

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 refers to the data provided to the program for processing. It can be given by the user through the keyboard or from files and devices. Input helps the program perform required operations and produce results.

What is output in a program?

Output is the information produced by a program after processing the input. It is usually displayed on the screen or stored in a file. Output shows the result of the program's execution.

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. It belongs to the java.util package. The Scanner class reads data such as integers, strings, and characters from standard 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);  
    }  
}
```

```
Enter your name: Sunitha  
Your name is: Sunitha
```

Output:

Enter your name: Anitha

Your name is: Anitha

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);  
    }  
}
```

```
Enter first number: 4  
Enter second number: 5  
Sum = 9
```

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);
}
```

```
Enter length: 56
Enter breadth: 23
Area of Rectangle = 1288
```

Output:

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

POST LAB EXERCISE

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

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

It allows reading different data types such as integers, strings, and floating-point numbers from the keyboard.

✓ Which package contains the Scanner class?

The Scanner class is present in the java.util package.

It must be imported before using it in a program.

✓ What does System.in represent?

System.in represents the standard input stream.

It is used to take input from the keyboard.

✓ What does System.out represent?

System.out represents the standard output stream.

It is used to display output on the screen.

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

Two methods used to read input are:

- `nextInt()`
- `nextLine()`

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

`next()` reads input only up to the first space. `nextLine()` reads the entire line including spaces until a newline character.

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		