



Curriculum Of Full Stack With Java

WEB DESIGNING (HTML)

MODULE 1: WEB PROGRAMMING

INTRODUCTION

- Architecture of a website
- Different technologies in making the website
- Web Development Introduction

MODULE 2: HTML-INTRODUCTION

- History of HTML
- What you need to do to get going and make your first HTML page
- What are HTML Tags and Attributes?
- HTML Tag vs. Element
- HTML Attributes

MODULE 3: HTML-HEADERS

- Title
- Base
- Link
- Styles
- Script
- Meta

MODULE 4: HTML-BASIC FORMATTING TAGS

- HTML Basic Tags
- HTML Formatting Tags
- HTML Color Coding

MODULE 5: HTML-GROUPING USING DIV SPAN

- Div Tag
- Span Tags

MODULE 6: HTML SEMANTIC ELEMENTS

- <article>
- <aside>

- <details>
- <figure>
- <footer>
- <header>
- <main>
- <mark>
- <nav>
- <section>
- <summary>
- <time>

MODULE 7: HTML-LISTS

- Unordered Lists, Ordered Lists
- Definition list

MODULE 8: HTML-IMAGES

- Image and Image Mapping
- Background Images

MODULE 9: HTML-HYPERLINK

- Anchor Tag.
- URL - Uniform Resource Locator
- Relative and Absolute Address

MODULE 10: HTML-TABLE

- < table >
- < th >
- < tr >
- < td >
- < caption >
- < the ad >
- < t body >
- < toot >
- < cogroup >
- < col >

MODULE 11: HTML-I FRAME

- Using I frame as the Target



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MODULE 12: HTML-FORM

- HTML Forms
- HTML Form Attributes
- HTML Form Elements
- HTML Input Types
- HTML Input Attributes
- HTML Input form Attributes
- < text area >
- < button >
- < select >
- < label >

MODULE 13: HTML GRAPHICS

- HTML Canvas Graphics
- HTML SVG Graphics

MODULE 14: HTML MEDIA

- HTML Media
- HTML Video
- HTML Audio
- HTML Plug-in
- HTML You Tube

MODULE 15: HTML APIS

- HTML Geolocation
- TML Drag/Drop
- HTML Web Storage
- HTML Web Workers
- HTML SSE

CSS

MODULE 1: CSS INTRODUCTION

- What is CSS?
- Why Use CSS?
- CSS Syntax

MODULE 2: CSS CORE PROPERTIES

- CSS Color

- CSS Backgrounds
- CSS Box Model
- CSS Borders
- CSS Margins
- CSS Paddings
- CSS Box Sizing

MODULE 3: CSS UNITS

- Absolute Units
- Relative Units
- Max-Width
- Min-Width

MODULE 4: CSS STYLING

- CSS Text
- CSS Fonts
- CSS Outline
- CSS Alignment
- Important

MODULE 5: STYLING ELEMENTS

- Links
- Lists
- Dropdowns
- Tables
- Images
- Image-Sprite
- Image-Filters
- Clip-Path
- Forms

MODULE 6: NAVBAR

- Vertical-Navbar
- Horizontal-Navbar

MODULE 7: CSS SELECTORS

- Simple Selectors
- Combinator selectors



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- Pseudo-class selectors
- Pseudo-elements selectors
- Attribute selectors

MODULE 8: CSS POSITIONS

- Position
- Z-Index
- Float
- Clear
- Overflow

MODULE 9: CSS LAYOUTS

- Display
- Block
- Inline
- Inline-Block
- Grid
- Flex-Box

MODULE 10: CSS TRANSFORMATION

- CSS 2D Transforms
- CSS 3D Transforms
- CSS Transition
- CSS Animations

MODULE 11: CSS RESPONSIVE

- Responsive Introduction
- Responsive Viewport
- Responsive Breakpoint
- Media Queries

JAVASCRIPT

MODULE 1: INTRODUCTION

- What is JavaScript?
- Why Use JavaScript?
- Syntax
- Statements

- Comments

MODULE 2: LANGUAGE SYNTAX

- Data Types
- Variable Declarations
- Var vs. Let
- Constant
- Dynamic Type
- Type of
- Type Conversion
- Objects
- Arrays

