Experiment Number : 03 **Date: 22-1-2026**

Control Statements in Java

Aim:

To understand and implement decision-making and looping control statements in Java.

PRE LAB EXERCISE

QUESTIONS

1. List different control statements in Java.

Selection (Decision) statements:

- if
- if-else
- switch

Iteration (Looping) statements:

- for
- while
- do-while

Jump statements:

- break
- continue
- return

2. Difference between for, while, and do-while loops.

Feature	for loop	while loop	do-while loop
Condition check	Before loop	Before loop	After loop
Minimum execution	0 times	0 times	**At least once**
Best used when	Number of iterations is known	Condition-based looping	Loop must run at least once

Feature	for loop	while loop	do-while loop
Syntax	Compact	Simple	Slightly longer

3. What is the use of break and continue?

Break:

- Used to **terminate the loop or switch**
- Control moves **outside the loop**

Continue:

- Used to **skip the current iteration**
- Control moves to **next iteration**

IN LAB EXERCISE

Objective:

To implement if-else and looping 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:

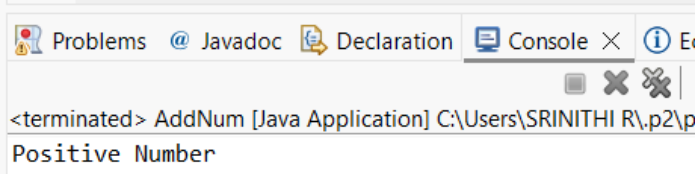
- ✓ nextInt() – reads an integer value
- ✓ nextFloat() – reads a float value
- ✓ nextDouble() – reads a double value
- ✓ next() – reads a single word
- ✓ nextLine() – reads a complete line of text

PROGRAMS:

Program 1: Check Whether a Number is Positive

```
class PositiveNumber {
public static void main(String[] args) {
int n = 10;
if (n > 0) {
System.out.println("Positive Number");
}
}
}
```

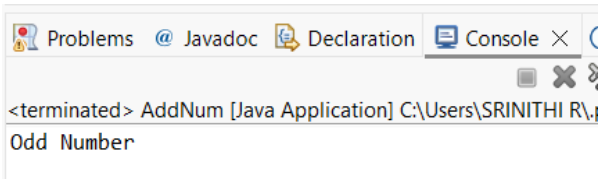
Output:



Program 2: Check Whether a Number is Even or Odd

```
class EvenOdd {
public static void main(String[] args) {
int n = 7;
if (n % 2 == 0)
System.out.println("Even Number");
else
System.out.println("Odd Number");
}
}
```

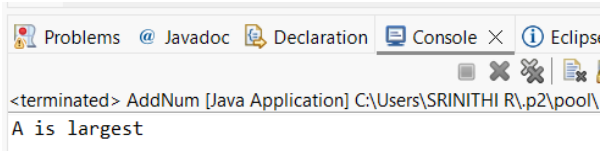
Output:



Program 3: Find Largest of Two Numbers

```
class LargestTwo {
public static void main(String[] args) {
int a = 20, b = 10;
if (a > b)
System.out.println("A is largest");
else
System.out.println("B is largest");
}
}
```

Output:

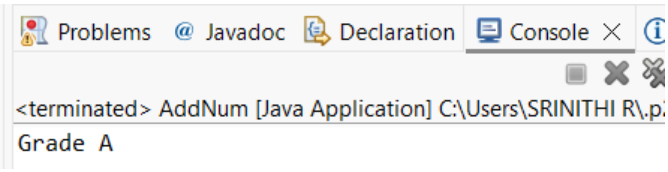


Program 4: Grade Calculation

```
class Grade {
public static void main(String[] args) {
int marks = 95;
if (marks >= 90)
System.out.println("Grade A");
else if (marks >= 75)
System.out.println("Grade B");
else if (marks >= 50)
System.out.println("Grade C");
else
```

```
System.out.println("Fail");
}
}
```

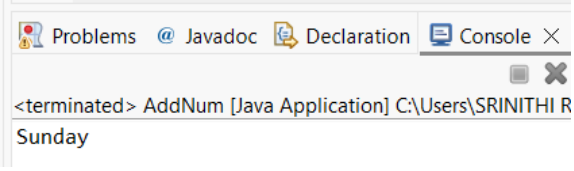
Output:



Program 5: Day of the Week

```
class DaySwitch {
public static void main(String[] args) {
int day = 7;
switch (day) {
case 1: System.out.println("Monday"); break;
case 2: System.out.println("Tuesday"); break;
case 3: System.out.println("Wednesday"); break;
case 4: System.out.println("Thursday"); break;
case 5: System.out.println("Friday"); break;
case 6: System.out.println("Saturday"); break;
case 7: System.out.println("Sunday"); break;
default: System.out.println("Invalid Day");
}
}
}
```

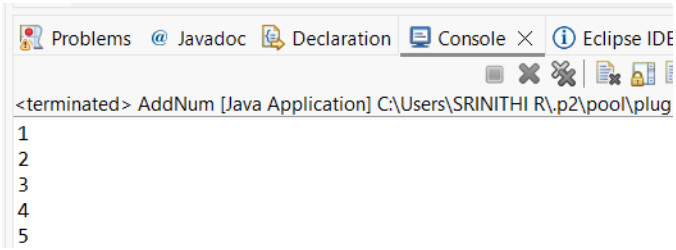
Output:



Program 6: Print Numbers from 1 to 5

```
class ForLoop {
public static void main(String[] args) {
for (int i = 1; i <= 5; i++) {
System.out.println(i);
}
}
}
```

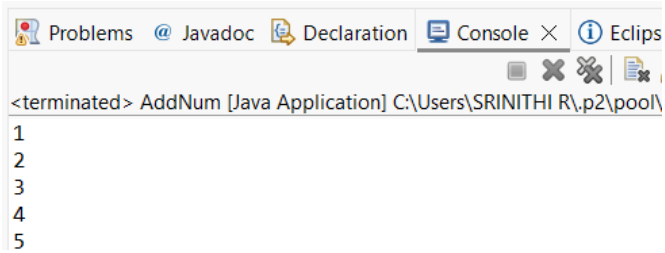
Output:



Program 7: Print Numbers from 1 to 5

```
class WhileLoop {
public static void main(String[] args) {
int i = 1;
while (i <= 5) {
System.out.println(i);
i++;
}
}
}
```

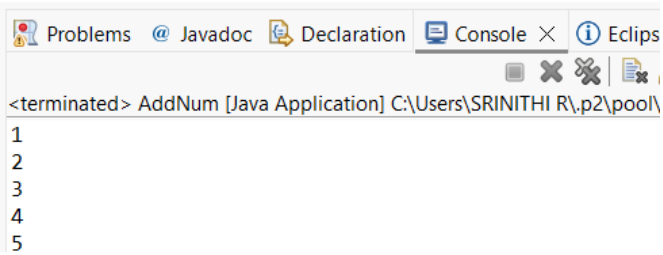
Output:



Program 8: Print Numbers from 1 to 5

```
class DoWhileLoop {
public static void main(String[] args) {
int i = 1;
do {
System.out.println(i);
i++;
} while (i <= 5);
}
}
```

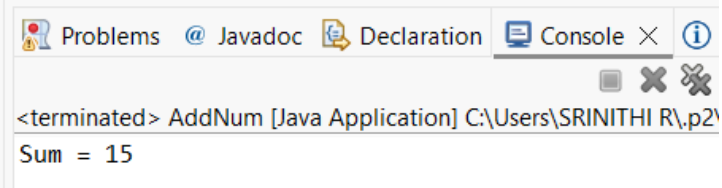
Output:



Program 9: Sum of First 5 Natural Numbers

```
class SumNumbers {
public static void main(String[] args) {
int sum = 0;
for (int i = 1; i <= 5; i++) {
sum = sum + i;
}
System.out.println("Sum = " + sum);
}
}
```

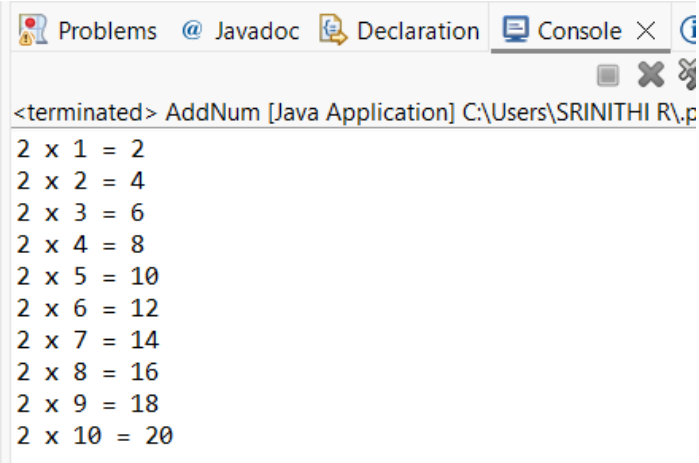
Output:



Program 10: Multiplication Table of a Number

```
class MultiplicationTable {
public static void main(String[] args) {
int n = 2;
for (int i = 1; i <= 10; i++) {
System.out.println(n + " x " + i + " = " + (n * i));
}
}
}
```

Output:



POST LAB EXERCISE

1. What is the use of if statement?
   The **if statement** is used to **execute a block of code when a condition is true**.

2. Difference between if-else and else-if ladder.

   - **if-else**: Used to choose between **two conditions**

- **else-if ladder**: Used to choose between **multiple conditions**

3. Why is switch statement used?
   The **switch statement** is used to **select one block of code from many choices** based on a value.

4. Difference between for, while, and do-while loops.
   - **for loop**: Used when number of iterations is known
   - **while loop**: Condition checked before loop
   - **do-while loop**: Executes at least once

5. Which loop executes at least once?

   The **do-while loop** executes **at least once**.

Result:

Thus the different control statements were executed successfully with expected output.

ASSESSMENT

Description	Max Marks	Marks Awarded
Pre Lab Exercise	**5**	
In Lab Exercise	**10**	
Post Lab Exercise	**5**	
Viva	**10**	
Total	**30**	
Faculty Signature		