

Working with Java Technology

Introduction to Java

- What is java?
- How to get java
- First java program
- Compiling and interpreting application
- JDK directory structure

Datatypes & Variables

- Primitive Data types , Declarations
- Variable Names Numeric Literals, Character Literals
- String, String Literals
- Arrays, non-Primitive Datatypes, The Dot Operator

Operators & Expression

- Expressions
- Assignment Operator
- Arithmetic Operators
- Relational Operators
- Logical Operators
- Increment and Decrement Operators
- Operate-Assign Operators (+=, etc.)
- The Conditional Operator
- Operator Precedence
- Implicit Type Conversions
- The Cast Operator

Control flow Statement

- Conditional (if) Statements
- Data types and Variables 3
- Adding an else if
- Conditional (switch) Statements
- while and do-while Loops
- for Loops
- The continue Statement
- Break Statement

Object Oriented Programming System (OOPS)

Understanding OOP,s

- Introduction to Object-Oriented Programming
- Classes and Objects
- Encapsulation
- Access Control
- Inheritance
- Polymorphism

Object & Classes

- Defining a Class
- Defining a Class
- Methods
- Constructors
- Access Modifiers
- Encapsulation

Using java Objects

- Printing to the Console
- printf Format Strings
- StringBuilder and StringBuffer
- Methods and Messages
- toString
- Parameter Passing

Inheritance in java

- Inheritance in Java
- Casting
- Method Overriding
- Polymorphism
- Super
- The object classes

Packages

- The import Statement
- Static Imports
- Defining Packages
- Package scope

Exception Handling

- Exceptions Overview
- Catching Exceptions
- The finally Block
- Exception Methods
- Declaring Exceptions
- Defining and Throwing Exceptions
- Errors and Runtime Exception

Collections

- The Collections Framework
- The Set Interface
- Set Implementation Classes
- The List Interface
- List Implementation Classes
- The Map Interface
- Map implementation Classes

Input/output Stream

- Overview of Streams
- Bytes vs. Characters
- Converting Byte Streams to Character Streams
- File Object
- Binary Input and Output
- PrintWriter Class
- Reading and writing objects

Multi-Threading

- Threaded Applications
- Creating Threads
- Thread States
- Runnable Threads
- Coordinating Threads
- Interrupting Threads
- Runnable Interface
- Synchronization

Inner Classes

- Inner Classes
- Member Classes
- Local Classes
- Anonymous Classes
- Instance Initializers
- Static Nested Classes

Interfaces & Abstract Classes

- Separating Interface and Implementation
- UML Interfaces and Realization
- Defining Interfaces
- Implementing and Extending Interfaces
- Abstract Classes

Serialization

- Object Serialization
- Serializable Interface
- Serialization API
- The Serialization Engine

Generics

- Using Generics
- Type Erasure
- Type Boundaries
- Wildcards , Generic Methods
- Strengths and Weaknesses of Generics

Working With Window Application

- AWT
- Event Handling
- Swing
Swing applet, Icons and Labels, Text Fields, Buttons, JButton Class, Check Box, Radio Buttons, The Container, Panel, Windows, and Frame Classes, Combo Box, Tabbed Panes, Scroll Panes, Trees, Tables.

JDBC

- Jdbc Fundamental
- Establish Connectivity & Working with Connection Interface
- Working with statement
- Creating & executing SQL statement
- Working with Result set object

Web Programming with J2EE

Servlets

- Introduction of servlets
- Life cycle of servlets , java servlet Development Kit, creating, Compiling and running servlet
- The Servlet API: javax.servlet package
- Reading the servlet Parameters, Reading Initialization
- The javax.servlet. Http package
- Handling HTTP Request and Response (GET / POST Request) Using Cookies, Session Tracking

JSP

- Advantage of jsp Technology
- Jsp Architecture, jsp Access Model
- JSP Syntax Basic (Directions, Declarations, Expression, Scriptlets, Comments)
- Jsp Implicit Object, Object Scope
- Application, Directory, Structure
- Exception Handling
- Session Management

Introduction of Java Beans

- What is java Bean?
- Advantage
- Jar Files
- Using the java Beans API

Struts

- MVC Architecture
- Struts Controller Components
- Struts Framework
- Struts View Components
- Struts Model Components
- Struts Tag libraries
- Exception Handling in struts

Hibernate

- Hibernate Configuration
- Entity definition and O/R Mapping
- Working with Persistent Objects
- Hibernate/JPA Queries
- Advance Concept

Spring

- Introduction to Spring
- Steps to use Spring Framework in applications
- Introducing data access with Spring – JDBC through spring
- Transactions in a Spring environment
- Getting started with Hibernate in a Spring environment
- Working with Spring MVC
- Spring MVC Form Handling
- Creating Views in Spring MVC
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Learning SQL Server 2005

Introduction to Management Studio

- Window Authentication
- SQL Server Authentication
- Creating and using databases
- Writing SQL Queries in Query Window

SQL Statements

- CREATE DATABASE
- CREATE TABLE
- ALTER DATABASE
- DROP DATABASE
- DROP TABLE

JOINS

- Inner Joins
- Outer Joins
- Cross Joins

Constraints

Introduction to Constraints

Types of Constraints

- Domains constraints
- Entity con straints
- Referential Integrity constraints

Key Constraints

- PRIMARY KEY
- FOREIGN KEY
- UNIQUE
- CHECK
- DEFAULT

Creating and using Views

- Creating Simple Views
- Editing views with T-SQL
- Dropping views

Stored Procedures

- Creating stored procedures
- Altering the stored procedures
- Dropping the stored procedures
- Handling errors

Transaction Management

- BEGIN TRAN
- COMMIT TRAN
- ROLLBACK TRAN
- SAVE TRAN

Creating and Using Triggers

- Introduction to triggers
- Using triggers for Data Integrity rules
- Nested Triggers
- Dropping triggers

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