MODULE 3: OPERATORS

- JavaScript Operators.
- Arithmetic Operators
- Assignment Operators
- Comparison Operators
- Equality Operators
- Ternary Operators
- Logical Operators
- Bitwise Operators

MODULE 4: CONTROL STATEMENT

- if
- else
- if/else
- switch/case

MODULE 5: LOOP STATEMENT

- for
- for/in
- for/off
- while
- do/while
- Infinite loop
- Break
- continue



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MODULE 6: JAVASCRIPT HTML DOM

- HTML Document object Model
- DOM Methods
- DOM Documents
- DOM Elements
- DOM HTML
- DOM Forms
- DOM CSS
- DOM Events
- DOM Event Listener
- DOM Navigation
- DOM Nodes
- DOM Collections
- DOM Node Lists

MODULE 7: JAVASCRIPT HTML BOM

- HTML Browser object Model
- JS Window
- JS Screen
- JS Location
- JS History
- JS Navigator
- JS Popup Alert
- JS Timing
- JS Cookies

MODULE 8: ARRAY

- Array Introduction
- Adding & Deleting Element
- Modifying Element
- Searching Element
- Emptying Element
- Combining and Slicing Array
- Spread Operator
- Looping with Array
- Filtering with Array
- Mapping with Array
- Reducing an Array

MODULE 9: FUNCTIONS

- Function Declarations.
- Hoisting
- Arguments
- The Rest Operators
- Default Parameters
- Getter and Setters
- Try and Catch
- Local vs. Global Scope
- this keyword

MODULE 10: OBJECTS

- Basics
- Factory Functions
- Constructor
- Dynamic Nature of Object
- Functions are Objects
- Value vs. Reference Type
- Enumerating Properties of an Object
- Cloning an Object
- String
- Date

MODULE 11: BUILT-IN OBJECTS

- Number
- Math
- String
- Array
- Date
- Boolean
- Regex

MODULE 12: EVENTS

- Introduction
- Mouse Events
- Keyboard Events
- Form Events
- Document/Window Events



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MODULE 13: INTRODUCTION TO OOP CONCEPT

- Prototype, Module pattern
- Augmenting type
- Closure
- ES6 Introduction
- Let & Const
- Arrow Functions
- Class and Inheritance
- Rest and Map Operators
- Export and Import
- Modules

MODULE 14: JAVASCRIPT WEB API

- API Introduction, Forms API
- History API, Storage API
- Worker API, Fetch API
- Geolocation API

MODULE 15: JAVASCRIPT AJAX

- AJAX Introduction
- AJAX XMLHttpRequest
- AJAX Request
- AJAX Response

MODULE 16: JAVASCRIPT JSON

- JSON Introduction
- JSON Syntax
- JSON Data Types
- JSON Parse
- JSON Stringify
- JSON Objects
- JSON Arrays

JQUERY

- Getting started with jQuery
- Selecting elements

- Manipulating the page
- Traversing the DOM and chaining
- jQuery Utility Methods
- Handling events and event delegation
- AJAX, JSON and Deferred
- Enhancing with Animation effects
- Grids, Tables with AJAX, Pagination, Query UI
- jQuery Best Practices

BOOTSTRAP 5

MODULE 1: INTRODUCTION

- Introduction
- Quick Styles After Dark
- Our First Web Page
- What's inside?
- Scripts & Styles
- Core concepts
- Summary

MODULE 2: LAYOUT WITH BOOTSTRAP

- Introduction
- Grid Layouts, Simple Layout
- Fixed Grids, Fluid Grids
- Responsive Design
- Responsive Utilities
- Inspiration
- Summary

MODULE 3: EVERYDAY BOOTSTRAP

- Introduction
- Typography
- Tables
- Forms
- Buttons
- Images & Icons
- Summary



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MODULE 4: BOOTSTRAP COMPONENT

- Introductions
- Drop Down Menu
- Buttons with Menus
- Tabs & Pill
- The Navbars
- Heros, Badgets, Labels and media
- Summary

MODULE 5: BOOTSTRAP AND JAVASCRIPT

- Introduction
- More Buttons
- Modals
- Tooltips and Popovers
- Carousel
- Summary

