

Object-Oriented Programming - OOP

Course Introduction

Trinh Thi Van Anh – PTIT

Why should you study Java?

- Top ten common programming languages:

Jul 2018	Jul 2017	Change	Programming Language	Ratings	Change
1	1		Java	16.139%	+2.37%
2	2		C	14.662%	+7.34%
3	3		C++	7.615%	+2.04%
4	4		Python	6.361%	+2.82%
5	7	⬆	Visual Basic .NET	4.247%	+1.20%
6	5	⬇	C#	3.795%	+0.28%
7	6	⬇	PHP	2.832%	-0.26%
8	8		JavaScript	2.831%	+0.22%
9	-	⬆	SQL	2.334%	+2.33%
10	18	⬆	Objective-C	1.453%	-0.44%

From <http://www.tiobe.com/index.php/content/paperinfo/tpci/index.html>

Why Java?

- Java is Architecture Neutral (i.e. platform independent).
- Java Provides “One-Stop Shopping” (customers can get all they need in just "one stop").
- Java is Object-Oriented from the Ground Up.
- Java is an Open Standard.
- Java is Free!

Instructor introduction

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Course Overview

- **Prerequisite:**
 - Programming Fundamentals Using C

Course objectives

- Introduce fundamental object-oriented (OO) terminology and concepts.
- Getting to know the “World of Java”.
- Understand the implementation of a Java Application.
- Understand the roles of java built-in packages.

Contents

- The basic Java Language
- The advance Java Language
- OOP (object-oriented programming) with java
- Collections
- Exceptions
- Basic I/O (Input/output)
- Thread
- GUI

Resources

- **Tool**

- Java Development Kit (**JDK8**)
 - <http://www.oracle.com/technetwork/java/javase/downloads>
- IDE (Integrated Development Environment)
 - Notepad / Notepad++ (<https://notepad-plus-plus.org>)
 - NetBeans (<http://netbeans.org>)
 - Eclipse (<http://www.eclipse.org>)

- **Text book**






- <http://docs.oracle.com/javase/tutorial/>
- <http://www.oracle.com/technetwork/java/javase/documentation/jdk8-doc-downloads-2133158.html>

Download & Install NetBeans 8 & JDK

<http://www.oracle.com/technetwork/java/javase/downloads/jdk-netbeans-jsp-142931.html>

You must accept the **JDK 8u45 and NetBeans 8.0.2 Cobundle License Agreement** to download this software.

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Java SE and NetBeans Cobundle (JDK 8u45 and NB 8.0.2)		
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Linux x86	258.45 MB	 jdk-8u45-nb-8_0_2-linux-i586.sh
Linux x64	254.77 MB	 jdk-8u45-nb-8_0_2-linux-x64.sh
Mac OS X x64	326.61 MB	 jdk-8u45-nb-8_0_2-macosx-x64.dmg
Windows x86	280.82 MB	 jdk-8u45-nb-8_0_2-windows-i586.exe
Windows x64	286.17 MB	 jdk-8u45-nb-8_0_2-windows-x64.exe

Links for reading

- Java tutorial
 - <https://docs.oracle.com/javase/tutorial/>
- Java platform
 - <http://www.tutorialspoint.com/java/index.htm>
- java.util.Collections
 - http://www.tutorialspoint.com/java/util/java_util_collections.htm
- java.util.ArrayList
 - http://www.tutorialspoint.com/java/util/java_util_arraylist.htm

Course Requirements

- Following lessons in classroom
- Reading textbook and documents at home (online)
- Doing all exercises at home
- should bring your laptop to class for short exercises

Grading policy

- Must attend at least 75% of contact hours (if not, not allow to take exams).
- Evaluating
 - Attendance marks (AD, 10%)
 - **4 to 6** Labs for L1 (20%) and L2 (20%)
 - Final Exam (FE, 50%) (Lab)
 - Total score =
 $10\%(AD) + 20\%(L1) + \mathbf{20\%(L2) + 50\%}$
(FE)