



JAVA FULL STACK DEVELOPMENT

"Shape the future of technology, powering innovations with Full stack development"

SYLLABUS

Version: 1.0

About Us

- ✦ Apponix Academy is a leading training institute offering both online and offline courses in trending technologies like Cloud Computing, DevOps, Cyber Security, Full Stack Development, Data Science, Digital Marketing, and more.
- ✦ Established in 2013, Apponix has trained over 50,000 students across India and abroad, helping them build successful careers in the tech industry.
- ✦ With centers in Bangalore, Pune, Mumbai, Hubli, Aurangabad, Tumkur, Trichy, Gwalior, Ranchi, and more, Apponix continues to expand rapidly across the country.
- ✦ All our courses are designed to be job-oriented, practical, and aligned with real-world industry requirements.
- ✦ Our training is delivered by 100+ highly experienced corporate trainers who are experts in their respective fields.
- ✦ We offer flexible learning options, allowing students to choose between classroom sessions and live online classes.
- ✦ Apponix is ISO certified and provides globally recognized certifications from AWS, Microsoft, and Google.
- ✦ Over 3,000+ Apponix alumni are successfully placed in top MNCs with salaries above ₹15 LPA.
- ✦ Our focus is on 100% hands-on learning, project-based assignments, and real-time case studies.
- ✦ We provide complete career support including resume building, interview preparation, and placement assistance.
- ✦ With a strong presence and proven track record, Apponix Academy continues to be a trusted name in professional IT training.



COURSE KEY FEATUERS



Guaranteed interviews



Designated Placement Advisor



Assured Job Placement



Interview Grooming Sessions



Classroom & Online Training



Mock interview sessions



Delivered by Industry Experts



Weekly Practice Assignments



Professional Resume building



Industry Relevant Syllabus



Awards & Accreditations



IABAC Authorized Partner



JAINx University Partner



ISO Certified



VMWARE Authorized Partner



**Most Promising
Training Institute**



MSME Certified

Sample Certificate



FULL STACK DEVELOPMENT SYLLABUS

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 Box Model: 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.
- **Project 2:** Sign-in Form Styling
 - Description: Enhance the visual appeal and usability of a sign-in form 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 life cycle

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
- Practical Application: Project Implementation with Bootstrap

Projects:

- *Project 1:* Develop Your Company Portfolio Website
- *Project 2:* Build a Mock Flipcart E-commerce Platform

5. Figma – Design Tool

- 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

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 & advanced arithmetic operations.
- Project 2: Stopwatch Application: Build a stopwatch with start, stop & reset functionality.
- Project 3: Digital Clock Implementation: Develop a digital clock displaying hours, minutes & seconds.

- Project 4: Guessing Game Project: Design a game where users guess a randomly generated number within a range
- Project 5: Geolocation Tracker: Develop an app to track & 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

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 Gh-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
- MySQL vs. MongoDB: A Comparative Analysis
- Setting Up MySQL DB: 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 CRUD APIs
- Utilizing EJS for Views
- Working with Static Files
- 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

JAVA AND SPRING BOOT

1. 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

2. Standard Edition of Java

- JDK
- PATH
- CLASSPATH

3. Data Types

- What are Data Types?
- Int
- Float
- Char
- Double
- Boolean
- Short
- Long
- Byte

4. Methods

- What are Methods?
- Method Structure
- Declaration of Methods
- Calling of Methods
- Defining Methods
- Method Parameters Scope
- Why Static Methods?

5. Control Flow Statement

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

6. Operators

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

7. Loops

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

8. Object Oriented Programming (OOPs)

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

9. Constructor

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

10. Wrapper Classes Accessibility Mode

- Private
- Protected
- Default
- Public

11. Inter-Object Communication

- Message
- Message Passing
- Message Sender
- Message Receiver

12. Arrays

- What is an Array?
- Declaring an Array
- Initializing an Array
- One Dimensional Array
- Two Dimensional Arrays
- Multi-Dimensional Arrays

13. Static Modifier

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

14. 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

15. Polymorphism

- Static Polymorphism
- Dynamic Polymorphism
- Static vs Dynamic Binding

16. Interface

- Interfaces vs Abstract Class
- Role of Interfaces in Real-Time
- Interfaces Inheriting from Other Interfaces
- Declarative Multiple Inheritance using Interfaces

17. 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

18. String Handling

- String
- StringBuffer
- String Handler

19. Exception Handling

- Types of Errors
- Need of Exception Handling
- Try, Catch, Throws, Finally
- Try with Resources
- Exception Hierarchy
- User Defined Exceptions

20. IOStreams

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

21. Multi Threading

- Multi-tasking vs Multi-threading
- Life Cycle of Thread
- Java.lang.Thread vs Java.lang.Runnable
- Developing Multithreaded Applications
- Synchronization
- Deadlock
- Inter-thread Communication

22. 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

23. Java Servlets

- What is a Web Application
- Java Servlets
- Servlet Lifecycle
- Servlet Context
- Session Management
- Building the First Servlet
- Deploying the Servlet

24. Spring Boot

- REST API & Web Service Creation
- Integration with JDBC Template
- Integration with Hibernate

25. JSP

- What is a JSP Page
- Basic HTML Tags
- JSP Tag Library
- JSP Page Lifecycle
- Creating First Dynamic Web Page

26. MVC Architecture

- Introduction to MVC
- MVC Architecture
- Advantages of MVC
- Three-Tier Architecture

27. 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)

OUR RECENT PLACEMENTS



Ms. Apoorva Sanikop
CAPGEMINI
FULL STACK DEVELOPER



MR. SATISH
TATA CONSULTANCY SERVICES
SOFTWARE ENGINEER



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NEXENSATEL LLP
FULL STACK DEVELOPER



MS. AMRUTHA H V
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MS. AKSHYA U
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osbIndia

wipro

Capgemini

Head Office - Bangalore

306, 10th Main, 46th Cross, 4th Block
Rajajinagar, Bangalore - 560010



info@apponix.com



8050580888

Branches:

Hubli, Pune, Gwalior, Tumkur,
Trichy, Ranchi