GITHUB

- Real-Time environmental setup with GitHub

REACT

MODULE 1: INTRODUCTION OF JAVASCRIPT ES 5 AND Es6

- Basic JavaScript
- Object Based JavaScript
- Introduction to Es6
- JavaScript Helpers (for Each, filter, map, ilter, every, some)
- String Literals
- DE structuring
- Rest parameters & spread operator
- Arrow function
- Default parameter
- Class: Inheritance
- Constructor
- Promise

MODULE 2: INTRODUCTION TO REACTJS

- What React JS?
- Why use React JS?
- What is Single Page Application?
- Why SPA?
- React JS Version
- REACT DOM
- REACT VIRTUAL DOM

MODULE 3: SET UP REACT JS ENVIRONMENT

- What is CLI: create-react-app project name
- Advantage using CLI
- How to debug React JS application.
- Installation CLI
- Install Node JS
- Install React JS, Installation CLI
- Create a hello world example
- Create React JS Project
- Understanding of Folder Structure
- How to debug React JS application
- Introduction of Babel

MODULE 4: BASIC FEATURES OF REACTJS AND COMPONENTS

- React Concepts
- JSX
- Render Elements
- Types of Components, Class Components
- Life Cycle Method of Class components
- Functional Components
- HOOKS in detail
- Create React JS Project
- Understanding of Folder Structure
- How to debug React JS application
- Introduction of Babel



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MODULE 4: BASIC FEATURES OF REACTJS AND COMPONENTS

- React Concepts
- JSX
- Render Elements
- Types of Components
- Class Components
- Life Cycle Method of Class components
- Functional Components
- HOOKS in detail
- Use of HOOK
- What is state
- React Forms
- Components and Props
- State and Lifecycle Handling Events
- Practice on above topics

MODULE 5: ROUTING WITH REACT ROUTER

- Setting Up React router
- Install/ Uninstall React router
- React Router Version 5
- React router Version 6
- Setting up react router
- Understand routing in single page applications
- Working with Browser Router components
- Configuring route with Route component
- Making routes dynamic using Route params
- Working with nested routes
- Navigating to pages using Link and Nav Link Component
- Redirect routes using Redirect Component

MODULE 6: KEY FEATURES OF REACTJS

- Conditional Rendering

- Lists and Keys
- Forms

MODULE 7: EVENT HANDLING IN REACT

- Understanding React event system
- Passing arguments to event handlers

MODULE 8: WORKING WITH FORMS

- Controlled components
- Understand the significance to default Value Prop
- Using react ref prop to get access to DOM element

MODULE 9: INTRODUCTION TO REDUX

- What is React Redux
- Why React Redux
- Redux Install and setup
- Actions
- Reducers
- Store
- High Order Component
- Understanding map State to Props and map Dispatch To Props Usage

MODULE 10: REDUX ADVANCED

- Async Actions
- Middleware
- What is redux saga
- Install and set up redux saga
- Working with Saga helpers (Crud Operation)
- Sagas vs Promises

MODULE 11: REACT WITH DESIGN FRAMEWORK

- Material UI for design
- Formic Validation



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MODULE 12: REACT API'S

- Introduction https Request
- Introduction Axios NPM
- Introduction Slider NPM
- Integration of any NPM modules
- Introduction of Google Map NPM

CORE JAVA

MODULE 1: INTRODUCTION TO JAVA

- Why Java was Developed
- Application Areas of Java
- History of Java
- Platform Independency in Java
- USP of Java: Java Features
- Sun-Oracle Deal
- Different Java Platforms
- Difference between JDK, JRE, JVM
- Java Versions
- JVM Architecture
- Installing Java on Windows
- Understanding Path Variable: Why Set Path

MODULE 2: CREATING FIRST JAVA PROGRAM

- Understanding Text Editors to Write Programs
- How to compile java file
- Byte Code and class file
- How to run class file

MODULE 3: JAVA LANGUAGE FUNDAMENTALS

- Identifiers
- Keywords
- Variables
- Literals

- Data Types
- Operators
- Comments
- Looping Statements
- Condition Statements
- Type Casting

MODULE 4: OOP IMPLEMENTATION (PIE)

