

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 by the user or another source.

What is output in a program?

Output is the result produced by a program after processing the input.

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

The **Scanner** class 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:rakshana

Your name is: Rakshana

```
import java.util.Scanner;
class ReadName {
Run | Debug
public static void main(String[] args) {
Scanner sc = new Scanner(System.in);
System.out.print(s: "Enter your name: ");
String name = sc.nextLine();
System.out.println("Your name is: " + name);
}
}
```

```
Enter your name: rakshana
Your name is: rakshana
```

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

```

```

Enter first number: 41
Enter second number: 8
Sum = 49

```

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 }
```

```
Enter length: 10
Enter breadth: 5
Area of Rectangle = 50
```

POST LAB EXERCISE

- ✓ What is the use of the Scanner class in Java?
 - Scanner is used to read user input like integers, decimals, and strings from the keyboard.
- ✓ 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 (monitor/screen output).
- ✓ Name any two methods used to read input using Scanner.
 - nextInt(), nextLine()
- ✓ What is the difference between next() and nextLine()?

○ Method	○ Reads
○ next()	○ Only one word (until space)
○ nextLine()	○ 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		