Experiment Number : 03 **Date: 27.01.2026**

Control Statements in Java

Aim:

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

PRE LAB EXERCISE

QUESTIONS

- ✓ **List different control statements in Java.**

Control statements control the flow of execution of a program.
They are mainly of **three types**:
Selection (Decision-making) Statements
Used to make decisions based on conditions.

- if
- if–else
- else–if ladder
- switch

Iteration (Looping) Statements
Used to execute a block of code repeatedly.

- for
- while
- do-while

Jump (Branching) Statements
Used to transfer control from one part of the program to another.

- break
- continue
- return

- ✓ **Difference between for, while, and do-while loops.**

Feature	for loop	while loop	do-while loop
Condition check	Before loop starts	Before loop starts	After loop executes
Minimum execution	0 times	0 times	**At least 1 time**

Feature	for loop	while loop	do-while loop
Best used when	Number of iterations is known	Iterations not known	Loop must run at least once
Syntax	Compact	Simple	Ends with semicolon

- ✓ **What is the use of break and continue?**

Break:

- Immediately **terminates the loop or switch**
- Control goes to the statement after the loop

Continue:

- **Skips the current iteration**
- Moves to the next loop 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 = 5;
if (n > 0) {
System.out.println("Positive Number");
}
}
}
```

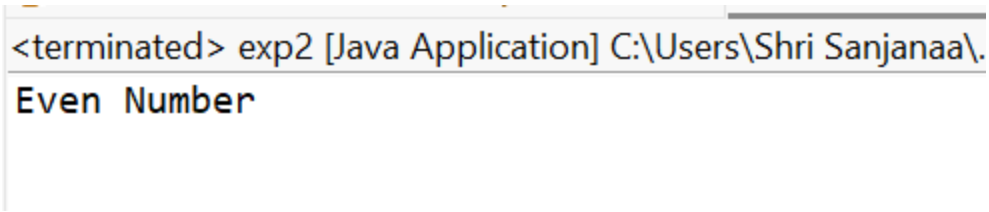
Output:

```
<terminated> exp2 [Java Application] C:\Users\Shri Sanjanaa
Positive Number
```

Program 2: Check Whether a Number is Even or Odd

```
class EvenOdd {
public static void main(String[] args) {
int n = 6;
if (n % 2 == 0)
System.out.println("Even Number");
else
System.out.println("Odd Number");
}
}
```

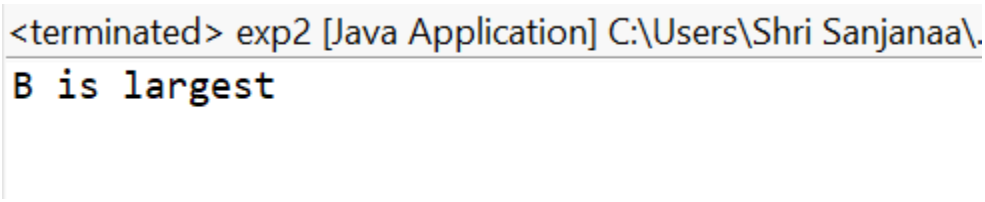
Output:



Program 3: Find Largest of Two Numbers

```
class LargestTwo {
public static void main(String[] args) {
int a = 10, b = 20;
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 = 75;
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:

```
<terminated> exp2 [Java Application] C:\Users\Shri Sanjanaa
Grade B
```

Program 5: Day of the Week

```
class DaySwitch {
public static void main(String[] args) {
int day = 3;
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;
default: System.out.println("Invalid Day");
}
}
}
```

Output:

```
<terminated> exp2 [Java Application] C:\Users\Shri Sanjanaa\
Wednesday
```

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:

```
<terminated> exp2 [Java Application] C:\Users\
1
2
3
4
5
```

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++;
}
}
```

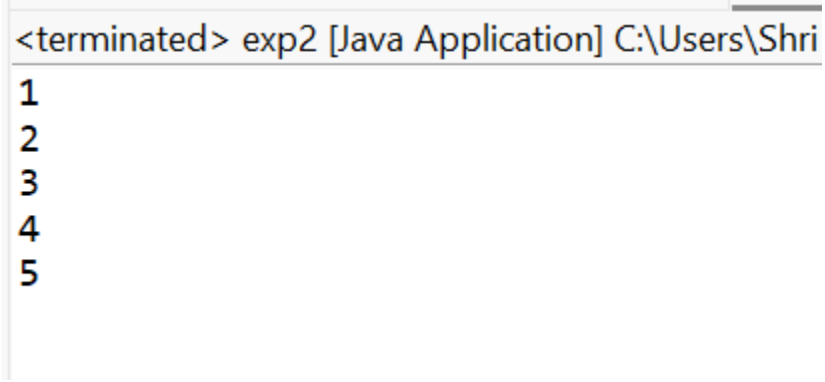
Output:

```
<terminated> exp2 [Java Application] C:\Users\Shri S
1
2
3
4
5
```

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);
}
```

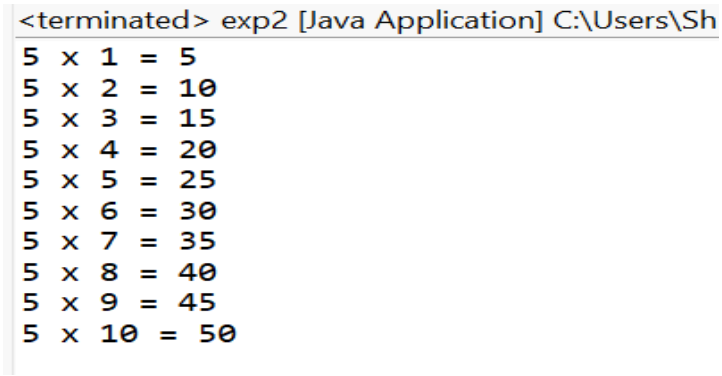
}

Output:

Program 10: Multiplication Table of a Number

```
class MultiplicationTable {
public static void main(String[] args) {
int n = 5;
for (int i = 1; i <= 10; i++) {
System.out.println(n + " x " + i + " = " + (n * i));
}
}
}
```

Output:



POST LAB EXERCISE

- ✓ **What is the use of if statement?**

  The if statement is used to execute a block of code only when a given condition is true.

  Example:

```
if (marks >= 50) {
   System.out.println("Pass");}
```

✓ **Difference between if-else and else-if ladder.**

Feature	if-else	else-if ladder
Number of conditions	One condition	Multiple conditions
Used when	Two choices	Many choices
Execution	One block executes	First true block executes
Complexity	Simple	More complex

✓ **Why is switch statement used?**

The switch statement is used to select one execution path from many options based on the value of a single variable or expression.
It makes the code cleaner and more readable than multiple else-if statements.
Example use: menu-driven programs.

✓ **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 1 time**
Best suited when	Iterations known	Iterations unknown	Must run once

✓ **Which loop executes at least once?**

The do-while loop executes at least once because the condition is checked after the loop body.

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		