**Experiment Number : 03** **Date: 28/1/2026**

## 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 in Java are used to control the flow of execution of a program. They are mainly classified into three types:
  Selection statements such as if, if-else, switch
  Looping statements such as for, while, do-while
  Jump statements such as break, continue, and return

- ✓ **Difference between for, while, and do-while loops.?**
  The for loop is used when the number of iterations is known in advance and it checks the condition before executing the loop body.
  The while loop is used when the number of iterations is not known and it also checks the condition before executing the loop body.
  The do-while loop executes the loop body at least once because the condition is checked after the loop body is executed.

- ✓ **What is the use of break and continue?**
  The break statement is used to terminate the loop or switch statement immediately and transfer control to the next statement after the loop.
  The continue statement is used to skip the current iteration of a loop and move to the 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 = 5;

if (n > 0) {

System.out.println("Positive Number");

}

}

}
```

Output:

Positive Number

```java
class PositiveNumber {
public static void main(String[] args) {
int n = 5;
if (n > 0) {
System.out.println("Positive Number");
}
}
}
```

```
Positive Number

=== Code Execution Successful
```

**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:

Even Number

```java
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");
}
}
```

```
Even Number

=== Code Execution Successful
```

**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:

B is largest

```
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");
}
}
```

```
B is largest

=== Code Execution Successful
```

**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:

Grade B

```
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");
}
}
```

```
Grade B

=== Code Execution Successful
```

**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:

Wednesday

```java
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");
}
}
}
```

```
Wednesday

=== Code Execution Successful
```

**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:

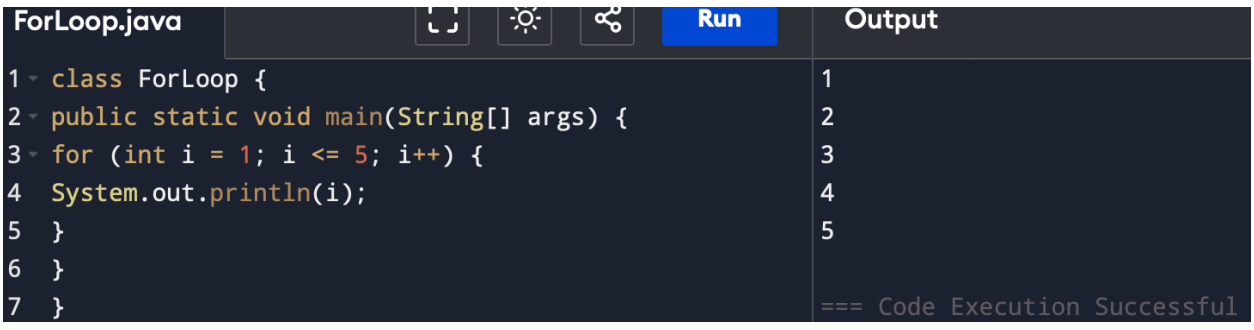
1

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:

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:

1

2

3

4

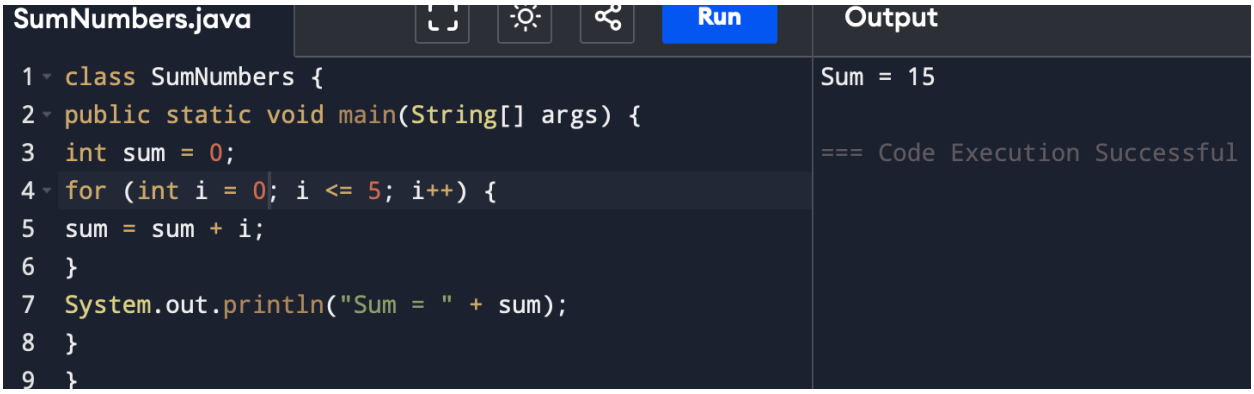
5


**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:

Sum = 15




**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:

6 x 1 = 6

6 x 2 = 12

6 x 3 = 18

6x 4 = 24

6 x 5 = 30

6 x 6 = 36

6 x 7 = 42

6 x 8 = 48

6 x 9 = 54

6x 10 = 60

MultiplicationTable.java

```java
class MultiplicationTable {
public static void main(String[] args) {
int n = 6;
for (int i = 1; i <= 10; i++) {
System.out.println(n + " x " + i + " = " + (n * i));
}
}
}
```

Output

```
6 x 1 = 6
6 x 2 = 12
6 x 3 = 18
6 x 4 = 24
6 x 5 = 30
6 x 6 = 36
6 x 7 = 42
6 x 8 = 48
6 x 9 = 54
```

**POST LAB EXERCISE**

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

  The if statement in Java is used to check a condition and execute a set of statements only if the condition is true. It helps in making decisions and controlling the flow of a program.

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

  The if-else statement is used to choose between two alternatives based on a condition, whereas the else-if ladder is used to check multiple conditions one by one and execute the block corresponding to the first true condition.

- ✓ **Why is switch statement used**

  The switch statement is used to select and execute one block of code from multiple options based on the value of a variable or expression. It makes the program simpler and more readable when handling many choices.

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

  The for loop is used when the number of iterations is known in advance, the while loop is used when the condition is checked before executing the loop body, and the do-while loop executes the loop body at least once because the condition is checked after execution

- ✓ **Which loop executes at least once?**
  The do-while loop executes at least once because the condition is checked only after the loop body is executed.

**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 | |