

Java and SQL

Day -1 (lecture - 3 hrs hands-on practice - 3 hrs)

- Setup Eclipse IDE and Google Cloud Shell to learn Java Programming Language - preferable prerequisite before the class begins
- Write the first HelloWorld program, compile and run from command prompt
- Understand the following constructs; Class, methods, statements
- Understand the different Data types in Java
- Understand Arithmetic, Relational and logical operators
- Understand logic controls using if-else, case-switch constructs
- Understand loops using for loop, while loop and do-while loop
- Understand Object Data Types - Strings and Arrays
- Hands-on problem solving using all the concepts covered until this point

Day -2 (lecture - 3hrs hands-on practice - 3 hrs)

- Understand the Types of Variables and their scope in Java programs
- Understand Object Oriented Programming concepts - Encapsulation, Inheritance, Polymorphism
- Understand Exception Handling; Checked and unchecked exceptions
- Understand Collection framework components; HashMap, ArrayList, HashSet
- Understand enhanced loops and its applications
- Hands-on problem solving using all the concepts covered on until this point

Day -3 (lecture - 3 hrs Hands-on practice - 3 hrs)

- Understand Interfaces in Java
- Understand Nested and Anonymous classes and when it should be used
- Understand the use of *Static* keyword and where all it can be applied
- Understand the use of Annotations and its advantages
- Hands-on problem solving using all the concepts covered on until this point

Day -4 (lecture - 3 hrs**Hands-on practice - 3 hrs)**

- Setup MySQL on the cloud and understand Relational databases
- Understand CRUD operations by creating a database, table, inserting rows and running select and update queries on the table
- Understand ERD diagrams, primary-key, foreign key relationships
- Setup JDBC driver and access the database through Java program.
- Understand how to use Statement object, ResultSet object etc., in the Java program
- Hands-on problem solving using all the concepts covered on until this point

Note: Although the syllabus is shown with Day -1 through Day -4 breakup, that works for full 4 day continuous programs, the same syllabus could also be delivered for part time courses by following the same sequence of instructions and hands-on labs.

Reference eBooks:

Murach's Java Programming:

<https://www.murach.com/shop/murach-s-java-programming-5th-edition-detail>

https://ebooks.mobibootcamp.com/java_android/index.html

https://ebooks.mobibootcamp.com/java_android_journey_1/index.html