



# HEADSTAR TECHNOLOGIES

## **JAVA(CORE)**

### **REVIEW OF JAVA FUNDAMENTALS**

- The Java Environment, Data Types, The String Class
- The StringBuffer Class, Arrays
- OOPs Feature and implementation in java
- Passing Data Types to a Method
- Constructors & Initialization
- Inheritance, Abstract Classes, Interfaces, Static Data
- Methods and Blocks, Wrapper Classes, I/O

### **PACKAGING & DISTRIBUTING A JAVA APPLICATION**

- Packages, Managing Source & Class Files
- The javadoc Utility
- Documenting Classes & Interfaces, Documenting Fields, Documenting Constructors and Methods
- Running the javadoc Utility
- Jar Files, The Manifest File
- Bundling and Using Jar-Packaged Resources

### **MISCELLANEOUS ENHANCEMENTS**

- Enhanced for Loop, Autoboxing and Auto-Unboxing
- Static Imports, var Args, TypeSafe Enums
- Formatted Strings, Specifier Syntax, Integer Example
- Format Specifier Conversions, Specifier Flags
- Formatted Floating Points Example, Strings Example
- Formatted Dates & Complex Formatted Example

### **ASSERTIONS**

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

### **REGULAR EXPRESSIONS**

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

### **INTRODUCTION TO APPLET**

- Use an applet on a Web page, Manage applet thread
- Send and receive applet parameters
- Display fonts and colors in applets

### **INTRODUCTION TO AWT & SWING**

- Rationale for the Swing Components
- Java Foundation Classes, Lightweight Components
- Features of the Swing Components
- The AWT Components
- An Example Using the AWT Components
- Building a Minimum Swing Application

- Window Positioning, Handling Window Events
- Window Closing Styles, Inner Classes
- Anonymous Inner Classes
- JButton with Selected Fonts
- JButton with an Icon & Mnemonic
- The Icon Interface



# HEADSTAR TECHNOLOGIES

- Labels, The Focus, Focus Traversal, KeyboardInput
- Keyboard Shortcuts, Keystrokes andActions
- Flow, Grid, Border,Card
- GridBag Layout, Box,Overlay
- GridBagConstraints, Models, Views, andControllers

## **THE JAVA COLLECTIONCLASSES**

- Introduction, The ArraysClass
- Searching and Sorting Arrays ofPrimitives
- Sorting Arrays ofObjects
- The Comparable and ComparatorInterfaces
- Sorting - UsingComparable
- Comparator,Collections
- Lists and Sets, Iterators, Lists and IteratorsExample
- Maps, Maps and IteratorsExample
- The Collections Class, Rules ofThumb

## **GENERIC**

- Introduction, Defining SimpleGenerics
- Generics &Subtyping
- Wildcards, Bounded Wildcards, GenericMethods

## **ADVANCED I/O**

- Introduction, Basic File I/O Example, BufferedI/O
- The Console Class, ObjectSerialization
- SerializationIssues

## **NETWORKING**

- Networking Fundamentals, The Client/ServerModel
- InetAddress, URLs, Sockets, A Time-of-DayClient
- Writing Servers, Client/ServerExample

## **THREADS AND CONCURRENCY**

- Review ofFundamentals
- Creating Threads by ExtendingThread
- Creating Threads by ImplementingRunnable
- Advantages of UsingThreads
- Thread Daemon, Thread States, ThreadProblems
- Synchronization, PerformanceIssues

## **REMOTE METHOD INVOCATION(RMI)**

- Introduction, RMIArchitecture
- The RemoteInterface
- The Remote Object, Writing theServer
- The RMI Compiler. Writing theClient
- Remote Method Arguments and ReturnValues
- Dynamic Loading of StubClasses
- Remote RMI ClientExample
- Running the Remote RMI ClientExample

## **JAVA DATABASE CONNECTIVITY(JDBC)**

- Introduction, JDBC DriverTypes

- Relational Databases, Structured QueryLanguage
- A Sample Program, MetaData
- Processing DatabaseData
- Executing statements, precompiledstatements
- Stored procedures, ProcessingResultSets
- Dealing with Null data,Updating
- Inserting, retrieving data, ControllingTransactions