

## 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 information or data provided by the user to the program.

What is output in a program?

It is the result obtained from the program.

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

The **Scanner** class is used to read input from the user in Java.

### 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

```
1  import java.util.Scanner;   ReadName.java is a non-project file, only syntax errors are reported
2
3  class ReadName {
4      public static void main(String[] args) {
5          Scanner sc = new Scanner(System.in);   Resource leak: 'sc' is never closed
6          System.out.print(s: "Enter your name: ");
7          String name = sc.nextLine();
8          System.out.println("Your name is: " + name);
9      }
10 }
11
```

PROBLEMS 2 OUTPUT DEBUG CONSOLE EXPLORER TERMINAL PORTS

```
PS C:\Users\ragur> & 'C:\Program Files\Java\jdk-25.0.2\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:60539' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\ragur\AppData\Local\Temp\vscodesws_7b297\jdt_ws\jdt.ls-java-project\bin' 'ReadName'
Enter your name: Ranjith
Your name is: Ranjith
PS C:\Users\ragur>
```

## 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

```
1 import java.util.Scanner;
2
3 class SumInput {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         System.out.print(s: "Enter first number: ");
7         int a = sc.nextInt();
8         System.out.print(s: "Enter second number: ");
9         int b = sc.nextInt();
10        int sum = a + b;
11        System.out.println("Sum = " + sum);
12    }
13 }
14
```

PS C:\Users\ragur> & 'C:\Program Files\Java\jdk-25.0.2\bin\java.exe' '-agentlib:jdwp=transport=dt\_socket,server=n,suspend=y,address=localhost:57951' '-enabl  
e-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\ragur\AppData\Local\Temp\vscodesws\_7b297\jdt\_ws\jdt.ls-java-project\bin' 'SumInput'  
Enter first number: 1  
Enter second number: 2  
Sum = 3  
PS C:\Users\ragur> |

### 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

```
1 import java.util.Scanner;
2
3 class AreaRectangleInput {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         System.out.print("Enter length: ");
7         int length = sc.nextInt();
8         System.out.print("Enter breadth: ");
9         int breadth = sc.nextInt();
10        int area = length * breadth;
11        System.out.println("Area of Rectangle = " + area);
12    }
13 }
14
```

PS C:\Users\ragur> & 'C:\Program Files\Java\jdk-25.0.2\bin\java.exe' '-agentlib:jdwp=transport=dt\_socket,server=n,suspend=y,address=localhost:6269 e-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\ragur\AppData\Local\Temp\vscodesws\_7b297\jdt\_ws\jdt.ls-java-project\bin' 'Area input'

Enter length: 5  
Enter breadth: 5  
Area of Rectangle = 25  
PS C:\Users\ragur>

## POST LAB EXERCISE

- ✓ What is the use of the Scanner class in Java?
  - The **Scanner** class is used to **read input from the user** such as numbers, strings, and characters.
- ✓ Which package contains the Scanner class?

The Scanner class is present in the **java.util** package.
- ✓ What does System.in represent?
  - **System.in** represents the **standard input stream**, usually the **keyboard**.
- ✓ What does System.out represent?
  - **System.out** represents the **standard output stream**, usually the **monitor/console**.
- ✓ Name any two methods used to read input using Scanner.
  - ✓ • `nextInt()`
  - ✓ • `nextLine()`
  - ✓

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

next()                      - Reads **one 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	
<b>Total</b>	<b>30</b>	
<b>Faculty Signature</b>		