Learning Module

COURSE NUMBER: ITE 103
COURSE TITLE: Computer Programming 2

WEEK 2

Course Learning Outcomes

Improve previous skills in basic programming in terms of variables, identifiers, and control structures such as branching statements and looping statements.

Student Learning Outcome

At the end of this session, you are expected to be able to solve programming problems using iterative control structures in Java.

Learning Content: Iterative Statements

A. Introduction

Hello class and welcome to the second week in our course in computer programming 2. In this session, we will review our learnings from the our previous course in programming 1 pertaining to the use of iterative statements which are statements that allow us to program with repitition.

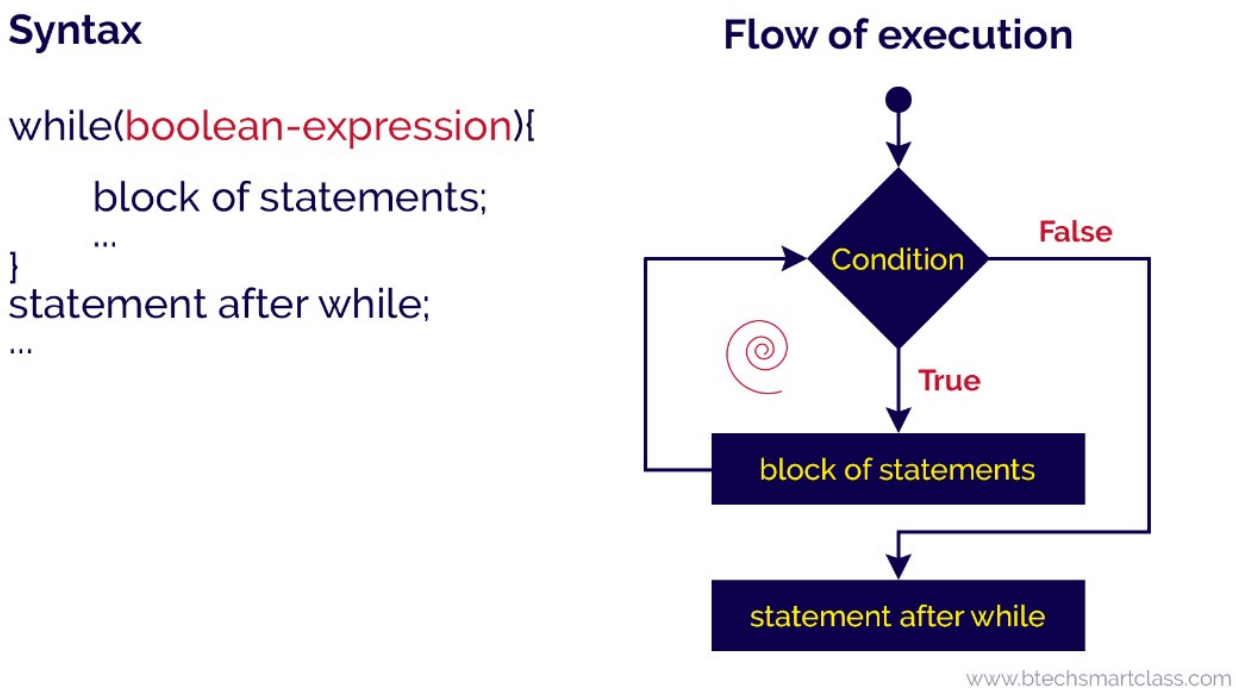
B. Lesson Content

The java programming language provides a set of iterative statements that are used to execute a statement or a block of statements repeatedly as long as the given condition is true. The iterative statements are also known as looping statements or repetitive statements. Java provides the following iterative statements.

