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

```java
package Assignments;

import java.util.Scanner;

public class Primitive {
    public static void main(String[]args){
        Scanner scanner = new Scanner(System.in);
        System.out.println("enter age:");
        int age = scanner.nextInt();
        System.out.println("Enter Height:");
        float height=scanner.nextFloat();
        System.out.println("Enter 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 Assignments;

```java
public class Variables {
    public static void main(String[]args){
        int id = 10;
        String name = "Chinnu";
        double marks = 11.1;
        char grade = 'A';


        System.out.println("Student ID:"+id);
        System.out.println("\nName:"+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 Assignments;

```java
public class Operator {

    public static void main(String[] args) {

        int num1 = 10;

        int num2 = 20;

        System.out.println("Addition: " + (num1 + num2));

        int greater = (num1 > num2) ? num1 : num2;

        System.out.println("Greater number: " + greater);

        boolean arePositive = (num1 > 0 && num2 > 0);

        System.out.println("Are both positive? " + arePositive);

    }
```

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

```java
package Assignments;

public class Concat {

    public static void main(String[] args) {

        String firstName = "sai";

        String lastName = "suhas";

        String result = firstName + " " + lastName;

        String mess = "Hello," + firstName + " " + lastName + "! Good Morning.";

        System.out.println(mess);

    }
}
```

5.StringBuilder

Task: Accept a sentence and reverse it using StringBuilder.

Sample Input:

Input: Hello Java Learners

package Assignments;

```java
public class StringBuilder {
    public static void main(String[] args) {
        String input ="hello java learners";
        String reversed = new java.lang.StringBuilder(input).reverse().toString();
        System.out.println("Reversed:" + reversed);
    }
}
```

6.STRING API

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

Sample Input:

String: banana Character:a

Package Assignments;

```java
import java.util.Scanner;

public class StringApi {
    public static void main(String[] args) {
        Scanner s1 = new Scanner(System.in);
        System.out.print("Enter a string: ");
        String text = s1.nextLine();
        System.out.print("Enter a character to count: ");
        char ch = s1.next().charAt(0);
        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

```
package Assignments;


import java.text.NumberFormat;

import java.time.LocalDate;


public class DateandTime {
   public static void main(String[] args) {
      LocalDate date = LocalDate.now();
      System.out.println("Current Date: " + date.getDayOfMonth() + "-" + date.getMonthValue() + "-"
+ date.getYear());
      double amount = 12345.678;
      NumberFormat nf = NumberFormat.getCurrencyInstance();
      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

```java
package Assignments;

import java.util.Scanner;

public class FlowControl {
    public static void main(String[] args) {
        Scanner s1 = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = s1.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.");
        }

        s1.close();
    }
}
```

9.Conditions

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

Sample Input:

Marks: 76

```java
package Assignments;

import java.util.Scanner;
```

```java
public class Conditions {

    public static void main(String[] args) {

        Scanner s1 = new Scanner(System.in);

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

        int marks = s1.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);

        s1.close();

    }

}
```

10.Switch

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

package Assignments;

```java
import java.util.Scanner;

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

        System.out.print("Enter Number1: ");
        int num1 = sc.nextInt();
        System.out.print("Enter Number2: ");
        int num2 = sc.nextInt();
        System.out.print("Enter Operation (+, -, *, /): ");
        char operation = sc.next().charAt(0);
        int result = 0;
        boolean validOperation = true;

        switch (operation) {
            case '+':
                result = num1 + num2;
                break;
            case '-':
                result = num1 - num2;
                break;
            case '*':
                result = num1 * num2;
                break;
            case '/':
                if (num2 != 0) {
                    result = num1 / num2;
                } else {
                    validOperation = false;
                    System.out.println("Error: Division by zero.");
```

```
            }
            break;
        default:
            validOperation = false;
            System.out.println("Invalid operation.");
        }
        if (validOperation) {
            System.out.println("Result: " + result);
        }
        sc.close();
    }
}
```

11.Loops and Branching

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

Sample Input:

N = 5

```java
package Assignments;

import java.util.Scanner;

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

        System.out.print("Enter the value of N: ");
        int N = scanner.nextInt();

        for (int i = 0; i < N; i++) {  //first n prime numbers
            System.out.print(i * 2 + " ");
```

```
        }
    }
}
```

12.Arrays

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

Sample Input:

