



Java Bootcamp

delivered by:

Well House consultants LTD.

4 Day Course

Introduction

The fundamental elements of Java. Source Code. Class files. The Java Runtime Environment. The Java World. Java development environments and tools. Java Runtime Environments. Java distributions. Java standard packages. Java versions.

Hello Java World

A first program explained. Methods and classes. Blocks and statement structure. Declaring classes and methods. Within a statement. Reserved words. Commenting your source. The code in operation. A further program.

Variables

First use of variables in Java. Variable names. Declaring and initialising variables. Primitive types. Type casting and conversion. Reading input from the user.

Loops and Conditional Statements

Booleans. "if" statement. "while" loop. "for" loop. Labels and breaks.

Arrays

Definition and declaration. Use. Array manipulation and replacement. Multidimensional arrays. Arrays of Objects.

Object Orientation: Individual Objects

A History. Unstructured Code. Subroutines, functions, procedures. Structured Programming. Object Oriented Programming. A note on political, or religious issues. Introduction to OO Programming. Classes. Methods. Static and Nonstatic. Instances. Constructors. Destructors. Overloading. Accessing members of a class. Loading. Use. Direct access to variables. Testing. Encouraging class use.

Objects and Classes

Using an instance of a class. Some detail of using an object. Writing your own class. Enhancements to the basic class structure. Class or static methods. Direct variable access. this.



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Overloading. An example. Naming conventions. Alternative:.

Strings

Character variables. String constants. Creating String objects. Operations on strings. Comparing strings. Accessing characters within strings. Character arrays v String objects. String buffers.

Packages

Overview. Package directory structure. Importing classes from a package. Introduction to standard packages.

Class Access

Private, public, protected. Inner classes. "finalize" method.

Object Orientation: Composite Objects

Revision. Inheritance. Base classes and subclasses. What's inherited?. Overriding. Abstract classes. Polymorphism. Inheritance structure. Multiple Inheritance. Class structure. Hierarchy. Visibility. Designing Objects.

Extending Classes and More

Extended classes. Encapsulation. Alternative exercise. Abstract Classes. Getting your design right. The universal superclass. Interfaces. The final modifier.

Object Orientation: Design Techniques

OO Design - some basics. Start with a good understanding of OO. And also a good understanding of the buzz words and design cycle.. Informal Techniques. Micro or Macro?. Specifying classes and methods. Specifying extended classes. Clusters of classes. Generalise it out. Programming and method standards. Formal Methods. Unified Modelling Language (UML). Views. Diagrams. Model Elements. UML Summary. Tools. Project management and design issues. Extreme programming. Planning. Design. Coding. Testing.

Exceptions

"trying" and "catching". "throwing". "finally". Defining your own exceptions.



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More Input and Output.

The Wellreader class. Input/output from basics. Streams. Writing to a file. Formatted output. Reading from a file.

Fundamental classes

The fundamental packages. java.lang. java.util. Other fundamental packages. Data wrappers. Why use data wrappers?. Other methods on Float objects. Other methods on other data wrapper objects. java.lang.Math. External low-level calls. The System class - miscellaneous features. The System class - garbage collection. The Runtime and Process classes. A word of caution on system classes. Utility objects to hold multiple simple objects. Vectors. Stacks. Hashes. Enumerations. The StringTokenizer. Collections. ArrayLists. HashSets. Iterators and general Collection interfaces. HashMaps. Sorting. Basic sorting in Java. Comparator classes. The Comparable interface.

Servlets

What is a Servlet?. Running the server. A first servlet. The HTML form. The servlet. Reusing a servlet. Form and results in same window. Interactive form.

JSP - JavaServer Pages

Introduction. A simple worked example. The structure of a JSP Page. What basics can I put in my HTML?. Entering data into a form. What happens to the form data?. What happens next?. Example - form, data validation, initial page and response in single script. How To Create a Form. A Simple Hello Application. Constructing the HTML Form. Using the GET and POST Methods. Writing the Bean. Getting Data From the Form to the Bean. Checking the Request Object. Getting data from the Bean to the JSP Page. How to run the example. Using scripting elements. How to add scripting. The difference between <%, <%=, and <%!. The Number Guess Game. Using Scripting Elements in a JSP File. Mingling scripting elements with tags. When are the scripting elements executed?. How to run the example. A JSP that maintains state.

Java Roadmap - Beyond the Fundamentals

Java releases. Java Runtime Environments. "Stand Alone" Java programs. Java Applets. Java servlets. Java Server Pages. Other JREs. Application Programmer Interfaces (APIs). Useful "basic" classes. The Java foundation classes. The Threads API. JDBC. RMI. Java Beans. Enterprise Beans. JNDI. and also Synchronized. Serializable and transient. jars. Summary.



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Servlets in More Detail

Introduction. What is a Servlet?. How do Servlets fit into the scheme of things?. What alternatives are there to servlets?. Servlet Engines. Java Class Structure. Data Interface. A first servlet. Reading from a form. At a higher level. Get v Post. The life of a servlet. Initialisation. Destruction. Example procedure - take an application of ours, modify, re-upload. Maintaining State. Session Objects. Rewriting URLs. Hidden fields. Programming techniques. Webifying output. Keeping code and pages separate. State Diagrams. Other facilities of servlets. Multiuser Servlets. Servlet Descriptions. Cookies. Sessions in Servlets.

Maximum number of delegates: 10

Cost: Members – 6.5 Units

To register please email our Training Co-ordinator on registrations@thelearningcollaboration.com