

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?

Answer: Input is the data or values given to a program so that it can process and produce a result.

Example: numbers entered through keyboard, values read from a file.

What is output in a program?

Answer: Output is the result or information produced by a program after processing the input.

Example: results displayed on the screen.

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

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

It belongs to the java.util package.

Example: Scanner sc = new Scanner(System.in);

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: Rohitha B
Your name is: Rohitha B
```

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: 200  
Enter second number: 29  
Sum = 229
```

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: 20  
Area of Rectangle = 200
```

POST LAB EXERCISE

- ✓ What is the use of the Scanner class in Java?
Answer: The Scanner class is used to read input from the user through the keyboard.
- ✓ Which package contains the Scanner class?
Answer: The Scanner class is present in the java.util package.
- ✓ What does System.in represent?
Answer: System.in represents the standard input stream, usually the keyboard.
- ✓ What does System.out represent?
Answer: System.out represents the standard output stream, usually the monitor.
- ✓ Name any two methods used to read input using Scanner.
Answer: nextInt(), nextLine()
What is the difference between next() and nextLine()?
Answer:
 - ☐ 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		

ROHITHA B

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