Experiment Number : 03 **Date: 28.01.2026**

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 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.
   - for loop — Used when the number of iterations is known in advance
   - while loop — Used when the number of iterations is not known beforehand
   - do-while loop — Executes the loop body at least once, even if the condition is false

3. What is the use of break and continue?
   - break: Used to terminate the loop or switch statement immediately.
   - continue: Used to skip the current iteration and move to the next iteration of the loop.

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:

```
Positive Number
```

Program 2: Check Whether a Number is Even or Odd

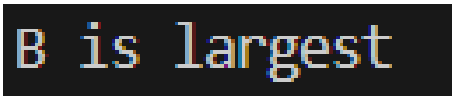
```
class EvenOdd {
public static void main(String[] args) {
int n = 6;
if (n % 2 == 0)
System.out.println("Even Number");
else
System.out.println("Odd Number");
}}
```

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:

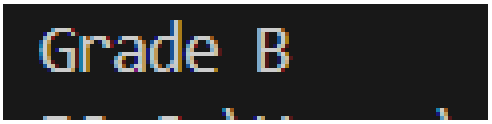


Program 4: Grade Calculation

```
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");
}}
```

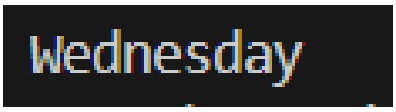
Output:



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");
}}}
```

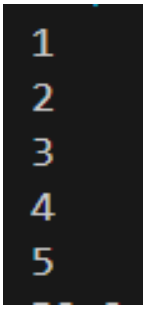
Output:



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);
}}}
```

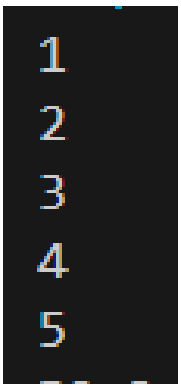
Output:



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:

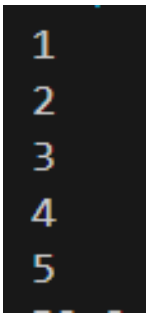


Program 8: Print Numbers from 1 to 5

```
class DoWhileLoop {
public static void main(String[] args) {
int i = 1;
```

```
do {
System.out.println(i);
i++;
} while (i <= 5);
}}
```

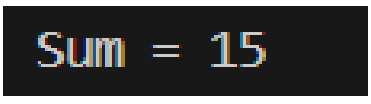
Output:



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 = 5;

for (int i = 1; i <= 10; i++) {

System.out.println(n + " x " + i + " = " + (n * i));

}}}
```

Output:

```
7x1=7
7x2=14
7x3=21
7x4=28
7x5=35
7x6=42
7x7=49
7x8=56
7x9=63
7x10=70
```

POST LAB EXERCISE

1. What is the use of if statement?

   The `if` statement is used to **check a condition**. If the condition is true, the given block of code is executed; otherwise, it is skipped.

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

if-else	**else-if ladder**
Used to check **only two conditions**	Used to check **multiple conditions**
Executes one of two blocks	Executes the block whose condition is true
Simpler structure	Suitable for multiple choices

3. Why is switch statement used?

   The switch statement is used to **select one option from many choices**. It makes the program **simpler and more readable** when comparing a variable with multiple constant values.

4. Difference between for, while, and do-while loops.
    - for loop — Used when the number of iterations is known in advance
    - while loop — Used when the number of iterations is not known beforehand
    - do-while loop — Executes the loop body at least once, even if the condition is false

5. 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	