



**IDE Tool: Netbeans IDE 7.0**

**Web Server: GlassFish**

**Database: SQL Server 2005**

**Module 1-Total Days-25**

**Introduction to Java:**

- History of Java
- Need for Java
- Java versions
- Features/Advantages of Java
- JVM Architecture
- Packages in Java

**Programming in Java:**

- Programming Structure
- Variables/Constants
- Datatypes
- Various operators
- Access Specifiers & Modifiers
- Decision Making & Branching
- Decision Making & Looping

**Methods in Java:**

- Introduction to Methods
- Argument passing mechanism
- Pass by value
- Pass by reference
- Arrays
- Wrapper Classes
- Manipulating strings



### **OOPS Principle:**

- Basic principles of OOPS
- Class & Object
- Access modifiers
- Constructors & destructors
- Static members

### **Inheritance & Polymorphism:**

- Inheritance & polymorphism
- Overloading methods
- Hiding methods
- Abstract class
- Abstract methods
- Multiple inheritance
- Interfaces
- Method Overriding

### **Packages & Exception Handling**

- Packages in Java
- Importing packages
- Creating User defined packages
- Exception Handling
- Built-in Exceptions
- User defined Exceptions

### **Multithreading in Java**

- Multithreading Concept
  - Implementing multithreading in Java
  - Thread Life Cycle
  - Thread Priorities
  - Thread Synchronization
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## **Module 2-Total Days-30**

### **Windows Programming:**

- Introduction to GUI Programming
- Introduction to Frames
- Various component classes
- Creating Frames & Components in Java
- Invoking Properties & methods of components
- Overview of awt components

### **Swings Programming**

- Introduction to Swings
- Layout Managers
- Swings Vs AWT in Java
- GUI Programming using Swings

### **Event Handling**

- Event handling mechanism in Java
- Event Listeners & Event Handlers
- Handling mouse & keyboard listeners
- Using MouseListener & MouseMotionListener

### **Applet Programming**

- Applet Introduction
- Applet Life Cycle
- Creating Web pages using Applet
- Handling Events on Applet

### **I/O Programming**

- I/O Introduction
- Byte Streams & Character Streams
- Reading & Writing data
- Object Serialization & Deserialization



### **Socket Programming**

- Client Server Architecture
- Protocols Overview
- Client Server communication using TCP/IP

### **Collections Framework**

- Introduction to java.util package
- Various classes & interfaces
- Vector, Stack & Hashtable classes

### **JDBC Programming**

- JDBC API
- JDBC Architecture
- Classes & Interfaces of JDBC API
- Creating JDBC application
- Managing database transactions

### **Advanced JDBC Programming**

- Creating applications using PreparedStatement object
- Creating and calling stored procedures in JDBC
- Using Metadata in JDBC
- ResultSetMetaData & DatabaseMetaData interfaces

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## **Module 3-Total Days-15**

- Features of MS-SQL server
- SQL-DDL,DML,DCL

### **Using Select Statement**

- Use the SELECT statement with logical operators
- Use wildcards
- Use the IS NULL and IS NOT NULL keywords



- Use the ORDER BY clause
- Use the TOP keyword
- Use the DISTINCT keyword
- Use aggregate functions in queries
- Group result sets
- Use the COMPUTE and COMPUTE BY clause

### **Using functions**

- String functions
- Mathematical functions
- Datetime functions

### **Using JOINS**

- Inner Join
- Outer Join
- Self Join
- Equi Join
- Natural Join
- Cross Join

### **Using Subqueries**

- Creating subqueries
- Use subqueries with the IN clause
- Use subqueries with the EXISTS clause
- Use nested subqueries
- Use correlated subqueries

### **Databases**

- Creating database
- Viewing database
- Deleting database
- Renaming database

### **Database Tables**

- Create tables



- Insert rows into tables
- Delete tables
- Altering tables
- Create user-defined datatype
- List various types of data integrity
- Add the following constraints to tables:
  - PRIMARY KEY
  - UNIQUE
  - FOREIGN KEY
  - CHECK
  - DEFAULT

### **DML Statement**

- Maintain data in a table by using
- INSERT statement
- UPDATE statement
- DELETE statement
- Truncate a table

### **Implementing Views & Batches**

- Create, alter, drop, and rename views
- Update data using views
- Declare variables
- Print messages
- Use comments
- Use conditional statements
- Use the iteration statements

### **Implementing Stored Procedures**

- Create a stored procedure
- Execute a stored procedure
- Pass parameters to a stored procedure
- Modify a stored procedure
- Drop a stored procedure

## Backup & Recovery Procedure

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## Module 4- Project(Window Based) Window based project using Netbeans IDE7.0 with SQL Server as backend

### Module 5-Total Days-30

#### Overview of HTML

- HTML Introduction
- HTML Elements & Attributes
- Creating hyperlinks
- Creating Lists & Tables
- HTML Forms & Controls

#### Overview of XML

- Introduction to XML
- Creating XML documents
- Introduction to parser
- Validating & Non-Validating parsers
- Introduction to DTD & XSD

#### J2EE introduction

- J2EE Concept
- J2EE Architecture
- Application Server
- Web & EJB Server
- Configuring J2EE data source



## **Servlet Programming**

- Introduction to Servlets
- HttpServlets & GenericServlets
- Servlet mapping & configuration
- Inter-Servlet communication
- Security in Web Application
- Session Management

## **JSP Programming**

- Introduction to JSP
- JSP directives
- JSP Standard actions
- Java beans

## **EJB Programming**

- MVC Architecture
- EJB Introduction
- Different types of EJB
- Components of EJB
- Session Beans & Entity Beans
- Transaction Management

## **Java Messaging Service**

- JMS overview
- Queues and Topics
- Introduction to MDB

## **Module 6-Total Days-60**

Project (Web based)

Web based Project using NetBeans IDE7.0 deployed using GlassFish Server and SQL Server as backend .



Note: 10 Days are reserved for Assignments/Module Tests/Presentations.

