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.

   Control statements are used to control the flow of execution of a Java program. They are of three types:

   Selection statements such as if, if-else, else-if ladder, and switch, which are used for decision making.

   Iteration statements such as for, while, and do-while, which are used to repeat a block of code.

   Jump statements such as break, continue, and return, which are used to transfer control from one part of the program to another.

2. 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 execution. The do-while loop executes the loop body at least once because the condition is checked only after the loop body is executed.

3. What is the use of break and continue?

   The break statement is used to immediately terminate a loop or a switch statement and transfer control to the statement following it. The continue statement is used to skip the current iteration of a loop and proceed with the next iteration without terminating 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

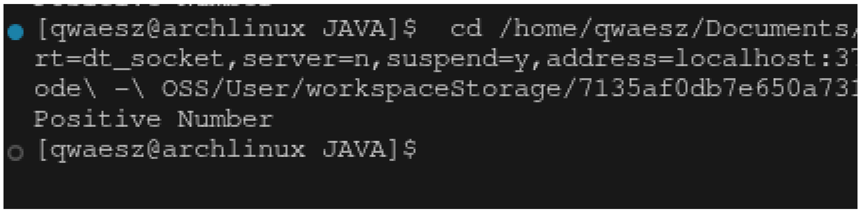
PROGRAMS:

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



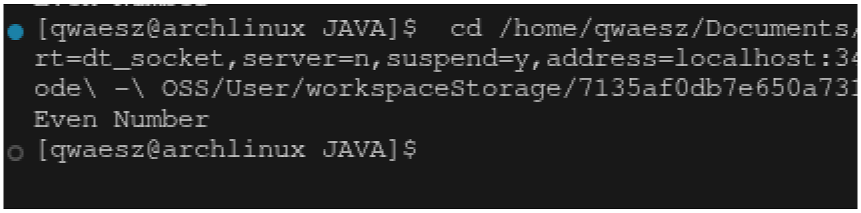
```
[qwaesz@archlinux JAVA]$  cd /home/qwaesz/Documents,
rt=dt_socket,server=n,suspend=y,address=localhost:37
ode\ -\ OSS/User/workspaceStorage/7135af0db7e650a731
Positive Number
[qwaesz@archlinux JAVA]$
```

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



```
[qwaesz@archlinux JAVA]$  cd /home/qwaesz/Documents,
rt=dt_socket,server=n,suspend=y,address=localhost:34
ode\ -\ OSS/User/workspaceStorage/7135af0db7e650a731
Even Number
[qwaesz@archlinux JAVA]$
```

