

Input and Output Statements in Java

Aim:

To understand and use input and output statements in Java using the Scanner class.

PRE LAB EXERCISE

QUESTIONS

1.What is input in a program?

- Input is the data entered by the user.
- It is used by the program for processing.
- Example: numbers or text given to the program.

2.What is output in a program?

- Output is the result produced by the program.
- It is shown after processing the input.
- Example: result displayed on the screen.

3.Which class is used to read input from the user in Java?

- In Java, the **Scanner** class is used to read input.
- It is available in java.util package.
- It reads data like numbers and strings from the user.

IN LAB EXERCISE

Objective:

To read input from the user and display the output using Java input and output statements.

INPUT STATEMENT:

SCANNER CLASS

- ✓ The Scanner class in Java is used to read input from the user through the keyboard.
It is available in the package java.util.
- ✓ The Scanner object reads different types of input such as integer, float, double, and string and stores them in variables.
- ✓ To use the Scanner class, it must be imported before using it in the program.

SYNTAX:

- ✓ `Scanner sc = new Scanner(System.in);`

Commonly Used Scanner Methods:

- ✓ nextInt() – reads an integer value
- ✓ nextFloat() – reads a float value
- ✓ nextDouble() – reads a double value
- ✓ next() – reads a single word
- ✓ nextLine() – reads a complete line of text

PROGRAMS:**Program 1: Read and Display Name****Source Code:**

```
import java.util.Scanner;

class ReadName {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter your name: ");
        String name = sc.nextLine();
        System.out.println("Your name is: " + name);
    }
}
```

Output:

Enter your name: Anitha

Your name is: Anitha

Enter your name: saravana

Your name is: saravana

==== Code Execution Successful ===

Program 2: Read Two Numbers and Print Sum**Source Code:**

```
import java.util.Scanner;  
  
class SumInput {  
  
    public static void main(String[] args) {  
        Scanner sc = new Scanner(System.in);  
        System.out.print("Enter first number: ");  
        int a = sc.nextInt();  
        System.out.print("Enter second number: ");  
        int b = sc.nextInt();  
        int sum = a + b;  
        System.out.println("Sum = " + sum);  
    }  
}
```

Output:

Enter first number: 5

Enter second number: 3

Sum = 8

```
Enter first number: 10  
Enter second number: 10  
Sum = 20  
  
==== Code Execution Successful ===
```

Program 3: Read Length and Breadth and Find Area of Rectangle**Source Code:**

```
import java.util.Scanner;

class AreaRectangleInput {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter length: ");
        int length = sc.nextInt();
        System.out.print("Enter breadth: ");
        int breadth = sc.nextInt();
        int area = length * breadth;
        System.out.println("Area of Rectangle = " + area);
    }
}
```

Output:

Enter length: 10

Enter breadth: 5

Area of Rectangle = 50

```
Enter length: 10
Enter breadth: 20
Area of Rectangle = 200
```

POST LAB EXERCISE

- 1.What is the use of the Scanner class in Java?
 - Scanner class is used to read input from the user.
 - It reads data like numbers and strings.

- 2.Which package contains the Scanner class?
 - Scanner class is present in java.util package.

- 3.What does System.in represent?
 - System.in represents standard input.
 - It is used to take input from keyboard.

- 4.What does System.out represent?
 - System.out represents standard output.
 - It is used to display output on screen.

- 5.Name any two methods used to read input using Scanner.
 - nextInt() and nextLine() are used to read input.

- 6.What is the difference between next() and nextLine()?
 - next() reads a single word.
 - nextLine() reads a full line including spaces.

Result:

Thus the input was successfully read from the user and the corresponding output was displayed using Java input and output statements.

ASSESSMENT

Description	Max Marks	Marks Awarded
Pre Lab Exercise	5	
In Lab Exercise	10	
Post Lab Exercise	5	

Viva	10	
Total	30	
Faculty Signature		