1. History

Why Java

Comparison with others

Need of Java

2. Introduction

Flavors of Java

Features of Java Language

JVM - The heart of Java

Java's Magic Bytecode

Installing Java

Java Program Development

Java Source File Structure

Compilation

Executions

3. Object Oriented Programing Concepts

What is an Object? What
is Class?

What is an Inheritance?

What is Package?

4. Language Basics

Variables

1. Primitive Data types

2. Arrays

Operators

1. Assignment, Arithmetic and Unary
2. Equality, Relational and Conditional

Expressions, Statements and Blocks

Control Flow Statements

1. if...then and if..then..else
2. Switch
3. While and Do...While, for.

5. Classes and Objects

Classes

1. Declaring Classes
2. Declaring Member Variables
3. Defining Methods
4. Constructor
5. Passing Info to Method or Constructor

Objects

1. Creating Objects
2. Using Objects

More On Classes

1. return statement to method
2. this Keyword
3. Access Specifiers
4. Instance and Class Members or Methods

5. Initializing Fields

Nested Classes

1. Inner Class
2. Local Inner
3. Anonymous Inner Class

4. Enumerations

6. Interface and Inheritance

Interfaces

1. Defining Interface
2. Implementing Interface
3. Using Interface as Type

4. Rewriting Interfaces

Inheritances

1. Overriding and Method hiding
2. Polymorphism
3. Hiding Fields
4. Super keyword
5. Object father of all Classes
6. Final Class and Methods
7. Abstract classes and Methods

7. Numbers and Strings

- Numbers
    1. Wrapper Classes
    2. Formatting
    3. Beyond Basic Arithmetic
4. Rewriting Interfaces
- Characters
- Strings
    1. Number and String Conversion
    2. Manipulating Characters in String
3. Sub String Manipulation
    4. String Builder class
- Autoboxing and Unboxing

8. Packages

- Creating Package
- Naming Package
- Using Package Members

9. Exception Handling

- What is an Exception?
- Catch or Specify Requirement
- Catching and Handling Exceptions
    1. try block
    2. catch block
    3. finally block
    4. Specifying Exceptions thrown by method
- Throw Exceptions
    1. Chained Exceptions
    2. Creating Own Exceptions
- Unchecked Exception - Controversial

10. File Handling

- I/O Streams
    1. Byte Streams
    2. Character Streams

3. Buffered Streams
4. Scanning And Formatting
5. I/O from Command Line
6. Data Streams
7. Object Streams and Serialization

8. File IO

11. Threading

Processes And Threads

Thread Objects

1. Defining and Starting Threads

2. Sleeping Threads

3. Interrupting Threads
4. Joining Threads

Synchronization

1. Thread Interference
2. Memory Consistency Error

3. Synchronized Methods

4. Volatile Keyword

12. Generics

Why Generics?

Generic Raw Type

Generic Methods

Bounded Parameters

Generics

Inheritance and Sub Types

Type Inference

13. Collection

Collection Framework

Collection Classes and Interfaces

14. Java Database Connectivity

JDBC Introduction

1. JDBC Architecture

2. Database Overview

JDBC Basics

1. Getting Started
2. Establishing Connections
3. Processing SQL statements with JDBC

4. Handling SQL Exceptions.

5. Result Sets
6. Using Statements
7. Using Prepared Statements
8. Using Callable Statements

Java 8

15. Introduction to Java 8 Lambda Expressions

Introduction to Java 8
Overview of Java 8 Features and Enhancements
Anonymous Functions, Streams
Interfaces in Java 8
Functional Programming
Lambda Expressions and Functional Interfaces
Type Inference in Java 8

16. Streams and Lambda Expressions - Java 8

Streams
The Stream Interface
Reduction and Parallelism
Collections and Collectors
Using Lambda Expressions
Using Method References in Lambda Expressions
Optional vs. Null

17. Java 8 Enhancements

New Java 8 features
The New Date/Time API
LocalDate, LocalDateTime

Formatting Dates

StringJoiner

Static Methods on Interfaces

Repeating and Type Annotations

Parallel Array Sorting

Improved Type Inference

Method Parameter Reflection

Java 8 Concurrency updates