1. Primitive Data Types

```
package Assignment;

import java.util.Scanner;

public class Primitive_Data_Types {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);


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

        int age = sc.nextInt();

        System.out.print("Enter Height (in feet): ");

        float height = sc.nextFloat();

        System.out.print("Enter Weight (in kg): ");

        double weight = sc.nextDouble();


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

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

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


        sc.close();

    }

}
```

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

```
package Assignment;

public class Variables{

    public static void main(String[] args) {

        int studentId = 101;

        String name = "Arun";

        double marks = 89.5;

        char grade = 'A';
```

```java
        System.out.println("Student ID: " + studentId);

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

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

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

    }

}
```

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

```java
package Assignment;

import java.util.Scanner;

public class Operators {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);


        System.out.print("Enter Number1: ");

        int number1 = sc.nextInt();

        System.out.print("Enter Number2: ");

        int number2 = sc.nextInt();

        // Arithmetic Operation

        int addition = number1 + number2;

        // Relational Operation

        int greater = (number1 > number2) ? number1 : number2;

        // Logical Operation

        boolean bothPositive = (number1 > 0 && number2 > 0);

        System.out.println("Addition: " + addition);

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

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

        sc.close();

    }

}
```

4. String Concatenation. Create a greeting message using first name and last name entered by the user.

```java
package Assignment;
import java.util.Scanner;
public class StringConcatenation {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

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

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

        String result = "Hello, " + firstName + " " + lastName + "! Welcome to the system.";
        System.out.println(result);
        sc.close();
    }
}
```

5. Accept a sentence and reverse it using StringBuilder.

```java
package Assignment;
import java.util.Scanner;
public class StringBuilderReverse {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        // Input
        System.out.print("Enter a sentence: ");
        String sentence = sc.nextLine();
        // Reverse using StringBuilder
        StringBuilder sb = new StringBuilder(sentence);
        String reversed = sb.reverse().toString();
```

```java
        // Output
        System.out.println("Original: " + sentence);
        System.out.println("Reversed: " + reversed);
        sc.close();
    }
}
```

6. String API. Count how many times a specific character appears in a string

```java
package Assignment;
import java.util.Scanner;
public class StringCharacterCount {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter a string: ");
        String input = sc.nextLine();
        System.out.print("Enter a character to count: ");
        char target = sc.next().charAt(0);
        int count = 0;
        for (int i = 0; i < input.length(); i++) {
            if (input.charAt(i) == target) {
                count++;
            }
        }
        System.out.println("Character '" + target + "' appears " + count + " times");
        sc.close();
    }
}
```

7. Date, Time, and Numeric Objects.

```java
package Assignment;
```

```java
import java.time.LocalDate;

import java.time.format.DateTimeFormatter;

import java.text.NumberFormat;

import java.util.Locale;


public class DateAndCurrencyFormatting {

    public static void main(String[] args) {

        LocalDate today = LocalDate.now();


        DateTimeFormatter formatter = DateTimeFormatter.ofPattern("dd-MM-yyyy");

        String formattedDate = today.format(formatter);


        double amount = 55154521.145115;


        NumberFormat currencyFormatter = NumberFormat.getCurrencyInstance(new Locale("en", "IN"));

        String formattedAmount = currencyFormatter.format(amount);

        // Output

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

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

    }

}
```

8. Flow Control. Based on a number entered, print whether it's positive, negative, or zero

```java
package Assignment;

import java.util.Scanner;

public class NumberCheck {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);


        System.out.print("Enter a number: ");

        int number = sc.nextInt();
```

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

```java
package Assignment;

import java.util.Scanner;
public class Grade {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter marks: ");
        int marks = sc.nextInt();

        String grade;
        if (marks >= 90) {
            grade = "A+";
        } else if (marks >= 80) {
            grade = "A";
        } else if (marks >= 70) {
            grade = "B";
        } else if (marks >= 35) {
            grade = "C";
        } else {
```

```java
            grade = "F";
        }
        System.out.println("Grade: " + grade);
        sc.close();
    }
}
```

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

```java
package Assignment;
import java.util.Scanner;
public class Calculator {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter Number1: ");
        double num1 = sc.nextDouble();

        System.out.print("Enter Number2: ");
        double num2 = sc.nextDouble();

        System.out.print("Enter Operation (+, -, *, /): ");
        char operation = sc.next().charAt(0);

        double result;
        switch (operation) {
            case '+':
                result = num1 + num2;
                System.out.println("Result: " + result);
                break;
            case '-':
                result = num1 - num2;
```

```java
                System.out.println("Result: " + result);
                break;
            case '*':
                result = num1 * num2;
                System.out.println("Result: " + result);
                break;
            case '/':
                if (num2 != 0) {
                    result = num1 / num2;
                    System.out.println("Result: " + result);
                } else {
                    System.out.println("Error: Cannot divide by zero!");
                }
                break;
            default:
                System.out.println("Invalid operation!");
        }
        sc.close();
    }
}
```

11. Print the first N even numbers using a loop.

```java
package Assignment;
import java.util.Scanner;
public class Loop {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter N (number of even numbers to print): ");
        int N = sc.nextInt();
        for (int i = 0; i < N; i++) {
            System.out.print((2 * i) + " ");
```

```
        }
        sc.close();
    }
}
```

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

```java
package Assignment;
import java.util.Scanner;
public class ArrayAverage {
    public static void main(String[] args) {
        Scanner sc = 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] = sc.nextInt();
            sum += numbers[i];
        }
        double average = sum / 5.0;
        System.out.println("Average: " + average);
        sc.close();
    }
}
```

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

```java
package Assignment;
import java.util.Scanner;
public class Enum {
    enum Day {
        MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, SATURDAY, SUNDAY
    }
```

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

    Scanner sc = new Scanner(System.in);

    System.out.print("Enter a day (e.g., MONDAY): ");

    String inputDay = sc.next().toUpperCase();


    try {

        Day day = Day.valueOf(inputDay); // Convert string to enum

        switch (day) {

            case MONDAY:

                System.out.println("Start of the work week!");

                break;

            case FRIDAY:

                System.out.println("Almost weekend!");

                break;

            case SATURDAY:

            case SUNDAY:

                System.out.println("It's the weekend!");

                break;

            default:

                System.out.println("Midweek grind!");

        }

    } catch (IllegalArgumentException e) {

        System.out.println("Invalid day entered.");

    }

    sc.close();

    }

}
```

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

```java
package Assignment;
public class Oops {
    String name;
    int marks;

    Oops(String name, int marks) {
this.name = name;
this.marks = marks;
}
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.

```java
package Assignment;
import java.util.Scanner;
public class Inheritance {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        // Input
        System.out.print("Enter Name: ");
        String name = sc.nextLine();
        System.out.print("Enter Salary: ");
        double salary = sc.nextDouble();
        sc.nextLine(); // consume newline
```

```java
        System.out.print("Enter Department: ");

        String department = sc.nextLine();

        // Create Manager object

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

        // Output

        mgr.displayInfo();

        sc.close();

    }

}
```