Experiment Number : 03 **Date: 29/01/2026**

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.

1. **Selection (Decision) Statements**

Used to make decisions.

- if
- if-else
- else-if
- switch

2. Looping (Iteration) Statements

Used to repeat a block of code.

- for
- while
- do-while

3. Jump Statements

Used to change the normal flow.

- 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	Condition-based looping	Loop must run once

- ✓ What is the use of break and continue?

Break

- Stops the loop immediately
- Control comes out of the loop

continue

- Skips the current iteration
- Loop continues with 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

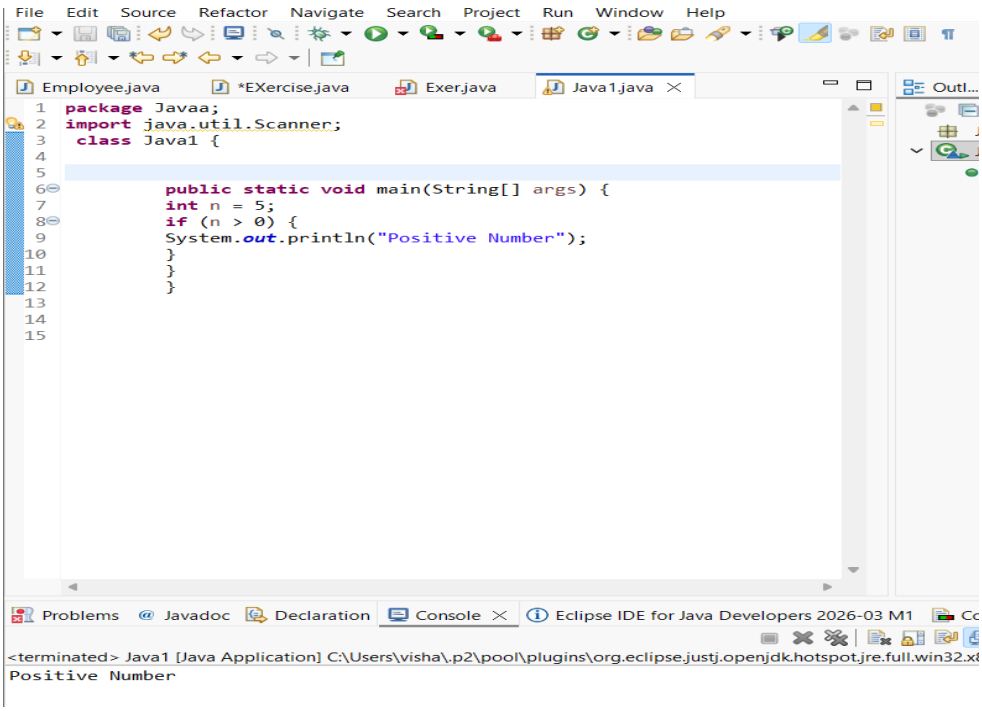
PROGRAMS:

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



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

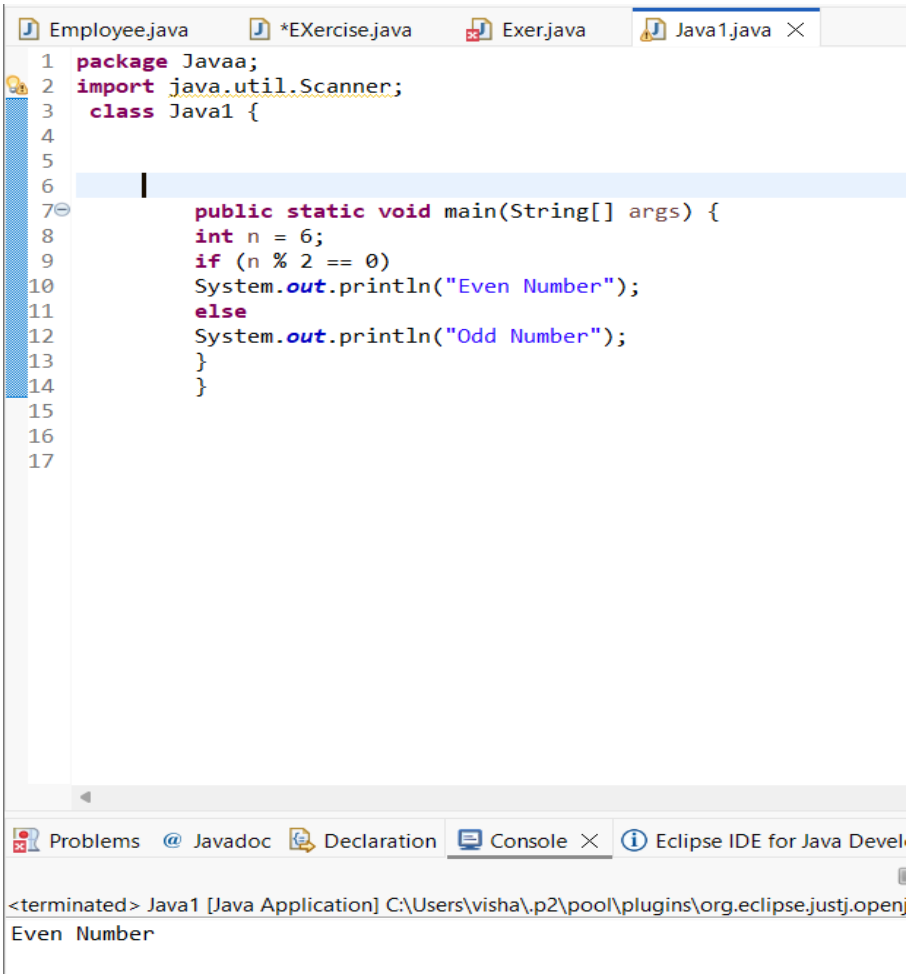
System.out.println("Odd Number");

}

}

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

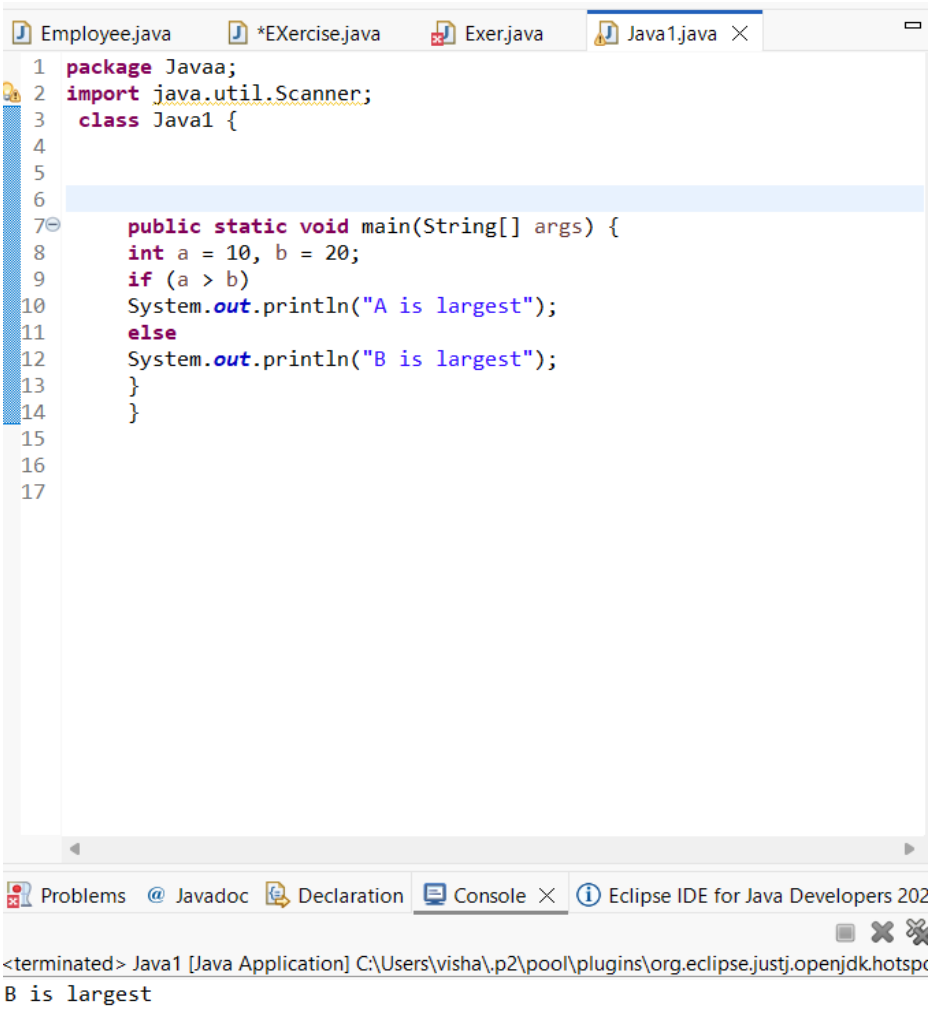
System.out.println("B is largest");