- Why OOP
- OOP Concepts with Real life examples
- Class & it's Syntax, Object & it's Syntax
- Reference Variable
- Constructors
- Instance(Non-Static) & Static Variables
- Instance(Non-Static) & Static Methods
- this Keyword and it's usages
- Object & Static Initializers (Anonymous Blocks)
- Understanding '+' Operator
- Inheritance & it's Syntax
- Types of Inheritance
- Object Class as Root of Java Class Hierarchy
- Variable Hiding
- Method Hiding
- Method Overriding
- Method Overloading
- Super keyword and it's usages
- Final keyword and it's usages
- Constructor Chaining
- Upcasting and Down casting
- Static & Dynamic Binding
- Run Time Polymorphism
- Abstract Keyword (Abstract classes and methods)
- Understanding Interfaces
- Implementation of Encapsulation
- Association with Implementation



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MODULE 5: PACKAGES

- Understanding Packages
- Setting Class path
- Reading Input from Keyboard
- Access Modifiers

MODULE 6: NESTED TYPES

- Static Nested Class
- Non-static Nested Class
- Local Class
- Anonymous Class
- Nested Interface

MODULE 7: ARRAYS

- General Definition of Array
- Advantages from Array
- Arrays in Java
- 1-d Arrays
- 2-d Arrays
- Jagged Arrays
- Array of reference type
- Operations on Arrays

MODULE 8: COMMAND LINE ARGUMENTS AND WRAPPER CLASSES

- How to read command line arguments
- Wrapper Classes
- Parsing of Numeric Strings
- String representation of Primitives

MODULE 9: EXCEPTION HANDLING

- Types of Runtime Errors
- Understanding Exceptions
- Exception Class Hierarchy
- Try & Catch Blocks
- Patterns of Catch Block
- Nested Try statements
- Throw, throws and finally

- Creating Custom Exceptions
- Checked & Unchecked Exceptions
- Assertion

MODULE 10: WORKING WITH STRINGS

- What is String
- String Class
- Creating String Object
- Operations on String
- String Buffer Class and it's Methods
- Difference between String and String Buffer class
- String Builder Class and it's Methods
- Difference between String Buffer and StringBuilder

MODULE 11: SWING

- Introduction to AWT
- Introduction to Swing Components
- Look And Feel of Swing Components
- MVC Architecture of Swing Components
- Working with Image
- Advance Swing Components
- JOptionPane, JTree, JTable, JTabbedPane
JFileChooser, JcolorChooser
- Menu Components
- J Menu
- JMenuitem
- JMenuBar

MODULE 12: MULTITHREADED PROGRAMMING

- Multitasking: Why Concurrent Execution
- Multiprocessing v/s Multithreading
- Main Thread (Default Java Thread)
- Creating Child Threads and understanding context switching
- Thread States



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- Thread Group
- Thread Synchronization: Methods and Blocks
- Inter-Thread communication
- Daemon Threads
- Deadlock

MODULE 13: EXTENDED & UTILITY CONCEPTS

- Generics
- Lambda Expression
- Annotations
- Object Cloning
- Vargs
- Static-import
- Enum
- Static, Default and Private Methods of Interface
- Var Type
- Java Modules

MINOR PROJECT IMPLEMENTATION

ADVANCE JAVA

MODULE 1: COLLECTION FRAMEWORK

- Introduction of Collection Framework
- Need of Collection
- Collection API (the classes and interfaces)
- The methods of Collection interface
- List Interface (the Array List, Vector, Linked List, and Stack classes)
- The Iterator, List Iterator, and Enumeration interfaces
- Set Interface (the HashSet, Linked HashSet classes)
- Map Interface (the Hash table, HashMap, Linked Hash Map, classes)
- The Comparable & Comparator interfaces

- The Tree Map and Tree Set classes
- How Collection Framework is used in industry (the real Project Development)
- Writing an application using Collection API and JDBC

MODULE 2: DATABASE CONNECTIVITY (THE JDBC)

- Concepts of JDBC
- Need of JDBC
- Types of JDBC Drivers
- Type1: Jdbc-Odbc bridge Driver
- Type2: Native API Driver
- Type3: Middleware layer
- Type4: Pure Java Driver
- Type3: Middleware layer Driver
- Difference between the JDBC drivers
- Connecting with Databases (MS Access, My SQL, and Oracle)
- Executing query in Database
- Other miscellaneous topics in JDBC