- while statement
- do-while statement
- for statement
- for-each statement

While Statement In Java

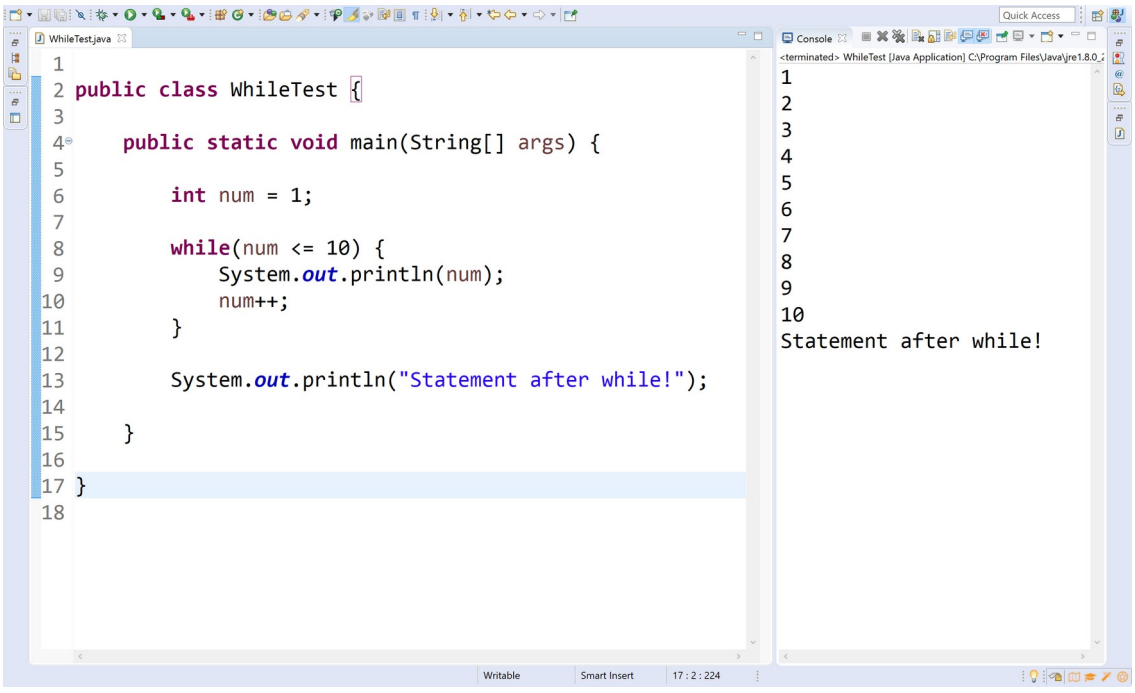
The while statement is used to execute a single statement or block of statements repeatedly as long as the given condition is TRUE. The while statement is also known as Entry control looping statement. The syntax and execution flow of while statement is as follows.



Let's look at the following example java code.

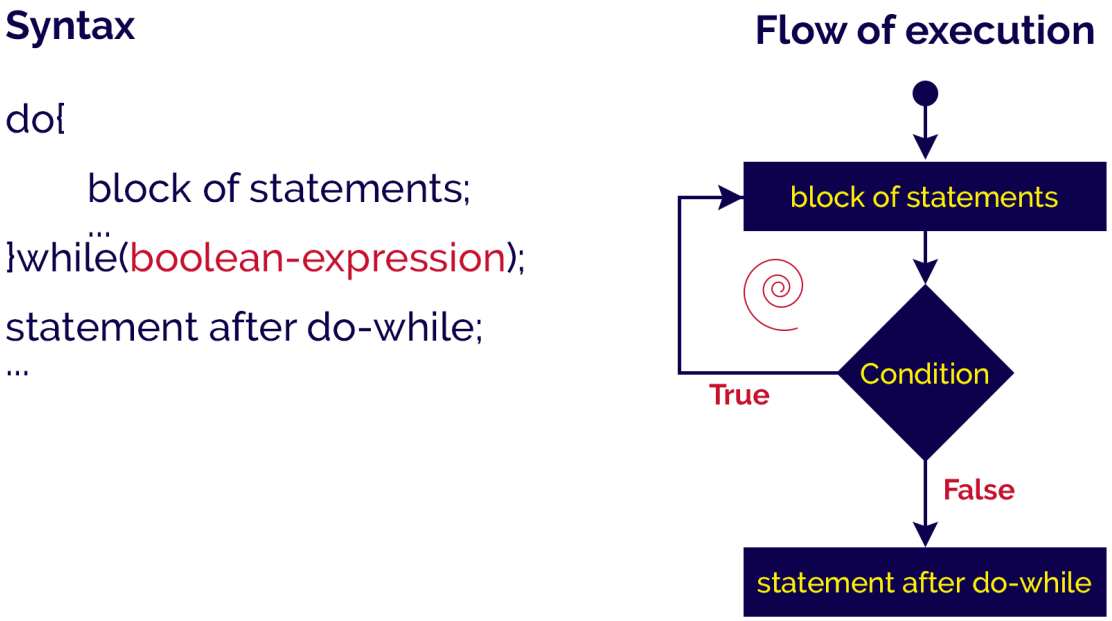
```
public class WhileTest {
   public static void main(String[] args) {
      int num = 1;
      while(num <= 10) {
          System.out.println(num);
          num++;
      }
      System.out.println("Statement after while!");
   }
}
```

When we run this code, it produces the following output.



