JAC444 - Lecture 1

Introduction to

Java Programming Language

Segment 2

Java Programming Language

In this segment you will be learning about:

- Class: the Structure of a Java Program
- Basics about:
  - Build-in Primitives
  - Comments
  - Flow of Control

Getting Started

- Java programs are built from *classes*.
- A class is a template to build objects and contains members of the following type:
  - Fields – Data belonging either to class or object of the class.
  - Methods – Collections of statements that operate on fields.
  - Classes – Nested or inner classes defined inside a class.

Example: ***First.java***

```
class First {
   public static void main(String[] args) {
      System.out.println("My first program in Java");
   }
}
```

Variables

- Java has build-in primitives to support boolean, character, integer and floating-point values.

- boolean — either *true* or *false* — ***boolean*** *b = true;*

- char — 16-bit Unicode 1.1 character — ***char*** *ch = 'J';*

- byte — 8-bit integer (signed) — ***byte*** *bt = 127;*
- short — 16-bit integer (signed) — ***short*** *sh = 32767;*
- int — 32-bit integer (signed) — ***int*** *i = 2147483647;*
- long — 64-bit integer (signed) — ***long*** *l = 9223372036854775807L;*

- float — 32-bit floating-point (IEEE 754-1985) — ***float*** *f = 1.0f;*
- double — 64-bit floating-point (IEEE 754-1985) — ***double*** *d = 1.e-1;*

Comments, Named Constants

- Comments in Code – **enable to write descriptive text.**
  - /* Comment type 1 – This text is ignored by the compiler */
  - // Comment type 2 – The text up to the end of line is ignored
  - /** Documentation comment is extracted by javadoc tool */
- Named Constants – **name used to describe constants.**
  - `public static final int  MAX_INDEX = 1000;`

```
class MathConstant {
        //the base of the natural logarithms
    static final double E = 2.71;
    static final double PI = 3.14;
}
```

Flow of Control

- Flow of control is the term used for describing which statements are executed in a program.

- Flow statements are:
  - if – else
  - for
  - switch
  - do – while
  - while
  - block of code – statements group within { and }.

Fibonaci sequence

- **The Fibonacci sequence is an infinite sequence that starts with terms 1 and 1 and each successive term is the sum of the previous two terms.**

```
class Fibonacci {
   /**     Print out the Fibonacii numbers       */
   static final int MAX_INDEX = 10;

   public static void main(String[] args) {
     int x = 1;
    int y = 1;
     System.out.println("1: " + lo);
        for (int i = 2; i < MAX_INDEX; i++) {
            System.out.println("i: " + y);
            y = x + y; //new y is the sum of previous two terms
            x = y - x; //new x is the old y
        }
   }
}
```