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Java Basics(L1)

Introduction to Java

Object Oriented Programming Fundamentals
Structure of a Java Program

Data Types

Primitive data types
Reference Data Types
Keywords, Identifiers, Expressions

Operators

Arithmetic Operators
Assignment Operators
Logical Operators
Relational Operators
Bitwise Operators

Variables

Declaration, Definition, Types

Methods

Syntax, Types

Object

Object Creation, Reference, Reference Variables

Constructors

Pass by Value and Pass by Reference
Access Specifiers
Access Levels
Decision Making and Control Structures

Strings

String, String Buffer, String Builder

Java Beans

Arrays

Declaring and defining arrays

Primitive Arrays

Object Arrays

Inheritance

Is-A Relationship

Has-A Relationship

Inheritance using extends keyword

Inheritance using implements Keyword

Abstraction

Abstraction using abstract classes

Abstraction using interfaces

Encapsulation

Interfaces

Interfaces Vs Classes

Nested Interfaces

Interface as a type

Polymorphism

Overloading

Constructor overloading

Overloading between classes

Overriding

Exception Handling

Exception

Categories of Exception, Exception hierarchy

Throw and throws keywords

Try catch and finally keywords

Collection Framework

Core Interfaces

Core Classes

Iterator

Comparable & Comparator

Generics

Auto boxing

Unboxing

Casting

Primitive Casting

Reference Casting

Up casting and down casting
File Handling
File Handling in Java
Files, Streams, Types of Streams
Serialization
Threads
Thread Life Cycle
Thread States
Creating Threads
Threads Priorities
Thread Groups
Synchronization
Inner Classes
Nested Classes
Anonymous Classes

J2EE

Overview of J2EE and WWW
The HTTP Protocol and Web Application Introduction
Environment Setup
HTML
Servlets
What is a Servlet?
Servlet Lifecycle, Configuring a Servlet, Types of Servlet
Servlet Context
Servlet Config

Deployment descriptor
Session Management
Java Server Pages (JSP)
JSP Lifecycle
Servlets vs JSP
Scriptlets
Directives
Declaration
Sessions
Mixing Scriptlets and HTML
Tag Libraries
Beans and Forms Processing
MVC Architecture

JDBC

Database Setup (MySQL)

Overview

JDBC Driver Types

How JDBC Works

Steps Involved

JDBC Process details

Queries

Prepared Statements

Callable Statements

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