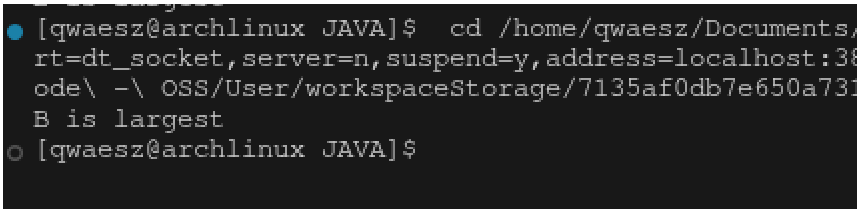
Program 3: Find Largest of Two Numbers

```
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



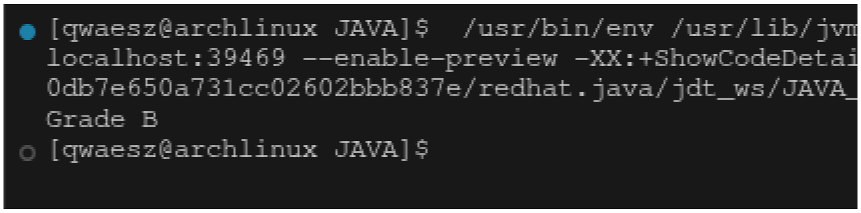
```
[qwaesz@archlinux JAVA]$  cd /home/qwaesz/Documents/
rt=dt_socket,server=n,suspend=y,address=localhost:3
ode\ -\ OSS/User/workspaceStorage/7135af0db7e650a731
B is largest
[qwaesz@archlinux JAVA]$
```

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



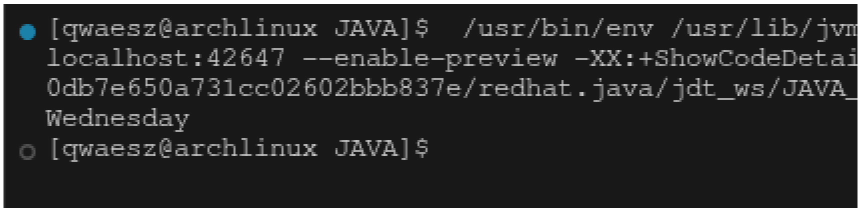
```
● [qwaesz@archlinux JAVA]$  /usr/bin/env /usr/lib/jvm
  localhost:39469 --enable-preview -XX:+ShowCodeDetai
  0db7e650a731cc02602bbb837e/redhat.java/jdt_ws/JAVA_
  Grade B
○ [qwaesz@archlinux JAVA]$
```

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



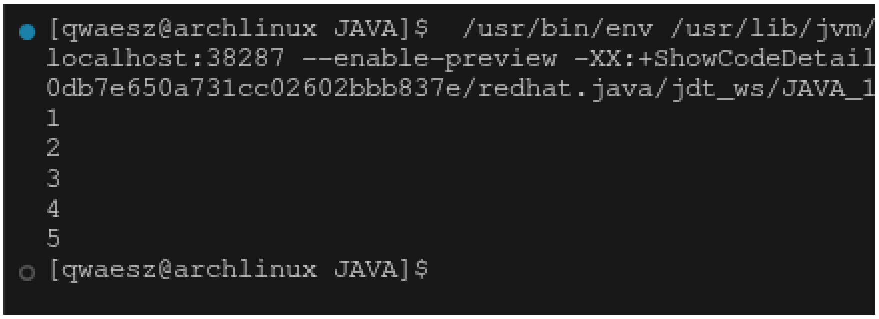
```
● [qwaesz@archlinux JAVA]$  /usr/bin/env /usr/lib/jvm
  localhost:42647 --enable-preview -XX:+ShowCodeDetai
  0db7e650a731cc02602bbb837e/redhat.java/jdt_ws/JAVA_
  Wednesday
○ [qwaesz@archlinux JAVA]$
```

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
```



```
● [qwaesz@archlinux JAVA]$  /usr/bin/env /usr/lib/jvm/
  localhost:38287 --enable-preview -XX:+ShowCodeDetail
  0db7e650a731cc02602bbb837e/redhat.java/jdt_ws/JAVA_1
  1
  2
  3
  4
  5
○ [qwaesz@archlinux JAVA]$
```

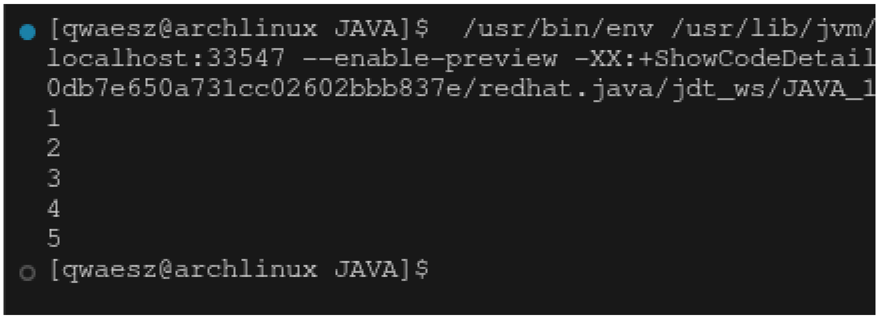
Program 7: Print Numbers from 1 to 5

```
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
```



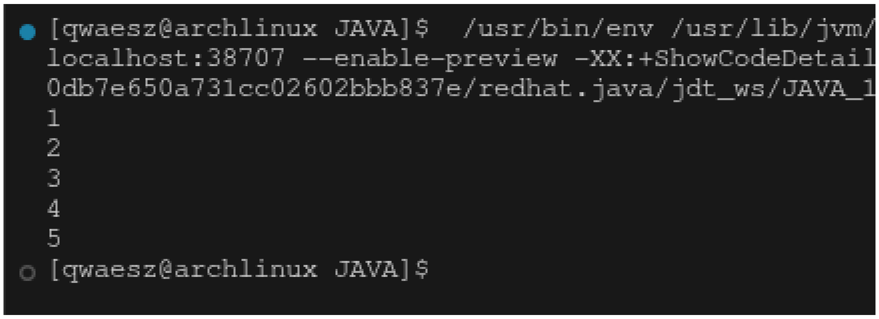
```
● [qwaesz@archlinux JAVA]$  /usr/bin/env /usr/lib/jvm/
  localhost:33547 --enable-preview -XX:+ShowCodeDetail
  0db7e650a731cc02602bbb837e/redhat.java/jdt_ws/JAVA_1
  1
  2
  3
  4
  5
○ [qwaesz@archlinux JAVA]$
```

