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| **Full Stack Java COURSE CONTENTS** |

The Course Content Includes

1. Core Java
2. MY- SQL
3. JDBC
4. HTML, CSS, BOOTSTRAP, JAVASCRIPTS
5. JSP
6. SERVLETS
7. SPRING
8. HIBERNATE

Imp Notes

* Assignments & Tests will be conducted after each topics
* Two Projects
  + One using C#,SQL SERVER, ADO.NET, HTML, CSS, BOOTSTRAP, ASP.NET
  + One using ASP.NET MVC, EF, WEB API, JQUERY

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| **Java COURSE CONTENTS** | |
| **Getting Started with Java**   * What is Java * Introduction * History * Java Applications * Java Features * JVM Architecture * Java Tools(JDK)(JRE) | **Eclipse Software**   * Introduction eclipse software * Software Installation * Simple eclipse Program * How to Run a Program * Java as an Object Oriented Language |
| **Variables and Data Types**   * What is variables * Types of Variables * How to Initialize variables * Data Types * Primitive and Non-primitive Data Type * How to initialize * Examples | **Operators:**   * What is Operators * Types of Operators * Arithmetic Operators * Assignment Operators * Logical Operators * Relational Operators * Unary Operators/Bitwise Operators * Ternary Operators/Shift Operators * Assignment No:1 |
| **Decision Making Statements**   * Java Control Statement * Types of Statements * If Statement * If else statement * Nested if else * Assignment No:2 | **Switch Statements**   * What is Switch Statement * Syntax * Examples * Assignment No:3 |
| **Loops**   * What is Loops * Types of Loops * For Loop * Types of For Loop * While Loop * Do-While Loop * Assignment No:4 | **Array**   * What is array * Types of array * 1-D array * 2-D array * Assignments No:5 |
| **Patterns**   * What is Patterns * Types of patterns * Star patterns * Number patterns * Character Patterns * Assignment No:6 | **Object-Oriented Programming**   * Introduction to Object-Oriented Programming: * Classes and Objects * Fields and Methods * Encapsulation * Access Control * Inheritance: * Polymorphism * Interface: * Best Practices |
| **Objects and Classes**   * Object * Classes: * References * Defining a Class * Instantiating and Creating an Object * Assignment of Objects * Instance Data and Class Data * Abstract Classes * Access Modifiers * Initialization * Garbage Collection * Methods: | **Constructor/Inheritance**  **Polymorphism**   * Introduction * What is constructor * Types of Constructor * Default Constructor * Parameterized Constructor * Inheritance: * Types of inheritance * Polymorphism * Types of polymorphism |
| **Interface**   * Introduction * Abstract class * Abstract method * Final Keyword * Static Keyword * Interface Examples * Anonymous Classes * Nested Classes | **Exception Handling**   * Exceptions Overview * Declaring Exceptions * Defining and Throwing Exceptions * Errors and Runtime Exceptions * Catching Exceptions: * The finally Block * Exception Methods * Assertions * I/O Exceptions vs. Runtime Exceptions |
| **Packages**   * Packages * Package Categories * Create your own Package * How to import a package * Create Sub packages * The import Statement * Static Imports * CLASSPATH and Import * Defining Packages * Package Scope   **Abstract Window Toolkit(AWT)**   * Introduction * AWT Hierarchy * Components * How to Creating Window * Adding a Different Components * How to Create a Frame * Examples | **File Handling(I/O Streams)**   * File Output Stream * File input Stream * Overview of Streams * Bytes vs. Characters * Converting Byte Streams to Character Streams * File Object * Binary Input and Output * Reading and Writing Objects * Printing to the Console * Scanner Method   **Swing**   * Introduction * Swing Hierarchy * Components * How to Creating Window * Adding a Different Components * How to Create a Frame * Examples |
| **Applet**   * Introduction * Applet Lifecycle * Graphical Components * How to Creating Components * Adding a Different Components * Examples |  |