Numbers: 10, 20, 30, 40, 50

```java
package Assignments;

import java.util.Scanner;

public class Arrays {
    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 < 5; i++) {
            numbers[i] = scanner.nextInt();
            sum += numbers[i];
        }
        double average = sum / 5.0;
        System.out.println("Average: " + average);
    }
}
```

13.Enum

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

```java
package Assignments;

import java.util.Scanner;

public class Enum{

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

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a day: ");
        String input = scanner.next().toUpperCase();

        try {
            Day day = Day.valueOf(input);  // No need for full package reference
            switch (day) {
                case MONDAY:
                    System.out.println("Ready!");
                    break;
                case WEDNESDAY:
                    System.out.println("SET!");
                    break;
                case SATURDAY:
                    System.out.println("GO!");
                    break;
                default:
                    System.out.println("weekday.");
            }
        } catch (IllegalArgumentException e) {
```

```java
            System.out.println("Invalid day entered.");
        }


        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

 In Student Class

```java
package Assignments;

import java.util.Scanner;

class Student {

    String name;

    int marks;


    Student(String name, int marks) {

        this.name = name;

        this.marks = marks;

    }

    void display() {

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

        System.out.println("Marks: " + marks);

    }

}

public class OOPS {

    public static void main(String[] args) {

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

```java
        System.out.print("Name: ");

        String name = scanner.nextLine();


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

        int marks = scanner.nextInt();

        Student student = new Student(name, marks);

        student.display();

      }

    }
```

In OOPS class

```java
package Assignments;

import java.util.Scanner;

class Student {

   String name;

   int marks;


   Student(String name, int marks) {

      this.name = name;

      this.marks = marks;

   }

   void display() {

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

      System.out.println("Marks: " + marks);

   }

}

public class OOPS {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

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

        String name = scanner.nextLine();
```

```java
        System.out.print("Marks: ");

        int marks = scanner.nextInt();

        Student student = new Student(name, marks);

        student.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

In Employee Class


```java
package Assignments;

import java.util.Scanner;


  class Employee {

    String name;

    int salary;


    Employee(String name, int salary) {

      this.name = name;

      this.salary = salary;

    }

  }
```

```java
class Manager extends Employee {

    String department;

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

        super(name, salary); // call to parent constructor

        this.department = department;

    }

    void display() {

        System.out.println("Name: " + name);

        System.out.println("Salary: " + salary);

        System.out.println("Department: " + department);

    }
}

public class Inheritance {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        // Input from user

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

        String name = scanner.nextLine();

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

        int salary = scanner.nextInt();

        scanner.nextLine(); // consume newline

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

        String department = scanner.nextLine();
```

```java
        Manager manager = new Manager(name, salary, department);


        System.out.println();

        manager.display();
    }
}
```

In Inheritance class

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


    class Employee {
        String name;
        int salary;


        Employee(String name, int salary) {
            this.name = name;
            this.salary = salary;
        }
    }

    class Manager extends Employee {
        String department;


        Manager(String name, int salary, String department) {
            super(name, salary); // call to parent constructor
            this.department = department;
        }
```

```java
    void display() {

        System.out.println("Name: " + name);

        System.out.println("Salary: " + salary);

        System.out.println("Department: " + department);

    }

}


public class Inheritance {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);


        // Input from user

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

        String name = scanner.nextLine();


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

        int salary = scanner.nextInt();

        scanner.nextLine(); // consume newline


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

        String department = scanner.nextLine();


        Manager manager = new Manager(name, salary, department);


        System.out.println();

        manager.display();

    }

}
```

In Manager Class

```java
package Assignments;

import java.util.Scanner;


class Employee {

    String name;

    int salary;


    Employee(String name, int salary) {

        this.name = name;

        this.salary = salary;

    }

}


class Manager extends Employee {

    String department;


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

        super(name, salary); // call to parent constructor

        this.department = department;

    }



    void display() {

        System.out.println("Name: " + name);

        System.out.println("Salary: " + salary);

        System.out.println("Department: " + department);

    }

}


public class Inheritance {
```

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

    Scanner scanner = new Scanner(System.in);


    // Input from user

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

    String name = scanner.nextLine();


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

    int salary = scanner.nextInt();

    scanner.nextLine(); // consume newline


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

    String department = scanner.nextLine();


    Manager manager = new Manager(name, salary, department);


    System.out.println();

    manager.display();
}
}
```