Do-while Statement in Java

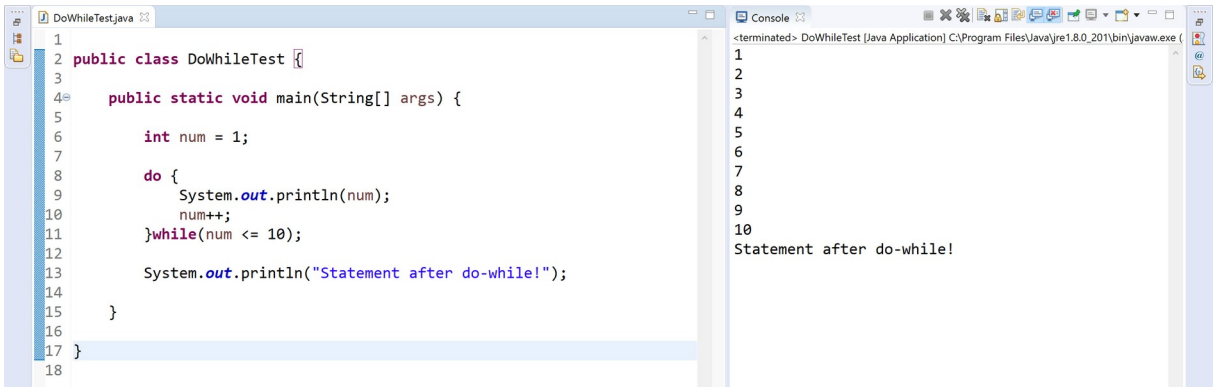
The do-while statement is used to execute a single statement or block of statements repeatedly as long as given the condition is TRUE. The do-while statement is also known as the Exit control looping statement. The do-while statement has the following syntax.



Let's look at the following example java code.

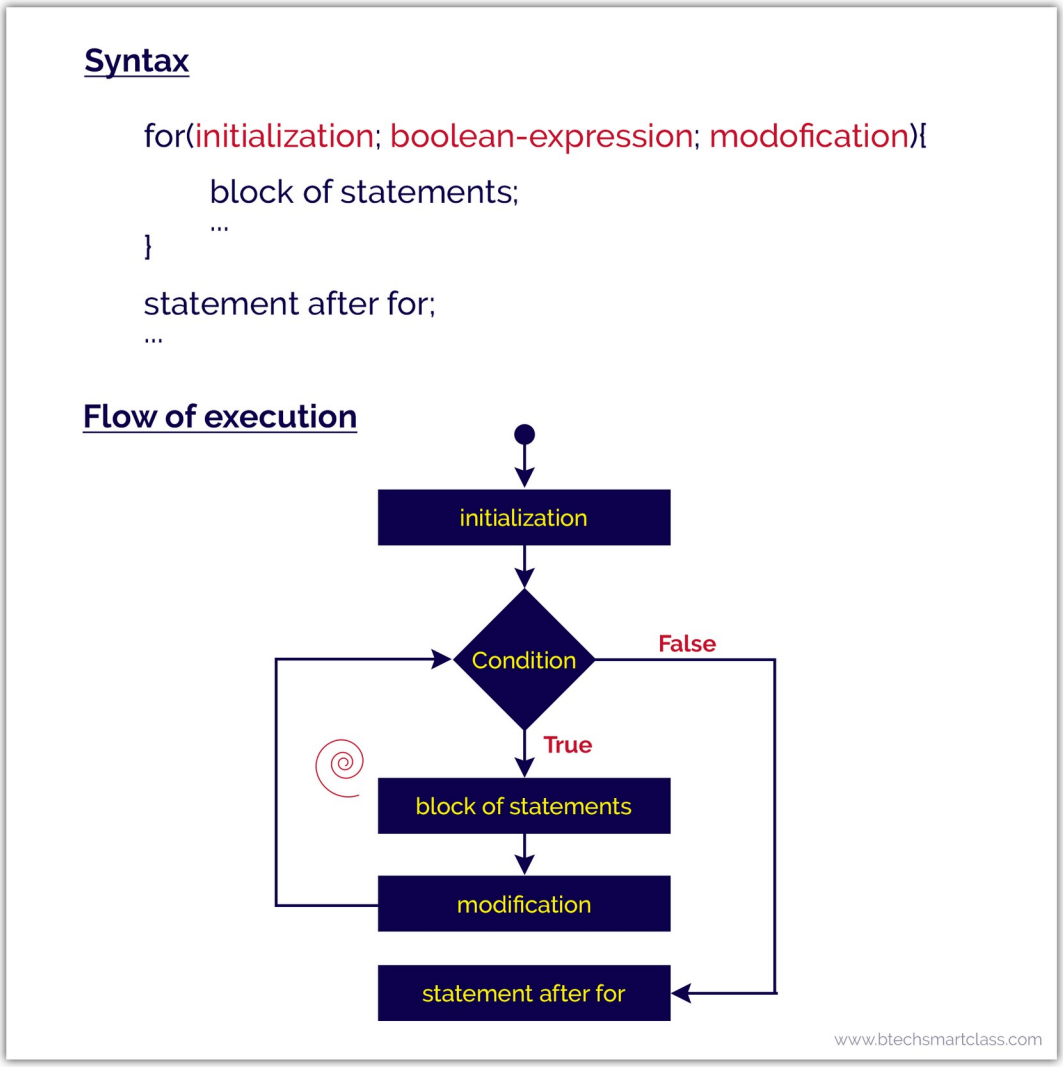
```
public class DoWhileTest {
	public static void main(String[] args) {
		int num = 1;
		do {
			System.out.println(num);
			num++;
		}while(num <= 10);
		System.out.println("Statement after do-while!");
	}
}
```

