

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 in a program: Data or values given to a program by the user or another source for processing.

What is output in a program?

Output in a program: The result or information produced by a program after processing the input.

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

Class used to read input from the user in Java: The Scanner class (from java.util package) is used to read user input.

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);

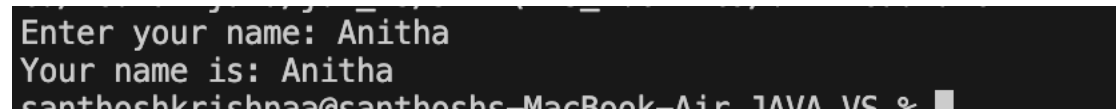
    }

}
```

Output:

Enter your name: Anitha

Your name is: Anitha

A screenshot of a terminal window with a dark background. It shows the program's execution: 'Enter your name: Anitha' followed by 'Your name is: Anitha'. The prompt 'santhoshkrishnaa@santhoshs-MacBook-Air: JAVA VS %' is visible at the bottom.

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



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

A screenshot of a terminal window with a dark background. It shows the execution of a Java program. The first line is 'Enter length: 10', the second line is 'Enter breadth: 5', and the third line is 'Area of Rectangle = 50'. The text is white on a black background.

POST LAB EXERCISE

- ✓ **What is the use of the Scanner class in Java?**
Use of Scanner class in Java: It is used to read input from the user or other input sources.
- ✓ **Which package contains the Scanner class?**
Package containing Scanner class: The 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 (console output).
- ✓ **Name any two methods used to read input using Scanner.**
Two Scanner input methods: nextInt() and nextLine().
- ✓ **What is the difference between next() and nextLine()?**
Difference between next() and nextLine(): next() reads a single word, while 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		