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

- ✓ List different control statements in Java.

Selection (Decision-making) statements

- if
- if–else
- else–if
- switch

Looping (Iteration) statements

- for
- while
- do-while

Jump (Branching) statements

- 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 body
Minimum execution	0 times	0 times	**At least 1 time**
Best used when	Number of iterations is known	Condition-based looping	Loop must run once
Syntax	Compact	Simple	Slightly different

Example:
If condition is false initially:

- for → not executed
- while → not executed
- do-while → executed once

✓ What is the use of break and continue?

break

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

Example use: stop loop when a condition is met.

continue

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

Example use: skip unwanted values but continue looping.

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

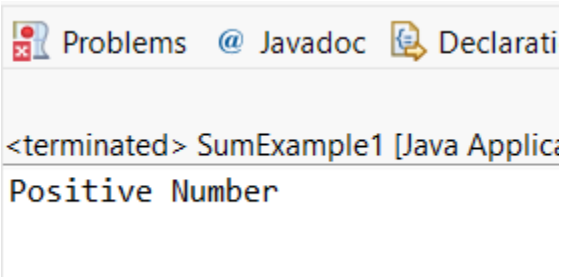
PROGRAMS:

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



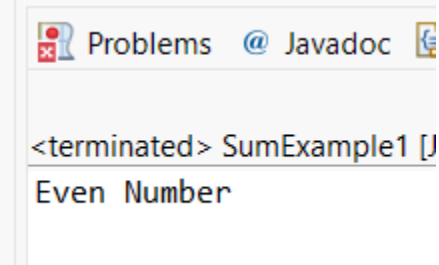
Program 2: Check Whether a Number is Even or Odd

```
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:

Even Number

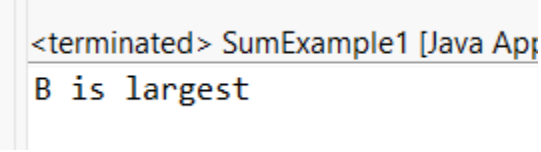


Program 3: Find Largest of Two Numbers

```
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



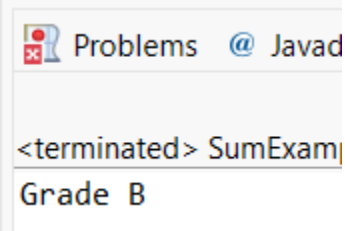
Program 4: Grade Calculation

```
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

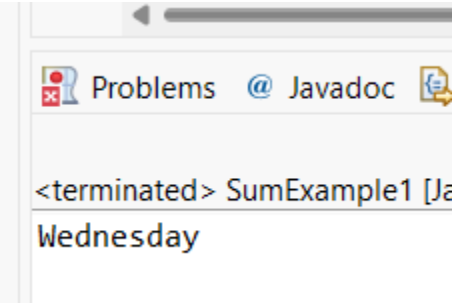


Program 5: Day of the Week

```
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



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:

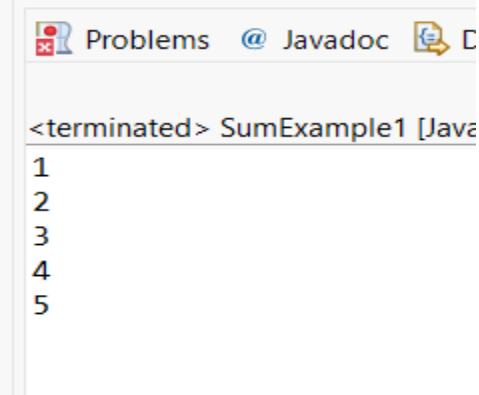
1

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:

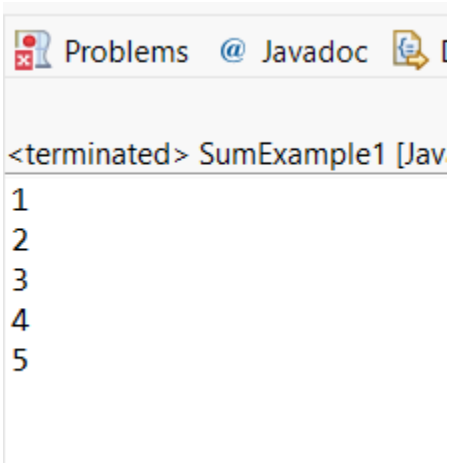
1

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:

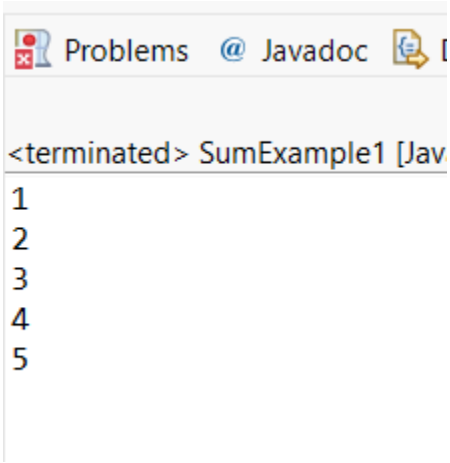
1

2

3

4

5



Program 9: Sum of First 5 Natural Numbers

class SumNumbers {

public static void main(String[] args) {

int sum = 0;

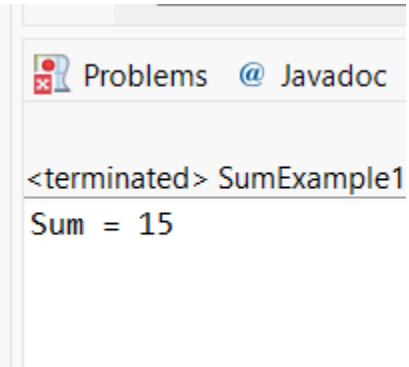
for (int i = 1; i <= 5; i++) {

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:

5 x 1 = 5

5 x 2 = 10

5 x 3 = 15

5 x 4 = 20

5 x 5 = 25

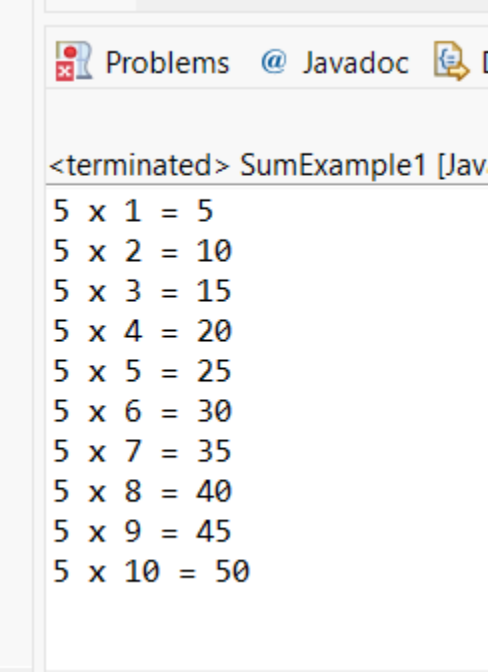
5 x 6 = 30

5 x 7 = 35

5 x 8 = 40

5 x 9 = 45

5 x 10 = 50



POST LAB EXERCISE

- ✓ 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.
  Use: Decision making in a program.

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

if-else	**else-if ladder**
Used to check **two conditions**	Used to check **multiple conditions**
Only one if and one else	Multiple else-if blocks
Simple decision making	Multiple choice decision making

- if-else → pass / fail
- else-if ladder → grade system (A, B, C, D)

- ✓ Why is switch statement used?
  The switch statement is used to select one option from many choices based on the value of a variable.
  Use:
  Makes code cleaner and easier to read
  Alternative to long else-if ladder

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

Feature	for	while	do-while
Condition check	Before loop	Before loop	After loop
Executes at least once	No	No	Yes
Best used when	Iterations known	Condition-based	Must run once

- ✓ Which loop executes at least once?
  The do-while loop executes at least once, even if the condition is false.

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		