

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

```
Class1.java ×
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 your name: ");
7         String name = sc.nextLine();
8         System.out.println("Your name is: " + name);
9     }
10 }
11

Problems Javadoc Declaration Console × Eclipse IDE for Java
<terminated> Class1 [Java Application] C:\Users\SWETHA\p2\pool\plugins\org.eclipse
Enter your name: swetha
Your name is: swetha
```

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);

    }

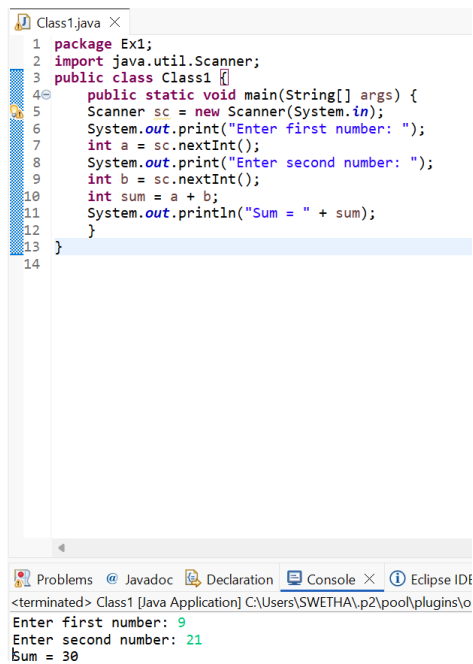
}
```

Output:

Enter first number: 9

Enter second number: 21

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);

}

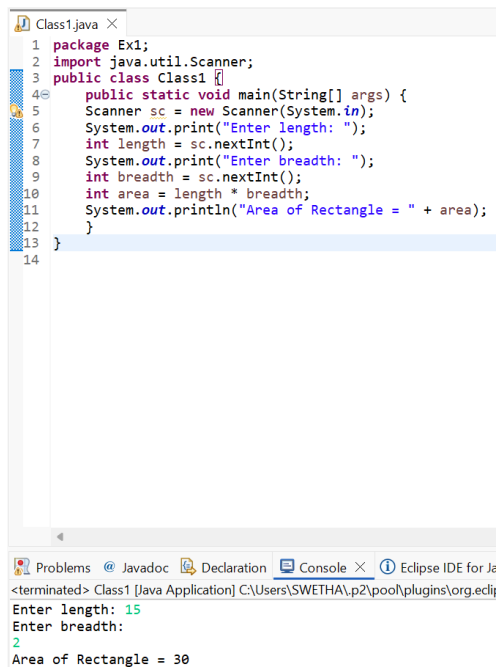
}
```

Output:

Enter length: 15

Enter breadth: 2

Area of Rectangle = 30



```
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 }
14
```

Problems @ Javadoc Declaration Console Eclipse IDE for Java
<terminated> Class1 [Java Application] C:\Users\SWETHA\p2\pool\plugins\org.eclipse.jdt.core\bin\java.exe
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()

Reads a **single word**

Stops at space

Cannot read full sentences

nextLine()

Reads the **entire line**

Reads text including spaces

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		