Java Development

Introduction to java
- Java Features
- Keywords
- Variables

Operators
- Unary operator
- Arithmetic operator
- Relational operator
- Logical operator
- Shift operator
- Bitwise operator
- Special operator

Looping & control structure

Looping structure:
- While loop
- Do while loop
- For loop Control structure
- If condition
- If else condition
- Ladder if condition
- Nested if condition
- Switch condition

Patter Programs

Oops Concepts
- Class
- Object
- Inheritance
- Abstraction
- Encapsulation
- Polymorphism

String, StringBuffer and StringBuilder

Array

Exception handling
- Exception hierarchy
- Checked vs unchecked exception
- Exception handling programs
- Throw vs throws
- Customized exception

Multithreading
- What is thread?
- Thread lifecycle
- Thread programs
- Synchronization

Collection
- List
- Set
- Queue
- Map

JDBC API
- Crud operation using JDBC API
- Small application using JDBC API

Servlet
- Lifecycle of Servlet
- Types of Servlet

JSP
- Life cycle of JSP
- Types of tags in JSP
- Implicit object in JSP

Application with JSP & Servlet
- CRUD operation with Database
- HttpServletRequest
- HttpServletResponse
- Session

MVC (Model View Controller)
- MVC Architecture
- Crud application with MVC
- Web application with MVC
- Image, Word, PDF store and retrieve from DB

Hibernate
- Session
- SessionFactory
- Configuration
- Hibernate with xml and annotation
- State of Object In hibernate.
- Crud application using hibernate
- Hibernate Caching technique
- Hibernate relationship
- Hibernate fetching technique
- HQL
- HCQL
- Web application with Hibernate

Spring
- Spring IOC
- Spring DI with SI and CI
- Spring JDBC Template
- Spring Hibernate Template
- Spring + Hibernate Integration
- Spring with annotation
- Spring MVC with xml

- Spring MVC with annotation
- Spring Boot
- Spring Rest API

SQL (Structure Query Language)

Introduction to MySQL.
Installation of MySQL server.
Download sample database.
Load sample database to work.
Writing Basic SQL

- Basic SELECT Statement
- Selecting All Columns
- Selecting Specific Columns
- Writing SQL Statements
- Column Heading Defaults

Arithmetic Expressions

- Using Arithmetic Operators
- Operator Precedence
- Using Parentheses
- Defining a Null
- Defining a Column Alias
- Using Column Aliases
- Concatenation Operator
- Using the Concatenation Operator
- Literal Character Strings
- Using Literal Character Strings
- Duplicate Rows
- Eliminating Duplicate Rows

Restricting and Sorting Data

- Limiting Rows Using a Selection
- Limiting the Rows Selected
- Using the WHERE Clause
- Character Strings and Dates
- Comparison Conditions
- Using Comparison Conditions
- Other Comparison Conditions
- Using the BETWEEN Condition
- Using the IN Condition
- Using the LIKE Condition
- Using the NULL Conditions
- Logical Conditions

- Using the AND Operator
- Using the OR Operator
- Using the NOT Operator
- Rules of Precedence
- ORDER BY Clause
- Sorting in Descending Order
- Sorting by Column Alias
- Sorting by Multiple Columns

Working on DDL Commands

- Relational Database Management System (RDBMS)
- Data Types in SQL
- Alter Table Statements
- Drop Table Statements
- Various Constraints

Working on DML statements

- Data Manipulation Language
- Adding a New Row to a Table
- The INSERT Statement Syntax 8-5
- Inserting New Rows
- Inserting Rows with Null Values
- Changing Data in a Table
- The UPDATE Statement Syntax
- Updating Rows in a Table
- Updating Two Columns with a Subquery
- Removing a Row from a Table
- The DELETE Statement
- Deleting Rows from a Table
- Using a Subquery in an INSERT Statement

Working on multiple tables and Retrieve records from multiple tables

- Self-Join
- Inner Join
- Left Join
- Right Join
- Cross Join

Working on subqueries

- Using a Subquery to Solve a Problem
- Subquery Syntax
- Using a Subquery
- Guidelines for Using Subqueries
- Single-Row Subqueries
- Executing Single-Row Subqueries
- Using Group Functions in a Subquery
- The HAVING Clause with Subqueries

Functions

- Use of built-in function in SQL
- Conversion Function
- Aggregate Functions
- String Functions

