

JAVA FULL STACK DEVELOPMENT

Course Duration: 4 Months

Course Brochure

FRONT-END

- Introduction
- Different types of Applications
- Application Architecture

HTML

- Introduction to HTML
- Basic Structure of HTML
- HTML Editors
- HTML Tags
- Paragraphs, Headings and Text
- Formatting Tags
- HTML Lists
- HTML Images
- HTML Tables
- HTML Forms
- HTML Media

SAAS

- Introduction to Saas
- Installation
- Variables
- Nesting
- @import,@mixin,@extend
- Saas Functions
 1. String
 2. Numeric
 3. List
 4. Map
 5. Selector
 6. Color

CSS

- Introduction to CSS
- Types of CSS
- CSS Properties, Selectors and Values
- Applying CSS to HTML
- CSS colors
- CSS Box Model, Margins, Padding, Borders
- CSS Text & Font Formats
- CSS Advanced Topics (Effects, Animations, Shadows, Etc.,)

JAVASCRIPT

- Introduction to JavaScript
- How to Apply JavaScript
- Displaying Output in JavaScript
- Understanding JavaScript Syntax
- Variables & Data types Operators
- Math and String Manipulations
- Conditional and looping Statements
- Functions
- Validations
- Events

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FRONT-END

JQUERY

- Introduction to jQuery
- jQuery Features
- Installing jQuery
- jQuery Syntax
- jQuery Ready Function
- jQuery Selectors
- jQuery Actions
- jQuery Custom Functionality
- jQuery Libraries
- jQuery Validation
- jQuery Slideshow
- jQuery Dropdown
- jQuery UI
- jQuery Accordions
- jQuery Tabs
- jQuery Tooltips
- jQuery Autocomplete

TYPESCRIPT

- Typescript Introduction
- Typescript Simple and Special Types
- TypeScript Arrays
- TypeScript Tuples
- TypeScript Object Types
- TypeScript Functions

BOOTSTRAP

- Introduction to Bootstrap
- Bootstrap Setup
- Bootstrap Containers
- Bootstrap Grids
- Bootstrap Tables
- Bootstrap Buttons, Navbars, Alerts
- Bootstrap Carousel
- Bootstrap Forms

ANGULAR

- Introduction to Angular
- Environment Setup
- Installing Angular CLI
- Directory Structure of Angular
- Angular Fundamentals
- Angular Building Blocks
- Angular Data Binding
- String Interpolation
- Directives and Pipes
- Forms
- Routing

WEB HOSTING

- Introduction to Hosting
- Git and Github
- Creating and Merging Repositories
- Push and Pull Requests

BACK-END

INTRODUCTION

- Java Language & Java Platform
- Java Technologies
- History of Java
- Execution Model Of Java
- First Java Program
- The JDK Directory Structure
- IDE
- Similarities between C & Java
- Differences between C & Java

STANDARD EDITION OF JAVA

- JDK
- PATH
- CLASSPATH

DATA TYPES

- What are data types?
- Int
- Float
- Char
- Double
- Boolean
- Short
- Long
- Byte

METHODS

- What are Methods?
- Method Structure
- Declaration Of Methods
- Calling Of Methods
- Defining Methods
- Method Parameters Scope
- Why static methods?

CONTROL FLOW STATEMENT

- What are Control Flow Statements?
- If - Statement
- Else if Statement
- Conditional (Switch) Statements

OPERATORS

- Arithmetic Operators
- Relational Operators
- Logical Operators
- Conditional Operators

LOOPS

- For Loop
- While Loop
- Do While Loop
- Break Statement

OBJECT ORIENTED PROGRAMMING(OOPS)

- Class & Object
- Encapsulation
- Attributes (Properties)
- Operations (Methods)Reference Vs Object
- Real-time Object Oriented Examples

CONSTRUCTOR

- No Argument Constructor
- Parameterized Constructor
- Constructor Overloading
- Explicit Vs Implicit Default Constructor

WRAPPER CLASSES ACCESSIBILITY MODE

- Private?
- Protected
- Default
- Public

INTER OBJECT COMMUNICATION

- Message
- Message Passing
- Message Sender
- Message Receiver

ARRAYS

- What is an array?
- Declaring an array
- Initializing an array
- One Dimensional array
- Two Dimensional arrays
- Multi Dimensional arrays

STATIC MODIFIER

- Static Variables
- Static Methods
- Static Blocks
- Static Classes

INHERITANCE

- Inheritance in Java
- Use of Inheritance
- Single Inheritance
- Multi-level Inheritance
- Hierarchical Inheritance
- Hybrid Inheritance
- Method Overloading
- Method Overriding
- Super Class-Sub Class
- Abstract Classes
- Abstract Methods

POLYMORPHISM

- Static Polymorphism
- Dynamic Polymorphism
- Static Vs Dynamic Binding

INTERFACE

- Interfaces Vs Abstract Class
- Role of Interfaces in Real time
- Interfaces Inheriting from other Interfaces
- Declarative Multiple Inheritance using Interfaces