}

}

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

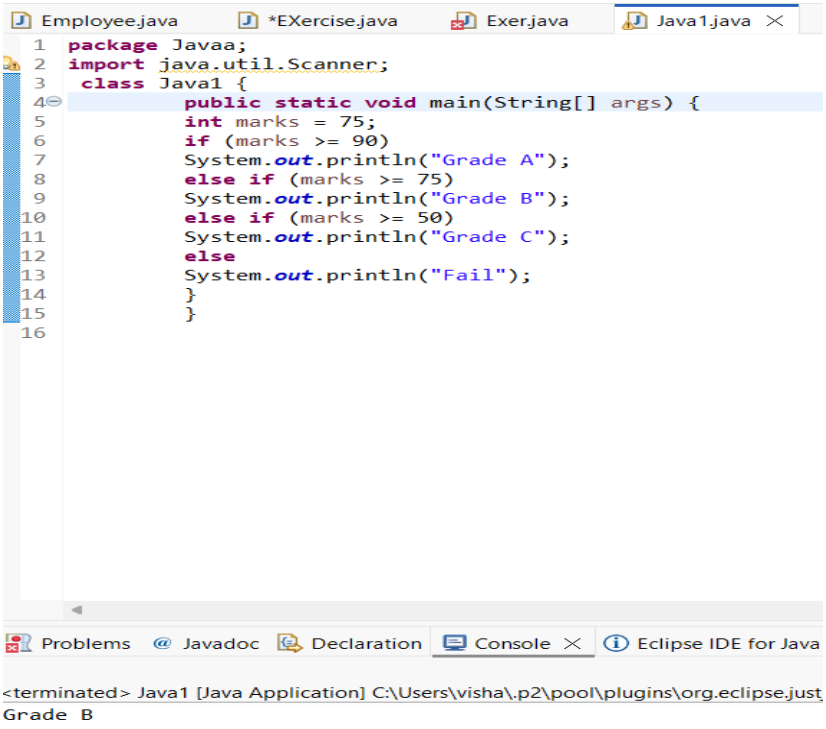
System.out.println("Fail");

}

}

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");

