

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

What is input in a program?

- Input is the **data given to a program** to process (by the user, file, or another program).

What is output in a program?

- Output is the **result produced by the program** after processing the input.

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

- The **Scanner class** (from java.util package) is used to read input 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);

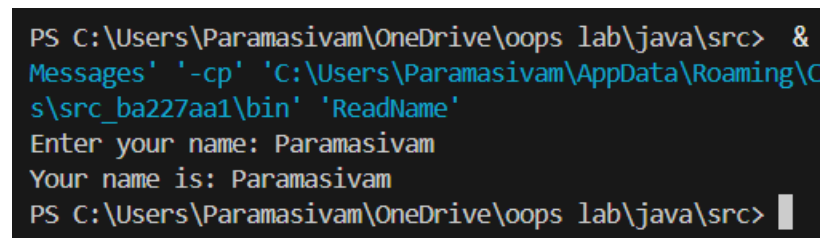
    }

}
```

Output:

Enter your name: Anitha

Your name is: Anitha



```
PS C:\Users\Paramasivam\OneDrive\oops lab\java\src> &
Messages' -cp' 'C:\Users\Paramasivam\AppData\Roaming\C
s\src_ba227aa1\bin' 'ReadName'
Enter your name: Paramasivam
Your name is: Paramasivam
PS C:\Users\Paramasivam\OneDrive\oops lab\java\src> |
```

Program 2: Read Two Numbers and Print Sum

Source Code:

```
import java.util.Scanner;

class SumInput {

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

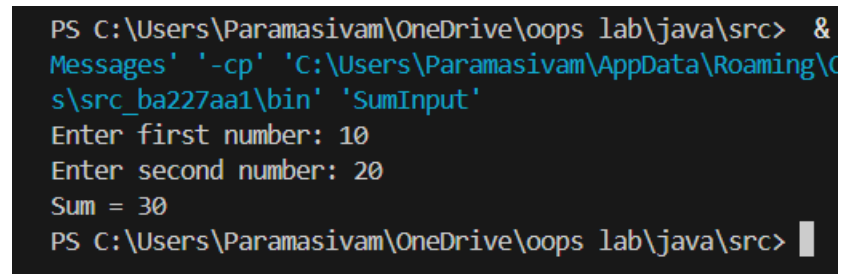
```

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



```

PS C:\Users\Paramasivam\OneDrive\oops lab\java\src> &
Messages' '-cp' 'C:\Users\Paramasivam\AppData\Roaming\Code\src_ba227aa1\bin' 'SumInput'
Enter first number: 10
Enter second number: 20
Sum = 30
PS C:\Users\Paramasivam\OneDrive\oops lab\java\src>

```

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: ");

```

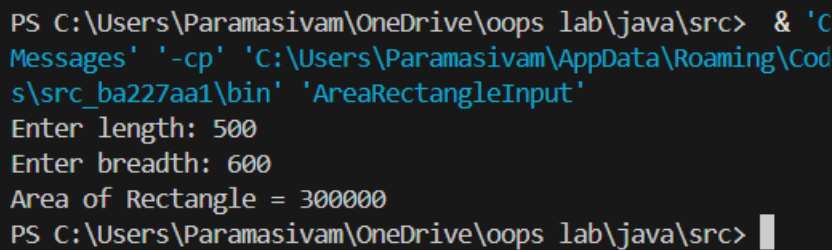
```
int breadth = sc.nextInt();  
int area = length * breadth;  
System.out.println("Area of Rectangle = " + area);  
}  
}
```

Output:

Enter length: 10

Enter breadth: 5

Area of Rectangle = 50



```
PS C:\Users\Paramasivam\OneDrive\oops lab\java\src> & 'C:\Program Files\Java\jdk-11.0.10\bin\java.exe' -cp 'C:\Users\Paramasivam\AppData\Roaming\Code\src_ba227aa1\bin' 'AreaRectangleInput'  
Enter length: 500  
Enter breadth: 600  
Area of Rectangle = 300000  
PS C:\Users\Paramasivam\OneDrive\oops lab\java\src> |
```

POST LAB EXERCISE

- ✓ **What is the use of the Scanner class in Java?**

The Scanner class is used to **read input from the user** (keyboard, file, etc.).

- ✓ **Which package contains the Scanner class?**

java.util package.

- ✓ **What does System.in represent?**

System.in represents the **standard input stream** (keyboard input).

- ✓ **What does System.out represent?**

System.out represents the standard output stream (display/console output).

- ✓ **Name any two methods used to read input using Scanner.**

nextInt()

nextLine()

✓ **What is the difference between next() and nextLine()?**

- next() reads a single word (stops at space).
- nextLine() reads the entire 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		