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 **information or values provided to a program** to perform a task.

2)What is output in a program?

Output is the **final result shown by the program** after execution.

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

Scanner from java.util package

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:

```java
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);

}

}
```
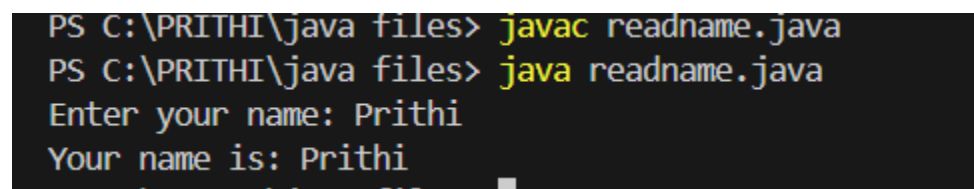
Output:

Enter your name: Anitha

Your name is: Anitha

```
PS C:\PRITHI\java files> javac readname.java
PS C:\PRITHI\java files> java readname.java
Enter your name: Prithi
Your name is: Prithi
```

Program 2: Read Two Numbers and Print Sum

Source Code:

```java
import java.util.Scanner;

class SumInput {

public static void main(String[] args) {
```
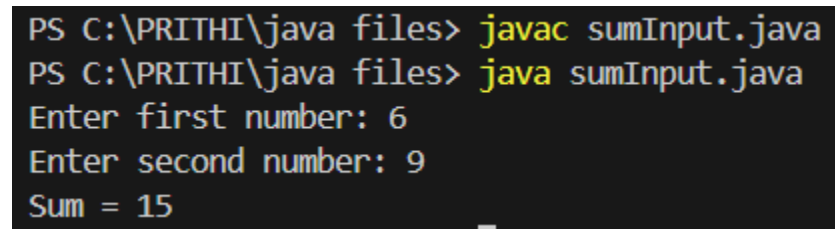
```java
Scanner sc = new Scanner(System.in);

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

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:

Enter length: 10

Enter breadth: 5

Area of Rectangle = 50

```
PS C:\PRITHI\java files> javac AreaRectangleInput.java
PS C:\PRITHI\java files> java AreaRectangleInput.java
Enter length: 8
Enter breadth: 7
Area of Rectangle = 56
```

POST LAB EXERCISE

✓ **What is the use of the Scanner class in Java?**
It is used to used to read the input from user,

✓ **Which package contains the Scanner class?**
java.util

✓ **What does System.in represent?**
System.in represents the standard input stream, which takes input from the keyboard.

✓ **What does System.out represent?**
System.out represents the standard output stream, which displays output on the screen

✓ **Name any two methods used to read input using Scanner.**
nextInt() – reads an integer value
nextFloat() – reads a float value

✓ **What is the difference between next() and nextLine()?**

next()	nextLine()
Reads a single word	Reads a full line of text
Stops at space	Reads input including spaces
Cannot read spaces	Can read 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		