



Full stack Masters Curriculum

Owner	M Manikanta Kona
Tags	
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World #1 Real-Time Full stack Masters Program With Cloud & DevOps

Fundamentals of IT

Foundations of Web (HTML, CSS, Bootstrap, JS, TS)

React Framework

Java Full Stack (React & Java)

MERN Stack (React & Node)

Python Full Stack (React & Python)

DevOps & Cloud

Why Full Stack Masters Program ?

REACT Developer - Minimum 6L - Average 15 L - Maximum 30 L

Frontend Developer - Minimum 4L - Average 12 L - Maximum 25 L

Backend Developer - Minimum 6L - Average 15 L - Maximum 35 L

Java Developer - Minimum 5L - Average 15 L - Maximum 30 L

Python Developer - Minimum 5L - Average 15 L - Maximum 30 L

Software Developer - Minimum 4L - Average 12 L - Maximum 25 L

Demand

70%

Managers said
hiring Fullstack engineers
was top priority

Course Link

<https://www.digital-lync.com/full-stack-masters-training-in-hyderabad.html>

Fundamentals of IT

1. Software Development Life Cycle & Application LifeCycle Management

- SDLC Methodologies
- Waterfall Methodology
- Agile Methodology
- Scrum Framework
- What is DevOps?
- What is Cloud, SAAS, IAAS, PAAS?
- What is Testing?

2. Web Technologies & Applications

- Web Application Architecture
- Web Technologies
- Web Technologies used in Projects

3. Introduction to Agile

- The Manifesto for Agile Software Development
- The Principles behind the Agile Manifesto
- Agile Approaches
- Agile Frameworks

Foundations of Web - HTML, CSS, BootStrap, JS & TS

HTML

- Introduction to HTML
- Document Structure
- Basic Tags
- Attributes
- Favicons
- HTML Comments
- **Forms** - Input Types
- Form Attributes
- Form Validation
- Labels and Accessibility in Forms
- Lists
- Tables
- Regular Expressions
- Advanced Tags - Multimedia, Semantic elements. Embedding External Content (iframe)

CSS

- Introduction to CSS

- External, Internal, and Inline Styles
- Properties and Values
- Selectors
- Specificity and Cascade
- Inheritance and Initial/Default Values
- Typography in CSS
- Box Model
- Units of measurements in CSS.
- Margin Collapsing
- Border
- Outline
- Background Properties
- Box-shadow and Text-shadow
- Positioning
- Display Property
- Floating Elements (float, clear)
- Visibility (visible, hidden, collapse)
- Overflow
- Z-index and Stacking Context
- Layouts - Flexbox & Grid
- Animations - Transitions, Transforms & Animations
- **Responsive Design** - Media Queries

JavaScript

- Introduction to JavaScript
- Variables

- Hoisting
- Data Types
- Operators
- Functions, Parameters
- Return Statements
- Function Expressions
- Default Parameters
- Control Structures
- Conditional Statements
- Loops
- Arrays - Arrays, Objects, and their Methods
- String & Date Methods
- Template Literals
- JavaScript Functions and Scope
- IIFE (Immediately Invoked Function Expressions)
- Anonymous Functions
- Higher-Order Functions, Callback Functions
- Closures
- Document Object Model - DOM
- DOM Tree, Nodes, Manipulation
- Event Listeners & Event Delegation
- DOM Manipulation using createElement, appendChild
- Error Handling (try...catch)
- AJAX and Fetch
- Callbacks, Promises & Async/Await
- OOP in JavaScript

- Objects and Classes
- Properties and Methods
- Constructor Functions
- Getters and Setters
- Prototypes
- Inheritance
- Execution Context and Scope Chain
- Modules and Import/Export
- RegEx and Forms
- Local Storage & Session Storage

Bootstrap

- Introduction to Bootstrap
- Setting Up Bootstrap
- Using Bootstrap CDN
- Basic Grid System
- Containers
- Rows and columns
- Responsive classes
- Typography and Utilities
- Default typography
- Text alignment and display classes
- Spacing utilities
- Navigation
- Bootstrap Components
- Navbar Dropdowns within navbar

- Button - Button styles & Button groups
- Basic card - Card headers and footers
- Image overlays in cards
- Form controls, Form groups and layout
- Basic modal setup
- Carousel with indicators and controls
- Flex container and items
- Direction, order, and alignment in flex
- Visibility classes

Tailwind CSS

Topics:

1. Introduction to Tailwind CSS

- What is Tailwind CSS?
- Benefits of using Tailwind CSS
- Comparing Tailwind CSS with other CSS frameworks

2. Setting Up Tailwind CSS

- Installing Tailwind CSS via npm
- Setting up Tailwind CSS in a new project
- Configuring Tailwind CSS (`tailwind.config.js`)

