

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: Anitha

Your name is: Anitha

```
1 import java.util.Scanner;
2 class ReadName {
3     public static void main(String[] args) {
4         Scanner sc = new Scanner(System.in);
5         System.out.print("Enter your name: ");
6         String name = sc.nextLine();
7         System.out.println("Your name is: " + name);
8     }
9 }
```

```
Enter your name: Sarathiswaran B
Your name is: Sarathiswaran 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: 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)

- **Method**
- `nextLine()`
- **Reads**
- 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		