HTML (Hypertext Markup Language)

- Introduction
- Laying out a Page with HTML5
    - Page Structure
    - New HTML5 Structural Tags
    - Page Simplification
- HTML5 - How We Got Here
    - The Problems HTML 4 Addresses
    - The Problems XHTML Addresses
    - The New More Flexible Approach of HTML5 - Paving the Cowpaths
    - New Features of HTML5
    - The HTML5 Spec(s)
    - Current State of Browser Support
- Sections and Articles
    - The section Tag
    - The article Tag
    - Outlining
    - Accessibility
- HTML5 Audio and Video
    - Supported Media Types
    - The audio Element
        - Audio Formats
        - Multiple Sources
        - Audio Tag Attributes
        - Getting and Creating Audio Files
    - The video Element
        - Video Tag Attributes
        - Creating and Converting Video Files
    - Accessibility
    - Scripting Media Elements
    - Dealing with Non-Supporting Browsers
- HTML5 Forms
    - Modernizr

    - New Input Types
        - search
        - tel
        - url and email
        - date/time input types
        - number
        - range
        - min, max, and step attributes
        - color
- HTML5 New Form Attributes
    - autocomplete
    - novalidate
- HTML5 New Form Field Attributes
    - required
    - placeholder
    - autofocus
    - autocomplete
    - form
    - pattern
- New Form Elements
    - datalist
    - progress and meter
- HTML5 Web Storage
    - Overview of HTML5 Web Storage
    - Web Storage
        - Browser Support
        - Local Storage
        - Session Storage
        - Prefixing your Keys
    - Other Storage Methods
        - Web Database Storage
        - Indexed Database API
- HTML5 Canvas
    - Getting Started with Canvas
    - Drawing Lines
        - Multiple Sub-Paths
        - The Path Drawing Process
        - The fill() Method
    - Color and Transparency
    - Rectangles

    - Circles and Arcs
    - Quadratic and Bezier Curves
    - Images
        - drawImage() - Basic
        - drawImage() - Sprites
    - Text
- Integrated APIs
    - Offline Application API
        - Cache Manifest File
        - The HTML File
        - Managing ApplicationCache with JavaScript
        - A Sample Application
    - Drag and Drop API
- Conclusion

CSS (Cascading Style Sheet)

- Introduction
    - What Is CSS3?
    - The History of CSS
    - How to Add CSS: Inline Styles, Head Styles, External Files
    - General Syntax: Attributes, Selectors, Cascades, etc.
    - Current State of Browser Support for CSS3
    - How We'll Check This: caniuse.com, IETester, tools.css3.info
- HTML and CSS
    - How HTML Relates to CSS
    - A Basic Overview of HTML5
- Selectors, Pseudo Classes, and Pseudo Elements
    - E[foo^="bar"], E[foo$="bar"], etc.
    - :nth-child, :root, etc.
    - :before, :after, ::selection
- Fonts and Text Effect
    - @font-face
    - Using Web Fonts: Google, Typekit, etc.
    - Font Properties
    - Text Shadow, Text Outline, Text Stroke, etc.
    - Word Wrapping
- Color, Gradients, Background Images, and Masks
    - Opacity
    - New Color Names

  - Nonimage Gradients
  - Multiple Background Images
  - Background-size, Background-origin, Background-clip
  - Image Masks
- Border and Box Effects
  - Rounded Corners
  - Resizing
  - Outline Offsets
  - Appearance
  - Image Borders, Box Shadow
- Transforms, Transitions, and Animations
  - translate(), rotate(), etc.
  - 3D: rotateX(), rotateY()
  - changing, for example, the width of a div on hover (without JS)
  - animations: @keyframes, animation
- Layout: Columns, Flexible Box
  - Column-count, Column-gap, Column-rule
  - Multiple Column Layouts
  - Gaps between Columns
  - Box-orient, Box-pack, Box-align, Box-flex, etc.
  - Display: box
  - Grouping and Changing Orientation
  - Alignment
- Vendor Prefixes
  - Current status of -moz, -o, etc.
  - When and Why to Use
- Embedding Media
  - Simplified Video
  - Audio Embedding with HTML5/CSS3
- Accessibility Features
  - Speech
  - Others
- Forms
  - HTML5
  - New Form Elements
  - Capabilities
- Media Queries
  - Targeting Device Capabilities: Width, Screen Size, Color Depth, etc.
  - Building Responsive Sites: Implications for Mobile
- Implementing CSS3 in the "Real World"

