Experiment Number : 03 **Date: 29.01.26**

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.
  Ans: conditional statements - if,if-else,switch
  Looping statements – for,while,do-while
  Jump statements – break,continue,return
- ✓ Difference between for, while, and do-while loops.
  Ans: for loop – Used when we know how many times the loop should run.
  while loop – Used when we do not know the exact number of times.
  do-while loop – Runs at least one time even if the condition is false.
- ✓ What is the use of break and continue?

  Ans: break – Stops the loop completely.
  continue – Skips the current loop step and moves to the next step.

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");
}
}
}
```

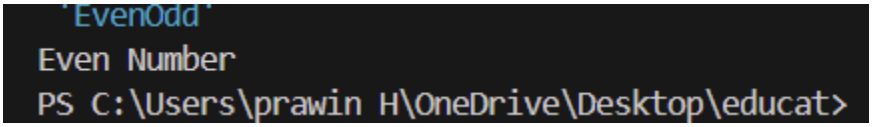
Output:

```
PositiveNumber
Positive Number
PS C:\Users\prawin H\OneDrive\Desktop\educat>
```

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");
}
}
```

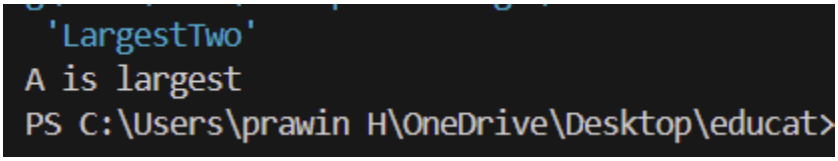
Output:



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:

```
e0fec2abefad\redhat.java\jdt_ws\educat_f0b7a213\
Grade C
PS C:\Users\prawin H\OneDrive\Desktop\educat>
```

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:

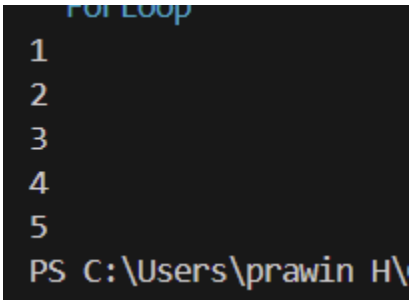
```
e0fec2abefad\redhat.java\jdt_ws\educat_f0b7a21
Friday
PS C:\Users\prawin H\OneDrive\Desktop\educat>
```

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);
}
}
}
```

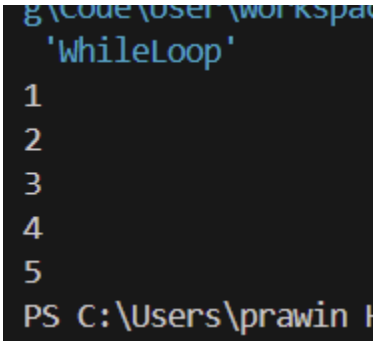
Output:



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);

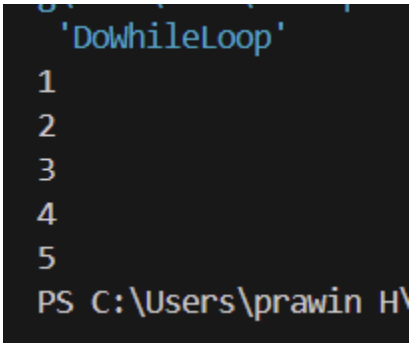
i++;

} 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 <= 7; i++) {

sum = sum + i;

}

System.out.println("Sum = " + sum);

}

}

Output:

```
e0fec2abefad\redhat.java
Sum = 28
PS C:\Users\prawin H\One
```

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:

```
 'MultiplicationTable'
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
PS C:\Users\prawin H\OneDrive\Desktop\educat
```

POST LAB EXERCISE

- ✓ What is the use of if statement?

Ans: It is used to check condition and excute code if condition is true.

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

Ans: if-else – Used when there are only two choices.
else-if ladder – Used when there are many conditions to check.

✓ Why is switch statement used?

Ans: It is used to select one option from many choices.

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

Ans: for loop – Used when we know how many times the loop should run.
while loop – Used when we do not know the exact number of times.
do-while loop – Runs at least one time even if the condition is false.

✓ Which loop executes at least once?

Ans: do-while loop

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	