

MASTER JAVA COURSE CONTENTS

Module 1:

- Java History
- Understanding JVM (Java Virtual Machine), JRE (Java Runtime Environment), JDK (Java Development Kit)
- Compilation of java program
- Why JAVA
- Java as pure OOP
- Diving deep into OOP concepts
- Comparison with C/C++
- The java buzzwords(Features)
- Installing JDK and Giving path for JDK
- Assignment and Research part - 1

Module 2:

- Access Specifiers In java
- Classes and Objects in Java
- Simple program In Java
- Data Types In Java
- Introduction to Packages In JDK
- The main() Method in Java
- Basic operators in Java
- Analysing checkpoints in operators and data types
- Assignment and Research part - 2

Module 3:

- Exploring various types of variables
- Decision Control Structure In Java
- Loop Control Structure In Java
- Naming Convention In java
- Writing Java Programs (Creating Objects & Constructors)
- A closer look at literals in Java
- Diving deep into in build support of java
- Assignment and Research part - 3

Module 4:

- More On Java Programs
- Keywords in Java
- Concept of array
- Type casting process



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- Automatic type promotions
- A trip to object Ville
- Assignment and Research part – 4

Guest lecture by industry experts on topic “Oracle Certified Java Programmer Exam and its benefits”

Module 5:

- A closer look towards methods and classes
- Understanding Object Class
- Accessors(getters) & Mutators (setters) Concept
- toString() Method
- Concept of polymorphism
- Real time applications of polymorphism
- Assignment and Research part - 5

Module 6:

- Writing more sophisticated programs
- Var Args (Variable Arguments) Concept
- Constructor Chaning
- Diving Into Inheritance
- Using Super()
- Method Overriding
- Wrapper classes
- Assignment and Research part - 6

Module 7:

- Variants of Inheritance & polymorphism
- Dyanamic Method Dispatch
- Covariant variables
- Interfaces in java
- Using Interfaces
- Marker Interfaces and their applications
- Understanding the change in newer versions of Java
- Assignment and Research part – 7

Guest Lecture by industry experts on “Career path of Java programmers in the current industry”

Module 8:

- Introduction To Exception Handling
- Understanding Some basic Exceptions
- Writing Try Catch Blocks



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- Multiple Catches Concept
- Finally block
- Garbage collection
- Programs On Exception Handling
- Assignment and Research part - 8

Module 9:

- Introduction To I/O(Input output File)
- Reading Console Input
- Writing Console Output
- Inbuilt Classes In I/O (Input output File)
- Simple Programs On I/O
- Assignment and Research part - 9

Module 10:

- Basics of socket programming
- Trip to socket world
- Understanding interior of sockets
- Implementing Socket programming
- Designing Real time application
- Assignment and Research part – 10

Guest lecture by experts on “importance of collections and multithreading in real life”.

Module 11:

- Multiprocessing, Multitasking and Multithreading
- Understanding how threads can bring change in industrial applications
- Thread life cycle
- Applying inbuilt classes
- Thread scheduling concepts in operating systems
- Service threads
- Multithreading programming using java
- Assignment and Research part - 11

Module 12:

- Deciding priorities in thread
- Deadlock concept
- Inter thread communications
- Applying Synchronization
- Real life applications
- Assignment and Research part - 12



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Module 13:

- Autoboxing and Unboxing
- Enumerations
- The Mystery - String...StringBuilder...StringBuffer
- Java Inner Classes
- Buzzing Keywords (strictfp, assert etc.)
- Understanding java.util.Date
- Java summative assessment test – 1
- Assignment and Research part - 13

Module 14:

- Introduction to generics
- Ambiguities in generics
- Applying generics in applications
- Importance of data structures
- Brief about Collection Framework
- Diversity in collection framework
- Interfaces and classes involved
- Applying collections in programs
- The differentiated component – Maps
- Introduction to utility and bean classes
- Assignment and Research part – 14

Guest Lecture by the industry experts on “Cyber Security and the career path of an ethical hacker”

Module 15:

- Revising Databases and uses
- The Connection Maker – Java Database Connectivity
- Connecting different databases to applications
- Diving deep into JDBC
- Analysing various classes and interfaces
- Comparing JDBC with others
- Assignment and Research part - 15

Module 16:

- Introduction To Swing Framework
- Understanding Swing components
- Creating GUI(Graphical User Interface) using Swing
- Events and Listeners
- Connecting GUI with Databases
- Building Projects using swing and JDBC
- Assignment and Research part – 16



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The JAVA SUMMATIVE ASSESSMENT TEST (JSAT) for the certification of the course.

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