

TRON SOFTECH – IT Training

JAVA/Advance Java Programming

JAVA Programming

- ▶ Object Oriented Concepts
- ▶ Introduction to JAVA
- ▶ Writing Java Classes
- ▶ Language Fundamentals
- ▶ Inheritance and Polymorphism
- ▶ Interfaces
- ▶ Java Miscellaneous
- ▶ Introduction to AWT
- ▶ Event Handling in AWT and Swing
- ▶ Layout Managers
- ▶ GUI
- ▶ Exception handling
- ▶ Multi Threading
- ▶ IO & File Handling
- ▶ IO & Utility Classes
- ▶ Applets
- ▶ Socket Programming
- ▶ JDBC

Advanced JAVA Programming

- ▶ Chapter 1: Review of Java Fundamentals
 - The Java Environment
 - Data Types
 - The String Class
 - The StringBuffer Class
 - Arrays
 - Passing Data Types to a Method
 - Constructors and Initialization
 - Inheritance
 - Abstract Classes
 - Interfaces
 - Static Data, Methods, and Blocks
 - Wrapper Classes
 - I/O
- ▶ Chapter 2: Packaging and Distributing a Java Application
 - Packages
 - Managing Source and Class Files

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- The javadoc Utility
- Documenting Classes and Interfaces
- Documenting Fields
- Documenting Constructors and Methods
- Running the javadoc Utility
- jar Files
- The Manifest File
- Bundling and Using Jar-Packaged Resources

- ▶ Chapter 3: Miscellaneous Enhancements

- Enhanced for Loop
- Autoboxing and Auto-Unboxing
- Static Imports
- varArgs
- Typesafe Enums
- Formatted Strings
- Format Specifier Syntax
- Format Specifier Conversions
- Format Specifier Flags
- Formatted Integers Example
- Formatted Floating Points Example
- Formatted Strings Example
- Formatted Dates Example
- Complex Formatted Example

- ▶ Chapter 4: Assertions

- Introduction
- Assertion Syntax
- Compiling with Assertions
- Enabling and Disabling Assertions
- Assertion Usage

- ▶ Chapter 5: Regular Expressions

- Regular Expressions
- String Literals
- Character Classes
- Quantifiers
- Capturing Groups and Backreferences
- Boundary Matchers
- Pattern and Matcher

- ▶ Chapter 6: The Java Collection Classes

- Introduction
- The Arrays Class
- Searching and Sorting Arrays of Primitives
- Sorting Arrays of Objects

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The Comparable and Comparator Interfaces

Sorting - Using Comparable

Sorting - Using Comparator

Collections

Lists and Sets

Iterators

Lists and Iterators Example

Maps

Maps and Iterators Example

The Collections Class

Rules of Thumb

●▶ Chapter 7: Generics

Introduction

Defining Simple Generics

Generics and Subtyping

Wildcards

Bounded Wildcards

Generic Methods

●▶ Chapter 8: Advanced I/O

Introduction

Basic File I/O Example

Buffered I/O

The Console Class

Object Serialization

Serialization Issues

Compressed Files

Zip File Example

Writing Your Own I/O Classes

Property Files

The Preferences Class

●▶ Chapter 9: Enhanced I/O

Introduction

Channels

Buffers

Typed Buffers

Direct Buffers

●▶ Chapter 10: Logging API

Introduction

Loggers

Logger Levels

Logger Handlers

Specifying Handlers and Formatters

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Configuring Handlers
LogManager

- ▶ Chapter 11: Networking

Networking Fundamentals

The Client/Server Model

InetAddress

URLs

Sockets

A Time-of-Day Client

Writing Servers

Client/Server Example

- ▶ Chapter 12: Threads and Concurrency

Review of Fundamentals

Creating Threads by Extending Thread

Creating Threads by Implementing Runnable

Advantages of Using Threads

Daemon Threads

Thread States

Thread Problems

Synchronization

Performance Issues

- ▶ Chapter 13: Remote Method Invocation (RMI)

Introduction

RMI Architecture

The Remote Interface

The Remote Object

Writing the Server

The RMI Compiler

Writing the Client

Remote Method Arguments and Return Values

Dynamic Loading of Stub Classes

Remote RMI Client Example

Running the Remote RMI Client Example

- ▶ Chapter 14: Java Database Connectivity (JDBC)

Introduction

Relational Databases

Structured Query Language

A Sample Program

Transactions

Meta Data

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