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| **Advanced Java** | |
| **Chapter 1: My-SQL**   * Introduction to My-SQL * Introduction to DBMS * Configuration of My-SQL * create a simple MySQL database * Data Types of MySQL * Database Definition Language (DDL) * Creating Tables * Adding and Dropping Columns * Dropping Tables * Database Manipulation Language (DML) * Insert statements * Update statements * Delete statements * Select Statements | **Chapter 2: JDBC**   * JDBC Introduction * JDBC Driver * DB Connectivity Steps * Connectivity with MysQL * DriverManager * Connection * Statement * ResultSet * PreparedStatement * ResultSetMetaData * DatabaseMetaData * Store image * Retrieve image * Store file * Retrieve file * CallableStatement * Transaction Management * Batch Processing |
| **Chapter 3: THREADING**   * Overview of Thread * Life cycle of Thread * Creating Threads * Thread States * Multithreading * What is Multithreading * Life Cycle of a Thread * Creating Thread * Thread Scheduler * Sleeping a thread * Start a thread twice * Calling run) method * Joining a thread * Naming a thread * Thread Priority * Daemon Thread * Thread Pool * Thread Group | **Chapter 4: SERVLET**   * What is Servlet * Web Terminology * Servlet API * Servlet Interface * GenericServlet * HttpServlet * Servlet Life Cycle * Servlet Example * How servlet works? * War File * welcome-file-list * Load on startup * Servlet with Eclipse * Servlet with NetBeans * ServletRequest * Servlet Collaboration * RequestDispacher * sendRedirect * ServletConfig * ServletContext * Attribute in Servlet * Session Tracking * Cookies in Servlet * Hidden Form Field * URL Rewriting * HttpSession * Event and Listener * Servlet CRUD * CRUD Example * Annotation Servlet * Servlet Development |
| **Assignments / Case Studies will be provided on above topics which needs to be completed** | |
| **Chapter 7: JAVA SERVER PAGES**  Life cycle of JSP  JSP API  JSP in Eclipse  JSP scripting elements  JSP script let tag  JSP expression tag  JSP declaration tag  9 Implicit Objects   * JSP Request * JSP Response * JSP Config * JSP Page * JSP Application * JSP Session * JSP PageContext * SP Exception | **Chapter 7: JAVA SERVER PAGES**  JSP Directive Elements   * JSP page directive * JSP include directive * JSP taglib directive   JSP Exception  Action Elements   * JSp:forward * JSp:include   JSP CRUD Example  Creating CRUD Application using JSP |
| **Assignments / Case Studies will be provided on above topics which needs to be completed** | |

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| **Advanced Java** | |
| **Chapter 1: HIBERNATE**   * What is Hibernate? * Object Relational Mapping (ORM) * Hibernate Resources * Hibernate Architecture * Installation and Directory Structure * Hibernate Data Type * Hibernate Features * Hibernate DataType * Create Hibernate Application * Hibernate Development * Hibernate Tools * Hibernate with Eclipse * HB using xml * HB using Annotation * Hibernate Example * Hibernate Web Application * Hibernate Generator Classes * Hibernate Dialects * Hibernate Mapping (HBM) File * Hibernate Template * Inheritance Mapping * Table Per Hierarchy * TPH Per Annotation * Table per Concrete * TPC using Annotation * Collection Mapping * Mapping List * One-to-Many By List * OTM Annotation * Mapping Bag * One to Many By Bag * Mapping Set * One - by - Many By Map * Component Mapping * Association Mapping * Hibernate Query Language (HQL) * Hibernate Caching * Second Level Cache * Integration Hibernate with Web Application * using Servlet / JSP with Hibenate | **Chapter 2: SPRING**   * What is Spring? * Spring Modules * Spring Framework * Steps for Crearing Spring Application * Web Application Layering * Inversion of Control (IoC) * IOC Container * Crosscutting Concern * Aspect-Oriented Programming (AOP) * Dependency Injection in Spring * Constructor Injection * Constructir Injection with Collection Having Dependent Object * Constructor Injection with Map * Setter Injection * Setter Injection with Dependent Object * Setter Injection with Collection * Setter Injection with Collection having Dependent Object * Setter Injection with Map * Constructor Injection vs Setter Injection * Spring AOP * Spring JDBC * JDBC Template Example * Prepared Statement * ResultSetExtractor * RowMapper * NamedParameterJDBCTemplateClass * Simple JDBC Template Class * Spring with ORM Frameworks * Spring with Hibernate * Spring with JPA * Spring with Java Mail * Spring Integration with Hibernate using web Application * Spring Modules * Spring Beans * Sprint Transaction * Spring DAO Templates * Spring Components |
| **Assignments / Case Studies will be provided on above topics which needs to be completed** | |