When we run this code, it produce the following output.



For Statement In Java

The for statement is used to execute a single statement or a block of statements repeatedly as long as the given condition is TRUE. The for statement has the following syntax and execution flow diagram.

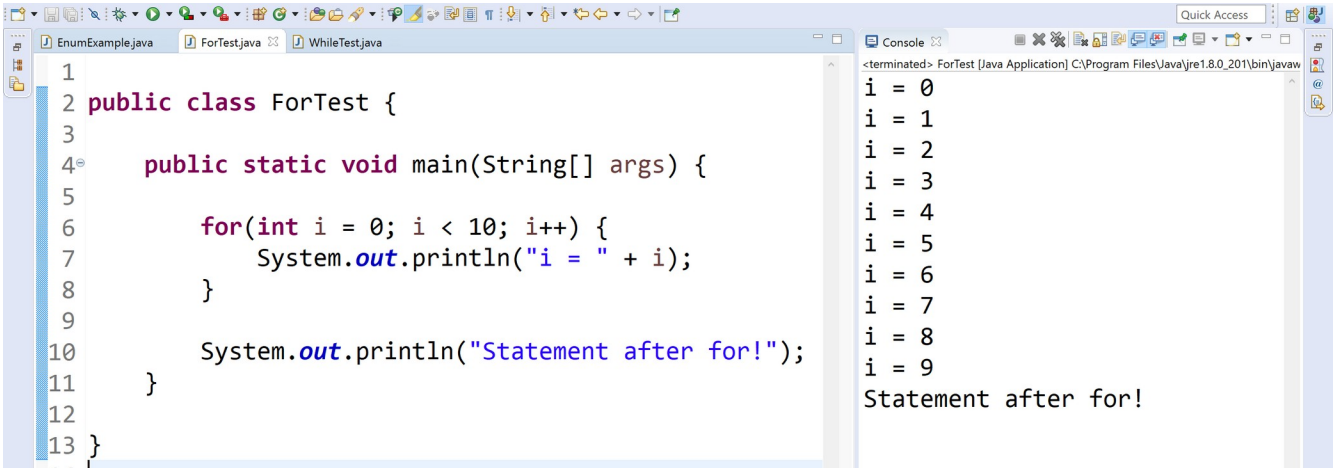


In for-statement, the execution begins with the initialization statement. After the initialization statement, it executes Condition. If the condition is evaluated to true, then the block of statements executed otherwise it terminates the for-statement. After the block of statements execution, the modification statement gets executed, followed by condition again.

Let's look at the following example java code.

```
public class ForTest {
	public static void main(String[] args) {
		for(int i = 0; i < 10; i++) {
			System.out.println("i = " + i);
		}
		System.out.println("Statement after for!");
	}
}
```

When we run this code, it produce the following output.



C. Teaching-Learning Activity

Reaction to the Video Lecture

Please provide your one-paragraph reaction to the above video lecture. Make sure to accomplish this before February 1, 2021 9:30 AM.

Programming Project for Week 2

Write a java program that will display a series of 20 years e. g. 2000-2020 and each year displayed should be labeled whether it is a leap year or not.

Sample Output:

```
1995 is not a Leap year.
1996 is a Leap year.
1997 is not a Leap year.
1998 is not a Leap year.
1999 is not a Leap year.
2000 is a Leap year.
....
```