java.util.Scanner;

public class strbuild_rev {

   public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          System.out.println("original string: ");
          String os=sc.nextLine();
          StringBuilder sb=new StringBuilder(os);
          sb.reverse();
          System.out.println("Reversed string: "+sb.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 times.

   Program:

```java
package day_2_java_assignment;

import java.util.Scanner;

public class count {

   public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          String str=sc.next();
          char ch=sc.next().charAt(0);
          int count=0;
          for(int i=0;i<str.length();i++)
          {
                 if(str.charAt(i)==ch)
                 {
                        count++;
                 }
          }
          System.out.println("character '"+ch+"' appears "+count+ " times.");
          sc.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:

```java
package day_2_java_assignment;

import java.text.DecimalFormat;
import java.text.NumberFormat;
import java.time.LocalDate;
import java.time.format.DateTimeFormatter;
import java.util.Locale;

public class date_time_numobj {

    public static void main(String[] args) {
          LocalDate date=LocalDate.now();
          DateTimeFormatter formatter = DateTimeFormatter.ofPattern("dd-MM-
yyyy");
        String formattedDate = date.format(formatter);

        System.out.println("Current Date: " + formattedDate);


        double amount = 12345.678;

        DecimalFormat df = new DecimalFormat("#,##0.00");
        String formattedAmount = df.format(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

   Sample Output:
   The number is negative.

   Program:

```java
package day_2_java_assignment;

import java.util.Scanner;

public class flow_control {

   public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          int num=sc.nextInt();
          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");
          sc.close();
   }

}
```

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

   Sample Input:
   Marks: 76

   Sample Output:
   Grade: B

   Program:

```java
package day_2_java_assignment;

import java.util.Scanner;

public class conditions_grade {

   public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          System.out.println("enter marks: ");
          int marks=sc.nextInt();
          if(marks>=91)
          {
                System.out.println("A+");
          }
          else if(marks>=81)
          {
                System.out.println("A");
          }
          else if(marks>=71)
          {
                System.out.println("B");
          }
          else if(marks>=61)
          {
                System.out.println("C");
          }
          else if(marks>=51)
          {
                System.out.println("D");
          }
          else if(marks>=35)
          {
                System.out.println("E");
          }
          else
          {
                System.out.println("F");
          }
          sc.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:

```java
package day_2_java_assignment;

import java.util.Scanner;

public class switch_operations {

   public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          int n1=10;
          int n2=5;
          System.out.println("Enter operator ('+','-','*','/'):");
          char operation=sc.next().charAt(0);
          switch(operation)
          {
          case '+':
                 int add=n1+n2;
                 System.out.println(add);
                 break;
          case '-':
                 int sub=n1-n2;
                 System.out.println(sub);
                 break;
          case '*':
                 int mul=n1*n2;
                 System.out.println(mul);
                 break;
          case '/':
                 int div=n1/n2;
                 System.out.println(div);
                 break;
          }
          sc.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:

```java
package day_2_java_assignment;

import java.util.Scanner;

public class loops {

   public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          System.out.println("enter a number: ");
          int num=sc.nextInt();
          int count=0;
          for(int i=0;i<=10;i=i+2)
          {
                 System.out.print(i+" ");
                 count++;
                 if(count==num)
                 {
                        break;
                 }
          }
          sc.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 day_2_java_assignment;

import java.util.Scanner;

public class arrayss {

    public static void main(String[] args) {
           Scanner sc=new Scanner(System.in);
           int a[]=new int[5];
           int sum=0;
           double avg=0;
           for(int i=0;i<5;i++)
           {
                  a[i]=sc.nextInt();
           }
           for(int i=0;i<5;i++)
           {
                 sum=sum+a[i];
           }
           avg=sum/5;
           System.out.println("Average: "+avg);
           sc.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 day_2_java_assignment;

public class enums {


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

        public static void main(String[] args) {
            // Sample input
            Day today = Day.MONDAY;

            // Message depending on the day
            switch (today) {
                case MONDAY:
                    System.out.println("Start of the work week!");
                    break;
                case TUESDAY:
                    System.out.println("Keep going!");
                    break;
                case WEDNESDAY:
                    System.out.println("Halfway through the week!");
                    break;
                case THURSDAY:
                    System.out.println("Almost there!");
                    break;
                case FRIDAY:
                    System.out.println("Last work day!");
                    break;
                case SATURDAY:
                 System.out.println("Enjoy the weekend!");
                    break;
                case SUNDAY:
                    System.out.println("Enjoy the weekend!");
                    break;
                default:
                    System.out.println("Invalid 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

    Sample Output:
    Student Name: Riya
    Marks: 87

    Program:

```java
package day_2_java_assignment;

public class stu {
   public void display()
   {
   String name="riya";
   int marks=87;
   System.out.println(name);
   System.out.println(marks);

   }
}

package day_2_java_assignment;

public class obj_stu {

   public static void main(String[] args) {
          stu s1=new stu();
          s1.display();

   }

}
```

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

    Sample Output:
    Name: Raj
    Salary: 50000
    Department: Sales

    Program:

```java
package day_2_java_assignment;

public class employee {
   public void display()
   {
          String name="raj";
          int salary=50000;
          System.out.println("name: "+name);
          System.out.println("salary: "+salary);

   }

}
```

```java
package day_2_java_assignment;

public class manager extends employee{
   public void display()
   {
          String department="sales";
          System.out.println("sales: "+department);
   }

}
```

```java
package day_2_java_assignment;

public class emp_main extends manager{

   public static void main(String[] args) {
          employee e=new employee();
          e.display();
          manager m=new manager();
          m.display();
   }

}
```