PACKAGES

- What is a Package?
- Advantages of Packages
- Types Of Packages
- Naming Convention
- Steps For Creating Packages
- The import Statement
- Static Imports
- CLASSPATH and Import
- Defining Packages
- Scope of Packages

STRING HANDLING

- String
- String Buffer
- String Handler

EXCEPTION HANDLING

- Types of errors
- Need of Exception Handling
- Try, Catch, throws, Finally
- Try with resources
- Exception Hierarchy
- User Defined Exceptions

IOSTREAMS

- Byte-Oriented Streams
- Character Oriented Streams
- Java.io.File Class
- Object Serialization



MULTITHREADING

- Multi-tasking Vs Multi threading
- Life Cycle of Thread
- Java.lang.thread Vs Java.lang.runnable
- Developing Multithreaded Applications
- Synchronization
- Dead-Lock
- Inter-thread communication

JDBC

- Introduction To JDBC
- JDBC Architecture
- Types Of JDBC Drivers
- Creating a Database & Table
- Getting Information from Database
- Obtaining Result Set Information
- Connecting a Java Program to DB
- Prepared Statement & Statement classes in java
- Inserting, Updating & Deleting data

Java Servlets

- what is a web application
- Java servlets
- Servlet lifecycle
- Servlet Context
- Session Management
- Building the first servlet
- Deploying the servlet

SPRING BOOT

- Rest Api & Web Service Creation
- Integration with JDBC Template
- Integration with Hibernate

JSP

- What is a JSP page
- Basic HTML tags
- JSP Tag Library
- JSP Page Lifecycle
- Creating first dynamic web page

MVC ARCHITECTURE

- Introduction to MVC
- MVC Architecture
- Advantages of MVC
- Three-tier architecture

HIBERNATE FRAMEWORK

- Technologies for Persistency
- Introduction to ORM
- Hibernate Architecture
- Hibernate API
- Configuration Properties
- Inheritance in Hibernate
- Component Mapping
- Collection Mapping
- One-to-many, Many-to-many Relations
- HQL (Aggregate Function ,clauses ,Criteria)

DATA-BASE

DATABASE

- Database Handling With Mysql
- Java Mysql Database Access
- Create Database Connection
- DML And DDL Operations With Databases
- Performing Transactions
- Handling Database Errors
- Disconnecting Database
- Database Handling With Mongodb
- Sql Vs Nosql
- Establishing A Connection
- Accessing Database
- DML And DDL Operations

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Software Development Entrepreneur Course

1: Foundations of HTML : Building Blocks for Web Development

- HTML Introduction
- Basic HTML Structure
- HTML Editors Overview
- Understanding HTML Tags
- Text Elements : Paragraphs, Headings, and Text
- Formatting Text in HTML
- Creating Lists in HTML
- Adding Images to HTML
- Working with HTML Tables
- Implementing HTML Forms
- Incorporating Media in HTML

2: CSS Essentials: From Basics to Responsive Design

- Introduction to CSS and Linking Methods
- Understanding CSS Properties: Key-Value Pairs and Network Tab
- Utilizing Comments, Colors, Backgrounds, and Images
- Text Properties: Font Size, Weight, and Style
- Exploring the BoxModel: Padding, Margin, Border, and Main Content with Inspect Tab
- Introduction to CSS Positioning
- Manipulating Height, Width, and Selectors
- Implementing Float (Left, Right), Z-Index, and Opacity
- Responsive Design Principles and Media Queries
- Flexbox : A Responsive Design Approach
- Grid Systems for Responsive Design

Projects Covered

- **Project 1 : YouTube Gallery (Modified iframe Version):**

Description : Create a custom – styled YouTube gallery using iframes, showcasing videos with personalized design and layout.

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- **Project 2 : Sign-in Form Styling:**
Description : Enhance the visual appeal and usability of assign – inform through CSS, focusing on improving aesthetics and user experience.
- **Project 3: Image Gallery Enhancement:**
Description : Transform a basic image gallery into an aesthetically pleasing and user-friendly interface by applying advanced CSS techniques.

