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SPIRO - PROFESSINAL STUDENT PROCESS ACADEMY
(TRAINING DIVISON OF SPIRO SOLUTIONS PVT. LTD)
ISO 9001:2008 CERTIFIED ,NASSCOM LISTED COMPANY

+91-9791 044 044

Learning to Basic Java Program

Duration:40 HOURS | Price: INR 5000 SAVE NOW! INR 4OOO until December 1, 2011

Students Will Learn

- Fundamental Elements of Programming
- Classes, Objects and Methods
- Structured Programming Techniques
- Arrays and Data Structures
- Exception Handling
- String Handling
- Fundamental Algorithms
- GUI Programming Concepts

Course Description: This hands on Java Programming course provides an introduction to programming using the Java language. Students are introduced to the application development cycle, structure of programs, and specific language syntax. The course introduces important algorithmic constructs, string and character manipulation, dynamic memory allocation, standard I/O, and fundamental object-oriented programming concepts. The course explains the use of inheritance and polymorphism early on so the students can practice extensively in the hands on labs. Structured programming techniques and error handling are emphasized. The course includes the processing of command line arguments and environment variables so students will be able to write flexible, user-friendly programs.

This class is intended for non-programmers. Students who already understand fundamental structured programming and object-oriented techniques should attend the Java Programming course instead of this more introductory course.

Course Prerequisites: Familiarity with computers.

Learning to Basic Java Program Course Overview

Fundamentals of the Program Development Cycle

- Computer Architecture
- The Notion of Algorithms
- Source Code vs. Machine Code
- Compile-Time vs. Run-Time
- Software Program Architecture
- Standalone
- Client/Server
- Distributed
- Web-Enabled
- IDE (Interactive Development Environment) Concepts

Application Development Fundamentals

- Structure of a Java Program
- Memory Concepts
- Fundamental Data Type Declarations
- Fundamental I/O Concepts
- Fundamental Operators
- Arithmetic Operators
- Logical Operators
- Precedence and Associatively
- Building and Deploying a Java Program

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Introduction to Classes and Objects

- Classes, Objects and Methods
- Object Instances
- Declaring and Instantiating a Java Object
- Declaring Methods
- set and get Methods
- Initiating Objects with Constructors
- Primitive Types vs. Reference Types

Writing Methods (Functions)

- Static vs. Dynamic Allocation
- Declaring Methods
- Declaring Methods with Multiple Parameters
- Method-Call Stack
- Scope of Declarations
- Argument Promotion and Casting
- Designing Methods for Reusability
- Method Overloading

Deeper Into Classes and Objects

- Controlling Access to Class Members
- Referencing the Current Object Using this
- Overloading Constructors
- Default and No-Argument Constructors
- Composition of Classes
- Garbage Collection and Destructors
- The finalize Method
- Static Class Members

Fundamental Searching and Sorting

- Introduction to Searching Algorithms
- Linear Search
- Binary Search
- Introduction to Sorting Algorithms
- Selection Sort
- Insertion Sort
- Merge Sort

Flow Control

- Conditional Constructs
- Looping Constructs
- Counter-Controlled Repetition
- Sentinel-Controlled Repetition
- Nested Control Constructs
- break and continue Statements
- Structured Programming Best Practices

Arrays

- Purpose of Arrays
- Declaring and Instantiating Arrays
- Passing Arrays to Methods
- Multidimensional Arrays
- Variable-Length Argument Lists
- Using Command-Line Arguments
- Using Environment Variables

Defining Classes Using Inheritance

- Superclasses and Subclasses
- Advantages of Using Inheritance
- protected Class Members
- Constructors in Subclasses

Files and Streams

- Concept of a Stream
- Class File
- Sequential Access
- Object Serialization to/from Sequential Access Files
- Additional java.io Classes

Fundamental Data Structures

- Dynamic Memory Allocation
- Linked Lists
- Stacks
- Queues
- Tree

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Exception Handling

- Types of Exceptions
- Exception Handling Overview
- Exception Class Hierarchy
- Extending Exception Classes
- When to Throw
- Assert Exceptions

Formatted Output

- printf Syntax
- Conversion Characters
- Specifying Field Width and Precision
- Using Flags to Alter Appearance
- Printing Literals and Escape Sequences
- Formatting Output with Class Formatter

Strings, Characters and Regular Expressions

- Fundamentals of Characters and Strings
- String Class
- String Operations
- StringBuilder Class
- Character Class
- StringTokenizer Class
- Regular Expressions
- Regular Expression Syntax
- Pattern Class
- Matcher Class

Fundamental GUI Programming Concepts

- Overview of Swing Components
- Displaying Text and Graphics in a Window
- Event Handling with Nested Classes
- GUI Event Types and Listener Interfaces
- Mouse Event Handling
- Layout Managers

Student Testimonials

"The course was a good ice-breaker to the world of Java. I feel much confident now to explore my automation skills."
– Thomas

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