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
```



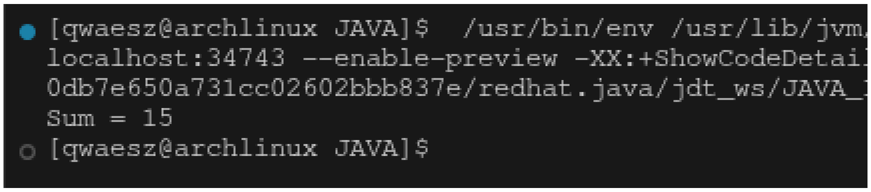
```
● [qwaesz@archlinux JAVA]$  /usr/bin/env /usr/lib/jvm/
  localhost:38707 --enable-preview -XX:+ShowCodeDetail
  0db7e650a731cc02602bbb837e/redhat.java/jdt_ws/JAVA_1
  1
  2
  3
  4
  5
○ [qwaesz@archlinux JAVA]$
```

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
```



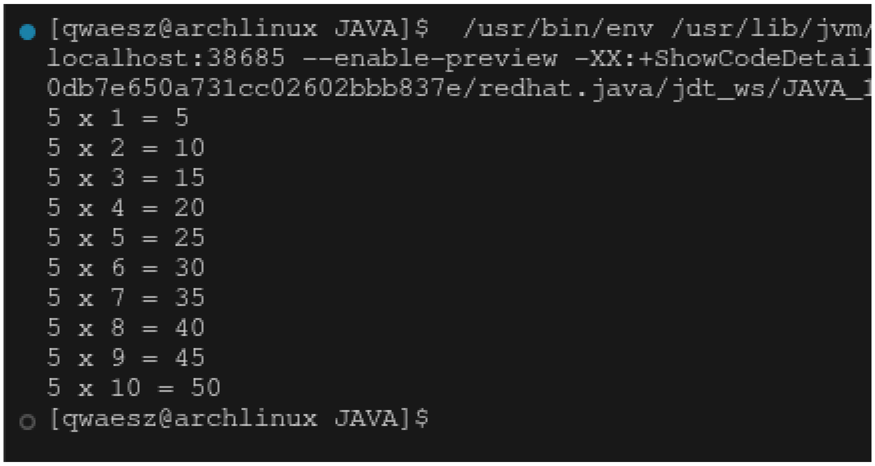
```
● [qwaesz@archlinux JAVA]$  /usr/bin/env /usr/lib/jvm/
  localhost:34743 --enable-preview -XX:+ShowCodeDetai
  0db7e650a731cc02602bbb837e/redhat.java/jdt_ws/JAVA_
  Sum = 15
○ [qwaesz@archlinux JAVA]$
```

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
```



```
● [qwaesz@archlinux JAVA]$  /usr/bin/env /usr/lib/jvm/
  localhost:38685 --enable-preview -XX:+ShowCodeDetail
  0db7e650a731cc02602bbb837e/redhat.java/jdt_ws/JAVA_1
  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
○ [qwaesz@archlinux JAVA]$
```

POST LAB EXERCISE

- ✓ What is the use of if statement?

  The if statement is used to execute a block of code when a given condition is true. It helps in decision making by controlling the flow of a program.

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

  if-else is used to choose between two alternatives. else-if ladder is used to test multiple conditions one after another.

- ✓ Why is switch statement used?

  The switch statement is used to select one execution path from multiple choices. It improves readability when comparing a variable against many constant values.

- ✓ Difference between for, while, and do-while loops.
  - for loop is used when the number of iterations is known.
  - while loop checks the condition before execution.
  - do-while loop checks the condition after execution.

✓ Which loop executes at least once?

The do-while loop executes at least once. This is 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	