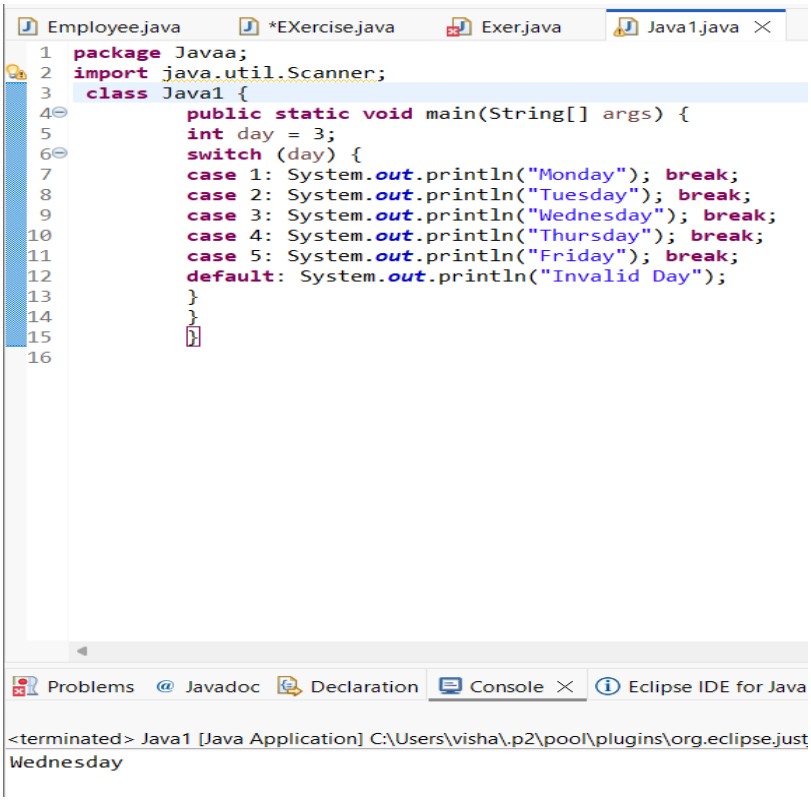
}

}

}

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:

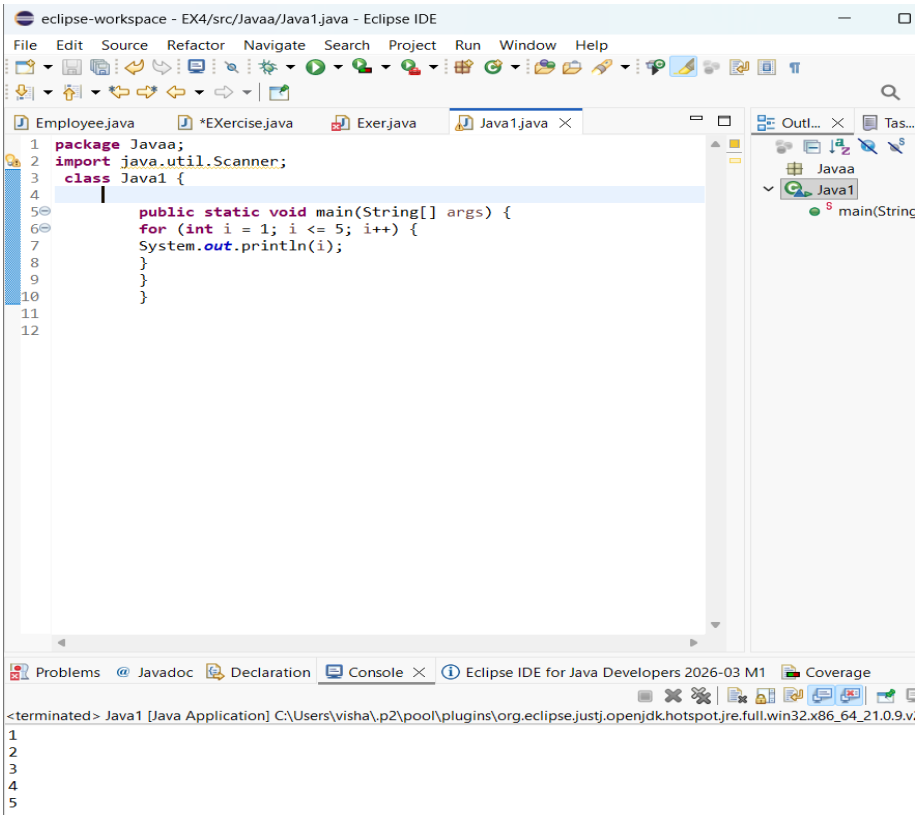
1

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:

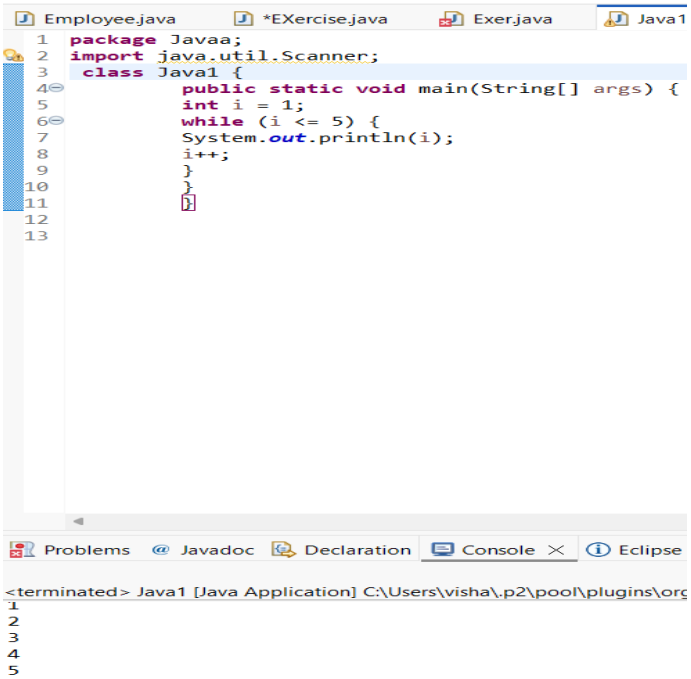
1

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:

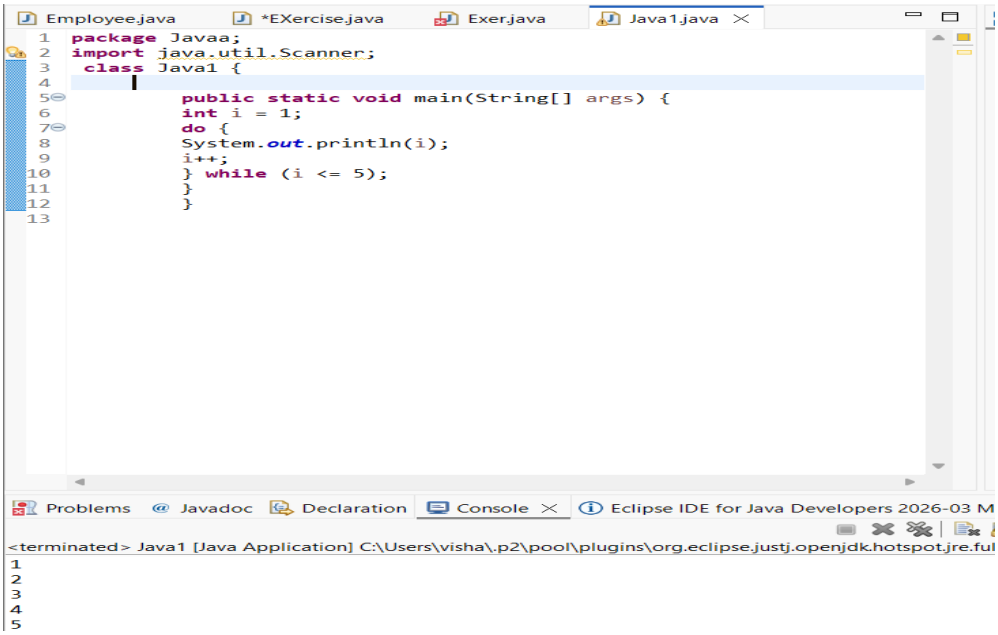
1

2

3

4

5



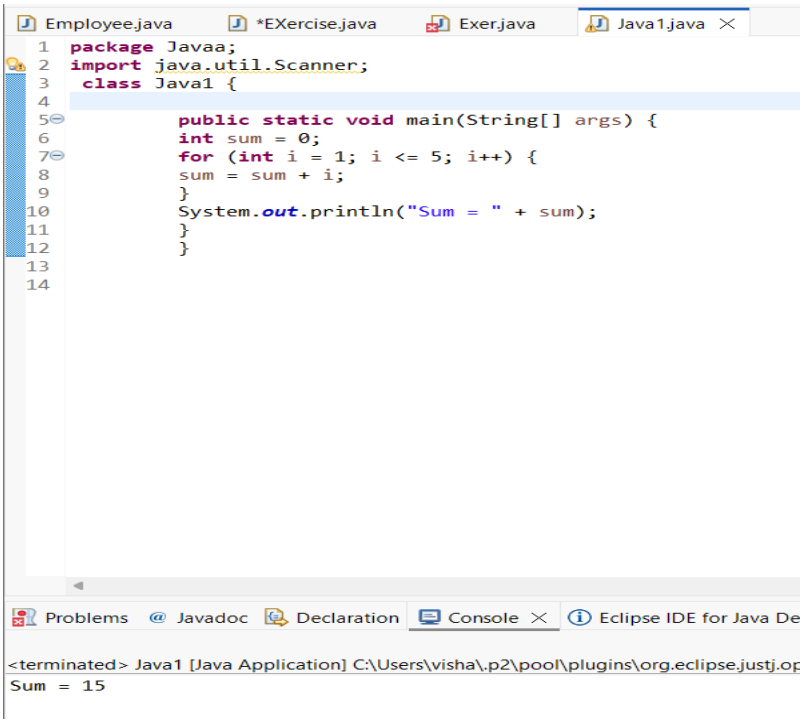
Program 9: Sum of First 5 Natural Numbers

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

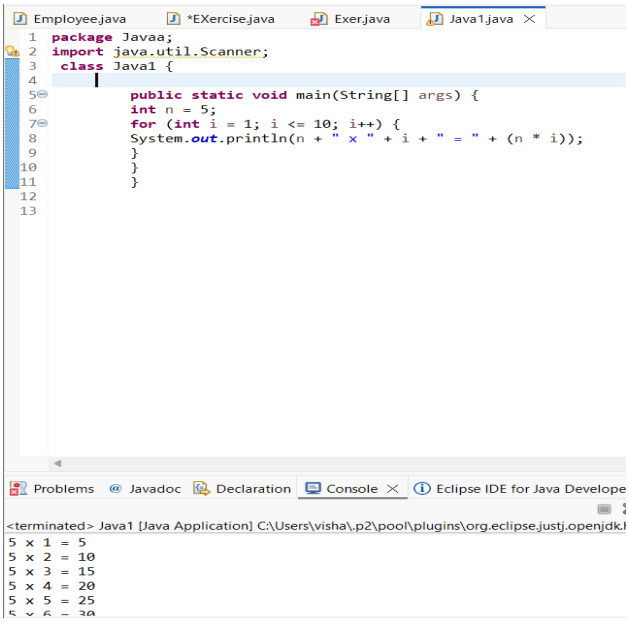
5 x 6 = 30

5 x 7 = 35

5 x 8 = 40

5 x 9 = 45

5 x 10 = 50



```
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 code inside `if` is executed.
  - If it is false, the code is skipped.

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

Feature	**if-else**	**else-if ladder**
Conditions	Only one condition	Multiple conditions
Choices	Two choices	Many choices
Execution	Either if or else	First true condition executes

- ✓ Why is switch statement used?

  switch is used to select one option from many choices.
  It is easier and cleaner than multiple else-if statements.
  Works with values like int, char, String.

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

Feature	**for**	**while**	**do-while**
Condition check	Before loop	Before loop	After loop

Feature	for	while	do-while
Executes	0 or more times	0 or more times	At least once
Best used when	Count is known	Condition-based	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	