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 given to a program** for processing.
It is provided by the **user or another program**.

Example:
Entering a number from the keyboard.

2.What is output in a program?

Output is the **result produced by the program** after processing the input.
It is displayed to the **user**.

Example:
Displaying the sum of two numbers on the screen.

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.

Package: java.util.Scanner

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);
}
}
```
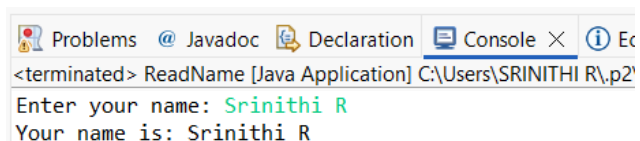
Output:


```
Problems  @ Javadoc  Declaration  Console  ×  Ed
<terminated> ReadName [Java Application] C:\Users\SRINITHI R\.p2\
Enter your name: Srinithi R
Your name is: Srinithi R
```
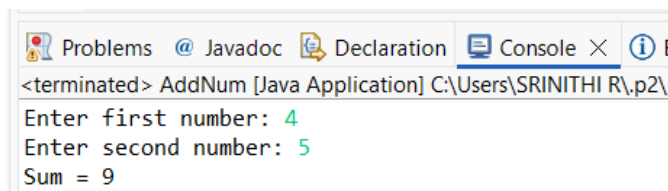
Program 2: Read Two Numbers and Print Sum

Source Code:

```java
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:

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

Source Code:

```java
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);

}

}
```
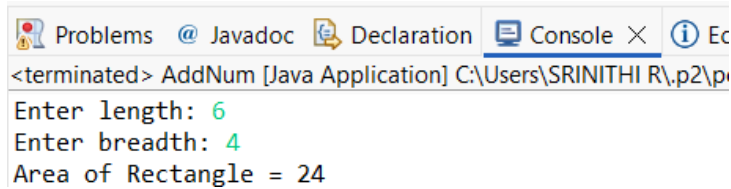
Output:

```
Problems  @ Javadoc  Declaration  Console ×  ⓘ Ec
<terminated> AddNum [Java Application] C:\Users\SRINITHI R\.p2\pe
Enter length: 6
Enter breadth: 4
Area of Rectangle = 24
```

POST LAB EXERCISE

1. What is the use of the Scanner class in Java?
   The **Scanner class** is used to **read input from the user** through the keyboard.

2. Which package contains the Scanner class?
   The **java.util** package contains the Scanner class.

3. What does System.in represent?
   System.in represents the **standard input stream**, used to take **input from the keyboard**.

4. What does System.out represent?
   System.out represents the **standard output stream**, used to **display output on the screen**.

5. Name any two methods used to read input using Scanner.
   - nextInt()
   - nextLine()

6. What is the difference between next() and nextLine()?

next()	nextLine()
Reads a single word	Reads a full line
Stops at space	Reads until Enter key
Cannot read spaces	Can read spaces

Example:

Input: Srinithi R

- next() → Srinithi

- nextLine() → Srinithi R

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		