3 : Project Management

Software Development Life Cycle

- Aligning project management with software development lifecycle

Agile Methodologies:

- Understanding Agile principles and values
- Scrum and other Agile frameworks
- Sprint planning and execution

Waterfall Methodology:

- Overview of the Waterfall model
- Pros and cons of Waterfall vs. Agile

Version Control Systems:

- Introduction to Git and GitHub
- Collaborative coding with version control
- Branching and merging strategies

Task Management Tools:

- Overview of popular task management tools(e.g. ,Jira, Trello)
- Creating and managing tasks
- Assigning and tracking progress

4 : Bootstrap Essentials

- Framework Fundamentals : Bootstrap Introduction
- Building Bootstrap Templates Offline
- Responsive Design Basics : Containers, Rows, Columns
- Creating Navigational Elements : Navbar, Colors, Accordions, Alerts, Badges
- Utilizing Placeholders, Popovers, Progress Bars, Spinners

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- Practical Application : Project Implementation with Bootstrap

Projects:

- **Project1** : Develop Your Company Portfolio Website
- **Project2** : Build a Mock Flipcart E-commerce Platform

5 : Figma – DesignTool

- Introduction to Figma
- Using Figma to create, share & test designs.
- Converting images to HTML templates

6 : JavaScript Essentials : Core Concepts and Practical Applications

- Introduction to JavaScript
- Integrating JavaScript into HTML
- Fundamentals of Variables
- Data Types and Operations
- Conditional Statements in JavaScript
- Understanding JavaScript Objects
- Manipulating States and the Document Object Model(DOM)
- Functions and Event Handling
- Exploring JavaScript Arrays
- Synchronous and Asynchronous Programming Concepts
- Commenting in JavaScript Code
- Basics of Loops
- Mastering the Document Object Model(DOM)
- Advanced Concepts : Promises, Async/Await, Fetch, Axios
- Utilizing Spread and Rest Operators
- Deconstructing Arrays and Objects
- Module Management in JavaScript

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7 : TypeScript Topics

- Introduction to TypeScript
- Simple and Special Types in TypeScript
- Understanding TypeScript Generics
- Exploring TypeScript Interfaces
- Working with Object Types in TypeScript
- Mastering TypeScript Classes

Projects Covered:

- Project 1: Dynamic Calculator : Create an interactive calculator with basic and advanced arithmetic operations.
- Project 2 : Stopwatch Application : Build a stopwatch with start, stop, and reset functionality.
- Project 3 : Digital Clock Implementation : Develop a digital clock displaying hours, minutes, and seconds.
- Project 4 : Guessing Game Project : Design a game where users guess a randomly generated number within a range.
- Project 5 : Geo location Tracker : Develop an app to track and display the user's current location on a map.

8 : ReactJS Essentials : Key Concepts and Applications

- Introduction to ReactJS
- Exploring the State of JavaScript Survey
- Building React Web Apps
- Grasping ReactJS Fundamentals
- Utilizing Fragments, Hooks, and React Router DOM
- Learning MUI and Its Setup
- Integrating MUI Tabs
- Managing Props in React
- Creating UI Components for Social Media Sharing

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Projects Covered:

- Project 1 : Enhancing your company Portfolio website.
- Project 2: Enhance Fake Flip-Cart ecommerce website

9 : Web Hosting and GitHub Collaboration

- Understanding Web Hosting
- Introduction to GitHub
- Repository Management : Creation and Merging
- Collaborative Workflows : Pushing and Pulling Requests
- Utilizing Github-pages for React Projects

10 : Mastering Git and GitHub Essentials

- Introduction to Git
- Repository Workflow Basics
- Branch Management
- Leveraging GitHub for Version Control
- Essential Git Commands
- Understanding Staging in Git

11 : MongoDB DataBase Essentials

- Database Fundamentals Overview
- MongoDB Installation
- Configuring MongoDB
- CRUD Operations : Create, Read, Update, Delete
- Schema Creation
- Installing MongoDB Compass

12 : MYSQL DataBase Essentials

- MySQL DB Fundamentals

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- MySQL vs. MongoDB : A Comparative Analysis
- Setting Up MySQLDB : Installation
- Database Configuration
- Database Creation in MySQL
- Table Creation in MySQL
- CRUD Operations in MySQL : Create, Read, Update, Delete

13 : Node JS Topics

- Node.js Basics : Getting Started
- Installation and Configuration of Node.js
- Working with Modules in Node.js
- Creating Custom Modules in Node.js
- Exploring Built-in Modules in Node.js
- Integrating Third-Party Modules in Node.js Projects
- Utilizing NPM (Node Package Manager) Effectively
- Managing Dependencies : Creating Package.json
- Node_modules : Understanding the Core Structure

14 : Express JS Topics

- Introduction & Installation of ExpressJS
- MVC & Serverless Architecture concepts
- Configure CORS
- Understanding HTTP Methods
- Decoding HTTP Status Codes
- Schema Handling
- Working with Models & Controllers
- Creating CURD APIs
- Utilizing EJS for Views
- Working with Staticfiles
- Hosting with Cyclic

15 : Google Firebase Console

- Introduction to Google Firebase
- Configuring Firebase for push notifications
- Creating & Setting projects
- Creating tokens
- Sending push notification

16 : Email Authentication

- Introduction to OATH Authentication Tool
- Installing OATH Package
- Authentication with Email & Google

17 : SMS & Whatsapp Configuration:

- Setting up with Twilio
- Sending SMS using Twilio
- Sending Whatsapp Message.

18 Implementing Payment Gateway

- Understanding payment gateway systems
- Setting up with RazorPay