- Modernizer
- HTML5 Shims
- jQuery
- LESS, SASS, and Other CSS Preprocessors
- CSS Grid Systems
- CSS Frameworks

JavaScript

Part I: Getting Started with JavaScript

Chapter 1. Writing Your First JavaScript Program
Section 1.1. Introducing Programming
Section 1.2. How to Add JavaScript to a Page
Section 1.3. Your First JavaScript Program
Section 1.4. Writing Text on a Web Page
Section 1.5. Attaching an External JavaScript File
Section 1.6. Tracking Down Errors

Chapter 2. The Grammar of JavaScript
Section 2.1. Statements
Section 2.2. Commands
Section 2.3. Types of Data
Section 2.4. Variables
Section 2.5. Working with Data Types and Variables
Section 2.6. Tutorial: Using Variables to Create Messages
Section 2.7. Tutorial: Asking for Information
Section 2.8. Arrays
Section 2.9. Tutorial: Writing to a Web Page Using Arrays
Section 2.10. Comments

Chapter 3. Adding Logic and Control to Your Programs
Section 3.1. Making Programs React Intelligently
Section 3.2. Tutorial: Using Conditional Statements
Section 3.3. Handling Repetitive Tasks with Loops
Section 3.4. Functions: Turn Useful Code Into Reusable Commands
Section 3.5. Tutorial: A Simple Quiz

Chapter 4. Working with Words, Numbers, and Dates
Section 4.1. A Quick Object Lesson

Section 4.2. Strings
Section 4.3. Finding Patterns in Strings
Section 4.4. Numbers
Section 4.5. Dates and Times
Section 4.6. Tutorial

Chapter 5. Dynamically Modifying Web Pages
Section 5.1. Modifying Web Pages: An Overview
Section 5.2. Understanding the Document Object Model
Section 5.3. Introducing JavaScript Libraries
Section 5.4. Selecting Page Elements (Revisited)
Section 5.5. Adding Content to a Page
Section 5.6. Setting and Reading Tag Attributes
Section 5.7. Reading, Setting, and Removing HTML Attributes
Section 5.8. Creative Headlines
Section 5.9. Acting on Each Element in a Selection
Section 5.10. Automatic Pull Quotes

Chapter 6. Action/Reaction: Making Pages Come Alive with Events
Section 6.1. What Are Events?
Section 6.2. Using Events with Functions
Section 6.3. Tutorial: Highlighting Table Rows
Section 6.4. More jQuery Event Concepts
Section 6.5. Advanced Event Management
Section 6.6. Tutorial: A One-Page FAQ

Chapter 7. Improving Your Images
Section 7.1. Swapping Images
Section 7.2. Tutorial: Adding Rollover Images
Section 7.3. jQuery Effects
Section 7.4. Tutorial: Photo Gallery with Effects
Section 7.5. Advanced Gallery with jQuery lightBox
Section 7.6. Tutorial: lightBox Photo Gallery
Section 7.7. Animated Slideshows with Cycle
Section 7.8. Tutorial: An Automated Slideshow

Part II: Building Web Page Features

Chapter 8. Improving Navigation

Section 8.1. Some Link Basics
Section 8.2. Opening External Links in a New Window
Section 8.3. Creating New Windows
Section 8.4. Opening Pages in a Window on the Page
Section 8.5. Tutorial: Making Bigger Links
Section 8.6. Animated Navigation Menus

Chapter 9. Enhancing Web Forms
Section 9.1. Understanding Forms
Section 9.2. Adding Smarts to Your Forms
Section 9.3. Tutorial: Basic Form Enhancements
Section 9.4. Form Validation
Section 9.5. Validation Tutorial

Chapter 10. Expanding Your Interface
Section 10.1. Hiding Information with Accordion Panels
Section 10.2. Organizing Information in Tabbed Panels
Section 10.3. Tooltips
Section 10.4. Creating Sortable Tables

Part III: Ajax: Communicating with the Web Server

Chapter 11. Introducing Ajax
Section 11.1. What Is Ajax?
Section 11.2. Ajax: The Basics
Section 11.3. Ajax the jQuery Way
Section 11.4. JSON

Chapter 12. Basic Ajax Programming
Section 12.1. Tabs Plug-in
Section 12.2. Adding Google Maps to Your Site