3. Utility-First Fundamentals

- Basic utility classes (spacing, typography, colors)

4. Responsive Design

- Introduction to responsive design in Tailwind
- Using responsive utility classes
- Breakpoints and custom configurations

5. Deep Dive into Utilities

- Flexbox and Grid utilities
- Sizing (width, height, min/max)
- Borders, background, and shadows

6. State Variants

- Hover, focus, and active states
- Pseudo-classes and customizing states

7. Typography

- Typographic utilities
- Customizing font sizes, weights, and line heights
- Handling responsive typography

8. Building Reusable Components

- Creating consistent design patterns with components
- Using utility classes to build buttons, forms, and navigation

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9. Forms and Inputs

- Styling forms with Tailwind CSS
- Customizing input fields, checkboxes, and radio buttons
- Handling form validation states

10. Animations and Transitions

- Adding animations and transitions with utility classes
- Customizing animations with keyframes
- Creating smooth transitions for interactive elements

11. Handling Complex Layouts

- Creating complex grid layouts
- Building responsive navigation bars
- Advanced flexbox techniques

TypeScript

- Introduction to TypeScript
- TypeScript Compiler
- Variables
- Data Types
- Object oriented programming
- Classes
- Inheritance
- polymorphism
- Abstraction
- Interfaces
- Abstract classes
- Enums
- Type Inference
- Type Compatibility
- Advanced Types
- Iterators and Generators
- Namespaces
- Modules

React JS

ES6 Concepts - Foundations For React

- Arrow Functions
- Let and Const
- Template Literals
- Destructuring
- Default Parameters
- Spread and Rest Operators
- Object Literal Enhancements
- Modules
- Promises and Async/Await
- Array Methods (map, filter, reduce)
- Promises and Fetch API

Introduction to React Functional Components

- What are functional components?
- Benefits of functional components over class components
- Setting up a React development environment
- JSX syntax and its advantages
- Creating and rendering functional components
- Embedding expressions in JSX

Conditional Rendering and Lists

- Conditional rendering with ternary operators and short-circuiting
- Rendering lists using map() and keys
- Using the key prop for list items

Props and Prop Types

- Passing data to functional components using props
- Defining Prop Types for type checking

State Management with React Hooks

- useState, useEffect
- Using useEffect for side effects
- Advanced Hooks - useContext, useReducer, useCallback, useMemo, useRef
- Custom Hooks

Handling Events in Functional Components

- State updates with event handlers
- Using the spread operator for state updates

Styling Functional Components

- Inline styles with JSX
- CSS Modules for local styles
- CSS-in-JS libraries (e.g., Tailwind CSS)

Fetching Data from APIs

- Using the useEffect hook
- Using the Axios library for HTTP requests
- Displaying fetched data in functional components

Routing with React Router

- Setting up routing with React Router 6
- Creating route components using functional components
- Navigating between routes with Link and useHistory

Forms and Form Handling

- Building controlled forms with functional components
- Handling form submissions and user input
- Validating form data and displaying errors

Introduction to Redux for State Management

- Using Redux Toolkit

React Children

- Code splitting and lazy loading with React Suspense

Testing Functional Components

- Writing unit tests using testing libraries

Next JS

Introduction to Next.js

- What is Next.js and why use it?
- Key features and benefits of Next.js

Setting Up a Next.js Project

- Creating a new Next.js project
- Project structure and files

Pages and Routing in Next.js

- File-based routing system
- Dynamic routing
- Nested routes

Data Fetching in Next.js

- Client-side data fetching

Styling in Next.js

- Using CSS in Next.js
- CSS Modules in Next.js
- Styled JSX
- Integrating Tailwind CSS with Next.js

Image Optimization

- Using the Image component for optimized images
- Configuring image loader

Static File Serving

- Serving static files from the public directory

Performance Optimization

- Automatic static optimization
- Code splitting and lazy loading

Java Full Stack (React & Java)

1 : Introduction to Java

- Introduction to Java
- Java History
- Key Features
- Java vs Other Languages

2 : Java Environment Setup

- Environment Setup
- Java Installation
- IDE Setup
- Writing Your First Java Program
- Java Virtual Machine (JVM)
- Java Runtime Environment (JRE)
- Java Development Kit (JDK)

3 : Building Blocks Of Java

- Java Language Fundamentals
- Variables
- Data Types
- Operators
- Control Statements & Loops

- If-Else, Switch, for, while, do-while

4 : Object-Oriented Programming in Java

- Fundamentals of OOPS
- Classes
- Objects
- Methods
- Inheritance Types
- Inheritance(IS-A)
- Aggregation(HAS-A)
- Method Overriding
- Super Keyword
- Polymorphism
- Static Polymorphism
- Dynamic Polymorphism
- Method Overloading

