

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

1.What is input in a program?

Input is the data or values that are given to a program so it can perform a task.

It can be entered by the user (keyboard), read from a file, or received from another program.

2.What is output in a program?

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

It is usually displayed on the screen, printed, or saved to a file.

3.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 package: java.util
- It reads input from the keyboard using 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;

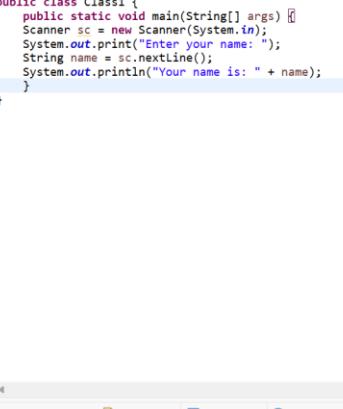
class ReadName {

    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: swetha

Your name is: swetha



The screenshot shows the Eclipse IDE interface with the following details:

- Project Explorer View:** Shows a single project named "Class1.java".
- Java Editor View:** Displays the code for Class1.java. The code reads a user's name from the console and prints it back. The line "System.out.print("Enter your name: ");" is highlighted.
- Console View:** Shows the output of the program: "Enter your name: swetha" followed by "Your name is: swetha".
- Bottom Status Bar:** Shows the path "C:\Users\SWETHA\p2\pool\plugins\org.eclipse.jdt.core\src\Class1.java" and the status "terminated".

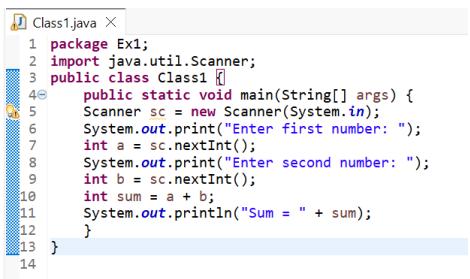
Program 2: Read Two Numbers and Print Sum

Source Code:

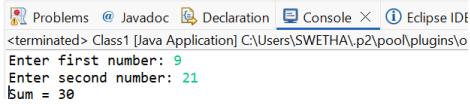
```
import java.util.Scanner;  
  
class SumInput {  
  
    public static void main(String[] args) {  
  
        Scanner sc = new Scanner(System.in);  
  
        System.out.print("Enter first number: ");  
  
        int a = sc.nextInt();  
  
        System.out.print("Enter second number: ");  
  
        int b = sc.nextInt();  
  
        int sum = a + b;  
  
        System.out.println("Sum = " + sum);  
  
    }  
}
```

Output:

```
Enter first number: 9  
Enter second number: 2  
Sum = 30
```



```
1 package Ex1;
2 import java.util.Scanner;
3 public class Class1 {
4     public static void main(String[] args) {
5         Scanner sc = new Scanner(System.in);
6         System.out.print("Enter first number: ");
7         int a = sc.nextInt();
8         System.out.print("Enter second number: ");
9         int b = sc.nextInt();
10        int sum = a + b;
11        System.out.println("Sum = " + sum);
12    }
13 }
14
```



```
Problems @ Javadoc Declaration Console × Eclipse IDE
<terminated> Class1 [Java Application] C:\Users\SWETHA\p2\pool\plugins\o
Enter first number: 9
Enter second number: 21
Sum = 30
```

Program 3: Read Length and Breadth and Find Area of Rectangle

Source Code:

```
import java.util.Scanner;
```

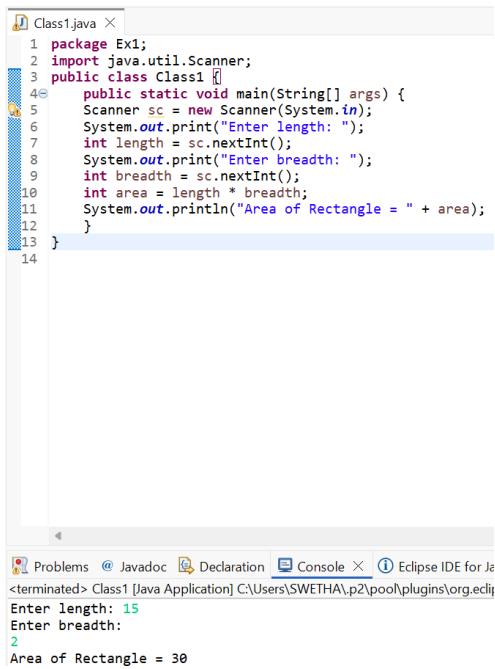
```
class AreaRectangleInput {
public static void main(String[] args) {
Scanner sc = new Scanner(System.in);
System.out.print("Enter length: ");
int length = sc.nextInt();
System.out.print("Enter breadth: ");
int breadth = sc.nextInt();
int area = length * breadth;
System.out.println("Area of Rectangle = " + area);
}
```

Output:

```
Enter length: 15
```

Enter breadth: 2

Area of Rectangle = 30



The screenshot shows the Eclipse IDE interface. On the left is the Java code editor with a file named 'Class1.java'. The code defines a class 'Class1' with a main method that prompts for length and breadth, calculates the area, and prints it. On the right is the 'Console' view showing the execution output.

```
1 package Ex1;
2 import java.util.Scanner;
3 public class Class1 {
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 }
```

```
Problems @ Javadoc Declaration Console Eclipse IDE for Java Developers [terminated] Class1 [Java Application] C:\Users\SWETHA\p2\pool\plugins\org.eclipse.jdt.core\src\Class1.java
Enter length: 15
Enter breadth:
2
Area of Rectangle = 30
```

POST LAB EXERCISE

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

The **Scanner class** is used to **read input from the user** in a Java program.

- ✓ Which package contains the Scanner class?

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

- ✓ What does System.in represent?

System.in represents the **standard input stream**, usually the **keyboard**.

- ✓ What does System.out represent?

System.out represents the **standard output stream**, used to **display output on the screen**.

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

- nextInt()
- nextLine()

✓ What is the difference between next() and nextLine()?	
next()	nextLine()
Reads a single word	Reads the entire line
Stops at space	Reads text including spaces
Cannot read full sentences	Can read full sentences

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		