**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) { //🡨 must have paremeter 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; // not use Integer like C++*

*------------------------------------------------------------------------------------------*

* char 16-bit Unicode 1.1 character ***char*** *ch = ‘J’; // can use any language*

*-----------------------------------------------------------------------------------------*• byte 8-bit integer (signed) ***byte*** *bt = 127; // ~128 ~ 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***

***}***

***}***

***}***