5 : Abstraction & Encapsulation in Java

- Abstraction
- Abstract Classes
- Interfaces
- Abstract vs Interfaces
- Encapsulation
- Private Classes
- Getter/Setters
- Access Modifiers
- Public, Private, Protected & Default

- Non-Access Modifiers
- Static, Final, Abstract & Synchronized
- Static Blocks and Instance Blocks
- Packages in Java

6 : Data Structures in Java

- Arrays
- Multidimensional Arrays
- Array Operations - Sorting & Searching
- Strings Operations and Methods
- StringBuilder Operations and Methods
- Regular Expressions
- Pattern Matching and Common Operations

7 : Exception Handling & Multithreading

- Exception Handling
- try-catch, finally, throw & throws
- Custom Exception Classes
- Multithreading
- Creating Threads & Thread Lifecycle
- Synchronisation
- Inter-thread Communication

8 : Java IO Input/Output

- Byte and Character Streams
- File Handling
- Reading Files
- Writing Files

- Serialisation and Deserialization

9 : Java Collections and Stream API

- Java Collections Framework
- List, Set, Map Interfaces and Their Implementations
- Generics
- Annotations
- Java New Features
- **Using Stream API for Collections**

10 : Java Enterprise & Web Development Basics

- JDBC - Servlets - JSP
- Basics of SQL
- Introduction to JDBC
- Connecting to MYSQL Database
- JDBC Drivers
- JDBC API
- JDBC Objects
- CRUD Operations with MYSQL Database
- Java Build Tools
- Introduction to Maven
- Build Projects Using Maven
- Maven Lifecycle Phases
- Introduction to web application
- Introduction to web server
- Introduction to servlets
- Servlet Life cycle

- Servlet Request & Servlet response
- Generic & Http servlet
- Servlet Config & context
- Session Management
- Introduction to JSP
- Implicit Objects

11 : Hibernate and ORM

- Introduction to ORM
- Introduction to Hibernate
- Mapping & CRUD operations
- HQL
- Criteria API
- Caching Mechanisms in Hibernate
- First Level Cache
- Second Level cache
- Hibernate Mappings

12 : Spring MVC

- Introduction to Spring Framework
- IoC Containers
- DI in Spring
- Autowiring
- Stereotype Annotation
- Introduction to Spring MVC
- Environment Setup
- First Application using Spring MV

- Handler Mapping
- Controller
- View Resolver
- Form Handling
- Spring's Form Tag Library
- Integrating Spring MVC with other framework

13 : Spring Boot Microservices

- Spring Boot Introduction
- Spring Boot Dependencies
- Auto Configuration & runtime
- Building a REST API
- CRUD Operation using Restful Web Services
- CRUD Operation using Spring Boot
- Integration of CRUD Operations using Spring Boot, Hibernate and MYSQL Database
- Sending Email using Spring Boot
- Spring Cloud Services: Config Server, Discovery Server

14 : Microservices in Java - AWS Cloud

- Introduction to MicroServices Architecture
- Microservices Patterns and Best Practices
- AWS Lambdas
- Environment set up on AWS Lambdas
- Implementation of Spring Boot Restul Services in Lambdas
- CRUD App using Spring Boot and AWS Lambda

15 : Software Development Practices - DevOps

- Version Control System
- Git & GitHub
- Static Analysis Tools - SonarQube
- Artifact Repository Management - Nexus
- CI/CD: Pipelines
- Jenkins
- Containerisation
- Docker
- Dockerize Java Application
- Kubernetes Introduction
- Deploy Java Application on Kubernetes Cluster

MERN Stack (React & Node)

1. Express JS

- Basics of ExpressJS
- Getting started with Express
- Features of Express
- Installation of express
- First Application using Express JS
- Understanding Express JS Request
- Request object
- Request object properties
- Request object methods
- Real time example
- Understanding Express JS Response

- Response object
- Response object properties
- Response object methods
- Understanding Get and Post operations
- Intro to Get Request
- Developing code to handle Get Request
- Intro to Post Request
- Developing code to handle Post Request
- Routing in Express
- Intro to Routing
- Route methods
- Route Paths
- Route Params
- Route Handlers
- Response methods
- Template Engines
- Introduction to Template Engines
- Different Template Engine
- Intro to Pug
- Using pug with express
- Working with EJS
- Working with handlebars
- Advanced Express JS
- Error Handling
- File Uploading Real Time Modules
- Nodemailer

- Multipart

2. Mongo DB

- Creating First Database
- Creating Document and Saving it to Collection
- Dropping a Database
- Creating a Collection Using `db.createCollection(name,options)`
- Dropping a Collection
- CRUD Operations
- Creating/Inserting a document in collection using javascript file
- Inserting Array of Documents
- Reading a Document - Querying
- Reading a Document with `$lt`, `$gt` operator
- Updating Documents
- Deleting documents
- Indexes and ObjectIds
- Introduction to Indexes
- Understanding Impact of Indexes
- Creating Index
- Finding Indexes
- Understanding ObjectIds
- Creating ObjectIds
- Advantages of ObjectIds created by MongoDB
- Disadvantages of ObjectIds created by MongoDB
- Aggregation and Data Modelling in MongoDB
- Using `aggregate()` method