MODULE 3: JAVA EE (JAVA PLATFORM ENTERPRISE EDITION)

- Understanding the Concept of Java EE : JEE Specification
- Java EE Architecture
- Single Tier
- Two Tier
- Three Tier
- N-Tier
- Java EE Components
- Web Components
- Distributed (Business) Components
- Java EE Containers & Servers
- Web Container & Web Server (Apache Tomcat)



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- EJB Container & Application Server (WebLogic, Glassfish, WebSphere)
- Java EE Services
- JNDI Service
- Java Transaction Service
- JMS

MODULE 4: JAVA SERVLET

- Introduction to web programming
- Role of Servlet in web programming
- Servlet Lifecycle
- Servlet with Annotations
- @WebServlet
- @WebInitParam
- @WebListener
- @WebFilter
- @MultipartConfig
- Request Dispatching
- Parameters & Attributes and their differences
- Servlet Config and Servlet Context
- File Uploading and Downloading
- Session Tracking State Management
- Cookie
- URL Rewriting
- Hidden Form Field
- Session Object
- Events & Listeners
- Dependency Injection
- Refreshing Servlet
- Filters

MODULE 5: JAVA SERVER PAGES (JSP) & JSTL

- JSP Architecture
- JSP Elements
- JSP Objects
- Understanding JavaBeans

- Custom Tags
- Using tags of JSTL
- Expression Language

MODULE 6: DESIGN PATTERN

- Why Design Patterns...?
- Front Controller
- Composite View
- Factory Pattern
- Singleton Pattern
- DAO Pattern

JAVA FRAMEWORKS

MODULE 1: JPA (JAVA PERSISTENCE API)

- JPA overview
- ORM
- JPA Entity
- JPA Association Mapping
- JPA Inheritance Mapping
- JPA JPQL
- JPA Criteria API

MODULE 2: OVERVIEW OF HIBERNATE FRAMEWORK

- Hibernate overview
- Hibernate architecture
- Hibernate configuration and mapping file
- Hibernate generator classes
- Hibernate association mapping
- Hibernate inheritance mapping
- HQL, HCQL
- Hibernate caching
- First level cache and Second level cache

MODULE 3: BASIC BEAN WIRING

- Containing your Bean
- Creating Bean



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- Injecting into bean properties
- Auto wiring
- Controlling Bean Creation

MODULE 4: ADVANCED BEAN WIRING

- Declaring parent and Child Bean
- Applying method injection
- Injecting Non-spring Beans
- Registering Custom property editors

MODULE 5: HITTING THE DATABASE

- Learning spring's data Access Philosophy
- Configuring a data source
- Using JDBC with Spring
- Working with JDBC Templates
- Using Spring's DAO Support Classes for JDBC
- Integrate Hibernate with Spring
- Caching

MODULE 6: INTRODUCTION TO MVC

- Define MVC
- Hibernate Injection
- Spring Annotation, Spring Controller

MODULE 7: MAVEN DEPLOYMENT

- Maven Configuration
- Converting Maven to Eclipse
- Various Maven Command

MODULE 8: SPRING

- Spring Overview, Spring Module
- IOC Container
- Dependency Injection
- Spring Beans

- Bean Scops
- Bean Configuration
- Setter Injection, Constructor Injection
- Spring Auto wiring

MODULE 9: SPRING MVC

- Spring MVC Overview
- MVC(Model-View-Controller)
- Dispatcher Servlet
- Configuration Files
- Dispatcher Servlet Architecture
- Creating Controllers, Creating Models
- Creating Views
- Using Thyme leaf Template

MODULE 10: SPRING BOOT

- Spring BOOT Overview
- Spring BOOT Initializer
- Spring BOOT CLI, Spring BOOT Starter
- Spring BOOT Autoconfiguration
- Spring BOOT Application Properties
- Spring BOOT RESTful API
- Spring BOOT MVC, Spring Security
- Spring Data JPA

MODULE 11: BUILDING RESTFUL API USING SPRING BOOT

- Web Services, SOAP Web Services
- RESTful Web Services, JAX-RS
- Jersey Framework, Resource
- HTTP Request & Response Components
- HTTP Web Verbs, HTTP Endpoints
- HATEOAS

DEPLOYMENT OF MAJOR PROJECT