

Java Programming -Custom

Day 1 – Java Fundamentals

Module 1: Introduction to Java Programming

- Java features and architecture
- JDK, JRE, JVM
- Java installation and setup
- Java program structure
- Compilation and execution
- Variables and data types

Module 2: Java Syntax and Control Structures

- Java syntax and operators
 - Type casting
 - Strings and input/output
 - Conditional statements
 - Loops
 - break and continue
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Day 2 – Object-Oriented Programming & Exception Handling

Module 3: Object-Oriented Programming (OOP) in Java

- Classes and objects
- Constructors
- Encapsulation
- Inheritance
- Polymorphism
- Abstraction
- Interfaces

Module 4: Exception Handling and File Management

- Exception types
 - try-catch-finally
 - throw
 - Custom exceptions
 - File handling
 - Java I/O basics
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Day 3 – Collections & JDBC

Module 5: Java Collections Framework

- Collections overview
- Generics
- List, Set and Map
- ArrayList, LinkedList
- Iterators
- Sorting and Comparators
- Stream API basics

Module 6: Database Connectivity (JDBC)

- JDBC architecture
 - Database connection
 - Statement and PreparedStatement
 - ResultSet
 - CRUD operations
 - Transactions
 - Exception and resource handling
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Day 4 – Advanced Java

Module 7: Advanced Java and Application Development

- Generics and Lambda expressions
 - Functional interfaces
 - Stream API
 - Date and Time API
 - Multithreading basics
 - Thread synchronization
 - JSON processing
 - Application architecture
 - Debugging and testing
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Day 5 – Certification & Capstone

Module 8: Microsoft Certification Alignment and Capstone Project

- Programming concepts and problem solving
- OOP and data structures
- Exception handling
- Database connectivity
- Application development concepts
- Practice assessment
- Capstone project planning
- Java + JDBC application development
- Testing and debugging
- Project demonstration and review