Extreme Java Developer
Advanced Java

Java is a high-level programming language that developers use to create applications on your computer. It was originally designed for developing programs for set-top boxes and handheld devices, but later became a popular choice for creating web applications. This Advanced Java Programming training course goes deeper into programming topics that help you to understand these more advanced Java concepts. Some of the advanced topics that you will cover in this Course includes, generic programming, sequential and associative data structures, classic data structures, sorting and searching, exception handling, database programming with JDBC, networking programming GUI development using Swing and an overview of Multithreading.

You must know!

Duration:
40 Hours

Who should attend?
Developers Who Already has Learned the Fundamentals of Java Programming

Main Topics:

- Java fundamentals
- OOP in Java
- Exceptions
- Extended Interface
- Reflection & Annotation
- Lambda expressions
- Multithreaded programming in Java
- Collections
- – I/O

Course Modules

Module 1 – The History of Java & Basic Syntax

- Java's Key Features
- The Java Virtual Machine
- JRE, JDK
- Understanding classpath, JAVA_HOME
- Eclipse IDE
- Application structures and archiving (jars)
- The First Application
- Basic Syntax
  - Identifiers
  - Comments
  - Keywords
  - Primitives
  - Introduction to Classes & Objects
  - Packages & Imports

Module 2 – Object Oriented programming in Java

- Referencing and Instantiation
- Object members and methods
- Constructors
- Class members and methods
- The Final keyword
- Access control
- Inner Classes
- The java.lang.Object class
- Polymorphism – Overloading and Overriding.
- Casting and safe casting
- Final classes and methods
- Abstract classes and methods
- Interfaces

Module 3 – Exceptions

- o Exceptions vs. traditional error handling.
- o Exceptions terminology
- o Errors and exceptions
- o Available methods
- o Nesting blocks
- o The finally block
- o Creating user-defined exceptions

Module 4 – Extended Interface

- o Regenerate java with extended interfaces
- o Extended interface and multiple inheritence
- o mixins in java

Module 5 – Reflection & Annotation

- o The java.lang.Class
- o Dynamic instantiation
- o modifiers
- o Method invocation
- o Design Issues and limitations
- o Annotation

Module 6 – Lambda expressions

- o Anonymus inner class
- o Lambda expressions
- o Functional interfaces
- o Lambda expression best practices

Module 7 – Multithreaded programming in Java

- o Threads overview
- o Creating threads in Java
- o The thread life cycle
- o Naming threads
- o The Timer and TimerTask classes
- o Synchronization overview

- Synchronized blocks
- Synchronized methods
- Synchronized class methods
- Cooperation using wait() and notify()
- Priorities – appendix
- Deadlocks – appendix
- Daemon threads – appendix
- Util concurrent package

Module 8 – Collections

- The collection framework classes
- Iterator
- List and implementations
- Set and implementations
- Sorting issues (Comparator and Comparable).
- Map and implementations
- Read-only and synchronized collections
- Historical implementations
- Generics
- Streams and parallel programming with collections
- Additional issues – appendix
- Concurrent Collections

Module 9 – I/O

- I/O overview
- Binary Streams
- FileInputStream/FileOutputStream
- Working with buffers
- RandomAccessFile
- Character streams
- Console IO
- The java.io.File class
- Scanner – Appendix
- Networking
- Ports
- Sockets
- The Server side

Extreme Java

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המרכז הבינלאומי
ללימודי הייטק וחדשנות

מתקדמים
לקריירה בהייטק

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קמפוסים בפריסה ארצית:

תל אביב	רחובות	ירושלים	באר שבע
ראול ולנברג 36	רחוב אופנהיימר 5	רחוב יפו 34	רחוב האנרגיה 77
קריית עתידים	פארק המדע		פארק ההייטק