page1image1808768

Java – Induction Program

page1image1662928

|  |
| --- |
| page1image2967808  Course Objective  page1image1665840 |
| This course is prepared to help beginners to understand basics of relational database, learn fundamentals of Java programming, gain insight with respect to using relational database with Java.  The idea of this course is to enable to the participants to learn from the beginning to a point where they can independently design and develop simple web site. |

|  |
| --- |
| page1image2970944  Duration |
| page1image1670624  15 Working Days (8 Hours / Day) – 3 Weeks. Third Week – Project. |

|  |
| --- |
| Lab Setup Requirement |
| **Hardware Requirement: -**  ⮚Mac Book Pro  **Software Requirement: -**  ⮚Mac OS - Operating System  ⮚MySql ⮚JDK 1.8 ⮚Eclipse IDE or Netbeans IDE  Internet Connection Must  Administrative Rights on all machines  LAN Connectivity Must |

page2image1809664

|  |  |
| --- | --- |
| **Detailed Course Break Up** | |
| **Duration: 10 Days** | |
| **S.No** | **Duration: 2 Days** |
| 1 | **RDBMS Using MySQL**  Architecture of MYSQL with its features  Working with Data Definition Language (DDL)  - Create, Alter, Drop Commands Working with Data Manipulation Language (DML)  - Insert, Update, Delete and Select Commands  Working with Data Control Language (DCL)  - Grant and Revoke Commands Implementing Normalization with the help of constraints  Disabling constraints and their issues Establishing one to one and one to many relationships |
| 2 | **RDBMS Using MySQL**  Self-Join, Equi Join, Outer Join, Simple and Complex Views, Clustered and Non clustered Indexes, Querying Data with Stored Procedures, Passing Parameters to Stored Procedures, Creating Simple Stored Procedures |
|  | **Duration: 8 Days** |
| 1 | **Java Fundamentals**  Evolution of Java and forces that shaped it, Java Architecture, JVM (Java Virtual Machine), Portability, Byte Code, Defining a class and an object, Defining a function, Writing the first java program, Language basics, Primitive data types, Arrays |
| 2 | **OOPS Techniques**  Defining Classes, Instantiating and Working with Objects, Introducing access specifiers “private”, default, protected and “public”, Understanding constructors, Use of “this” operator, Static variables, Introduction to garbage collection, Describe Java’s inheritance model and its language syntax, Demonstration of examples related to inheritance  Use of “super” keyword, Defining multilevel hierarchy, Method overriding, Implementing Runtime polymorphism |
| 3 | **Interfaces, Packages, instanceof operator and finalize method, abstract class**  Understanding packges, Need for packages, How to create packages and store classes in it, Implementing access control in java using different access specifiers, Understanding classpath, Example demonstrating the use of package, Importing classes from different packages, Understanding interfaces, Interfaces as elegant alternative to multiple inheritance, How to define an interface and how to implement it, Extending interfaces, Describe the context in which to use the instanceof operator, Describe finalization |

page3image1798016

|  |  |
| --- | --- |
| 4 | **Essentials of Object-Oriented Programming in Java**  Understanding Namespaces, Understanding Scope Resolution, Defining Classes, Instantiating and Working with Objects, Defining Object-Oriented Systems, Implementing Properties in Java |
| 5 | **Exception Handling**  Describe the exception handling mechanism of Java, Describe the use of the keywords that comprise Java’s exception handing. Checked and Unchecked Exceptions, Creating user defined exceptions. Structured Exception Handling |
| 6 | **Utility classes and interfaces**  Describe the need for wrapper classes, Define wrapper classes, Describe the context of using the Cloneable interface, Facilitate the processing of arrays and collections through the Enumeration interface Define dynamic arrays in the form of Vector object, Generics. |
| 7 | **JDBC**  JDBC: Introduction. Architecture & Querying with JDBC. Different types of JDBC Drivers. JDBC URLs. Query. The Statement Object. The ResultSet Object. The DatabaseMetaData Object. The ResultSetMetaData Object. Mapping Database Types to Java Types. The PreparedStatement Object. The CallableStatement Object. Managing Transactions |
| 8 | **Java 8 Features**  forEach() method in Iterable interface  default and static methods in Interfaces  Functional Interfaces and Lambda Expressions  Java Stream API for Bulk Data Operations on Collections  Java Time API  Collection API improvements  Concurrency API improvements  Java IO improvements |
| 9 | **Understanding HTTP web Server**  Use Apache Tomcat to explain concepts of  War file, domain name, IP Address, HTTP protocol, HTTP methods (Get , Post, etc) |

page4image1814144

|  |  |
| --- | --- |
| 10 | **Working with Hyper Text Markup Language**  Basic Tags, Elements, Attributes, Formatting, Images, Tables, Lists, Text Links, HTML Frames, HTML Colors, HTML Fonts, HTML Forms |
| 11 | **Designing HTML5 Pages using CSS**  Identifying areas of improvements with respect to designing HTML Pages. Understanding the purpose of Cascading Style Sheets. Understanding Measurement Units in CSS. Working with Colors for various elements using CSS. Understanding Backgrounds, Fonts, Text and Images. Creating Links, Tables, Borders, Margins and Lists. Working with Padding, Visibility, Positioning and Layers. Creating Rounded Corners, Boarder Images, Multi Background. Creating 2d transform, 3d transform and Animation.  Working with HTML5  Introduction to HTML5, Understanding Syntax of HTML5, Whats IN HTML5 and Whats OUT, Understanding Attributes, Working with Events, Understanding Web Forms 2.0 in HTML5, Working with Canvas & Scalar Vector Graphics (SVG), Storing data of HTML5 - Web Storage & Web SQL, Audio & Video Tags, Identifying user's location using Geolocation.Working with Drag & drop |
| 12 | Working with JavaScript  Understanding Static and Dynamic Web Pages. Introduction to Javascript - Client Side Scripting Language. How to enable Javascript in a web page. Understanding Variables in Javascript. Introduction to Operators , If conditions, Switch Case. Working with Functions and Events. Understanding Objects, Number, Strings, Arrays in Javascript. Imposing Validations to HTML Page using Javascript |
| 13 | Using AngularJS 5.0 |
| 14 | Restful web services using java programs |