



Java Programming – 40 Hours

About the course instructor

Mark Veltzer is a seasoned industry veteran with participation in four startups under his belt a host of projects done for corporations. Mark has a rich experience in instructing hundreds of different course materials and thousands of students. He masters about 10 programming languages at an advanced level, contributes to a host of open sources projects and has been one of the maintainers of GNU grep in the last decade. He is also the first official non AWS employee instructor of AWS in Israel and teaches courses on behalf of AWS. Technology wise Mark is experienced in Assembly through high level spark and all languages in between. See his github page here: <https://github.com/veltzer>

About this course

A full and comprehensive course about the Java programming language and environment.

Target Audience

This course is intended for developers who wish to study the basics of the Java programming language

Topics

Introduction to Java

- Java technology
- Java application structure
- Identifiers, keywords and types

Your very first program

- Using development environments
- Eclipse
- IntelliJ
- Using the command line
- Compiling
- Running
- Debugging

Types

- Built in types
- Integers
- Floats and Doubles
- Strings
- References
- primitives vs objects

Flow control

- Methods
- Conditionals
- Loops
- Expressions

Recursion

- Uses of
- Limitations

Principles of Object Oriented programming

- Inheritance
- Interfaces

- Abstract classes
- Referencs
- The problems of inheritance

Collections

- Arrays
- Types of arrays
- Linked Lists
- Two way linked lists
- Arrays
- Their performance
- Stacks
- Queues
- HashMaps
- Performance of various data structures
- Sorting and searching algorithms

Input and output

- The File class
- The Stream abstraction
- Basic file manipulation
- Dealing with directories
- Stream decorators

JDBC

- Introduction
- Basics

Handling errors

- Execeptions
- The problems with exceptions
- Assertions

More advanced topics:

- JFC
- Latest syntax enhancements

- Generics
- Regular expressions

The java memory model

- The garbage collector
- How to help the garbage collector

Introduction to Java concurrency

- Java threads
- Types of threads
- Mutexes
- Thread local storage
- Daemons
- Passing messages between threads