- Using distinct() and count()
- Sorting documents
- Introduction to Data Modelling in MongoDB
- Data Modeling using References
- Data Modeling using Embedded documents
- Relationships in MongoDB
- One-To-One Relationship
- One-To-Many Relationship
- Many-To-Many Relationship

3. Mongo DB With Nodejs

- Using MongoClient
- Using Mongoose
- Creating database using MongoClient and Mongoose
- CRUD operations on MongoDB with Nodejs
- Insert
- pdate
- Delete
- Retrieve

Python Full Stack (React & Python)

1. Basic Python

- Motivation & Applicability to various domains ,Installation & Setting up path
Input / Output
- Keywords and Identifiers, Variables and Data Types
- Conditional Statements

- Looping, Control flow (along with loops)
- Strings and Features
- String Manipulation, Functions

2. Python Collections And Sequences

- Lists and Features
- List Functions
- List Comprehension
- Tuple and Features
- Functions and Methods
- Dictionaries
- Sets and Frozen sets

3. Working with Python Collection

- Working with Lists and Tuples
- Working with Dictionaries
- Working with Sets and Frozen Sets

4. Python Functional Programming

- Types of functions
- Function Arguments
- Anonymous functions
- Special functions (map , reduce , filter)

5. Python File Handling

- Files
- File operations Part - 1

- File operations Part - 2
- Handling excel , csv files

6. Python Modules And Packages

- Modules
- Importing module
- Packages
- Math , Random and OS module

7. Class in Python

- Classes
- Objects
- Constructors and Destructors
- Types of Methods

8. OOPS in Python

- Inheritance
- Polymorphism
- Magic methods
- Operator Overloading
- Data hiding (Abstraction)
- Encapsulation

9. Database Programming with python

- Introduction of MySQL
- Connections and Queries
- PISQL / MySQL

- Multithreading
- Regular expressions

10. GITHUB Version Control

- Creating a Repository
- Files State
- Commit and undo Commit
- File Removing
- File Merging
- Git Remove, PULL, PUSH, CLONE

11. Exception Handling in Python

- Exception Handling
- Try & finally clause
- User-Defined Exceptions

12. Advanced Python

- TKinter GUI programming
- Web Scraping (BS4)

13. Python for Data Science

- Numpy
- Pandas
- Matplotlib
- Seaborn
- Jupyter Notebook

14. Python with Django

Django Web Framework

- Features of Django
- Installing Django
- MVC model
- Views
- URL Mapping

15. Python with Flask

Flask Web Framework

- Working with venv
- installing Flask
- Creating a Flask app
- HTTP GET and POST Request Methods in Flask
- Flask Folder Hierarchy

Cloud & DevOps

1. Cloud Computing

- Introduction To Cloud Computing
- Creating Free AWS Account
- Understanding Infrastructure in AWS
- Understanding Regions and Availability Zones
- Installing Required software's in Desktop
- Git Bash
- Putty & Puttygen
- Terminal

- SSH / SCP
- Creating Servers Using EC2
- Setting Firewalls - Security Groups
- Setting up access to AWS cloud Using SSH Keys

2. Jenkins CI - CD

- Introduction to Continuous Integration & Delivery
- Overview of Jenkins
- Jenkins Setup
- Plugins and its uses
- Setting up your Build Jobs
- Jenkins security
- Automated Builds using webhooks
- Code Quality Integration
- Integrating Nexus
- Distributed Builds / Master-Slave Configuration
- Performing Continuous Delivery
- Implementing Pipelines

3. Docker - Containerisation

- Introduction to Containerisation
- Monolithic Architecture
- Microservices Architecture
- Introduction to Virtualisation
- Virtualisation vs Containerisation
- Docker Architecture

- Setting up Docker
- Docker Registry
- Docker Images Vs Docker Containers
- Running Docker Containers
- Docker Volumes
- Docker Networks
- Docker Logs
- Docker Tags
- Dockerize Applications

4. Kubernetes

- Introduction to High Availability
- Introduction to Container Orchestration
- Container Orchestration Tools
- Overview of Kubernetes
- Kubernetes Architecture
- Components of Kubernetes
- Overview of Minikube
- Setup Minikube
- Kubernetes Objects
- Pods
- Replica Sets
- Deployments
- Services
- ClusterIP
- NodePort

- Load Balancer
- Config Maps
- Secrets
- Ingress
- Overview of Production Clusters
- Overview of AWS EKS
- Setup EKS
- Deploy Applications On EKS