



TECHNOLOGY FOR ALL

SYLLABUS FOR THE COURSE OF

FULLSTACK DEVELOPMENT (MERN Stack)

WITH 1 MONTH EXTENSIVE
HANDS ON INTERNSHIP



ABOUT THIS COURSE

This course will serve as a comprehensive introduction to various topics in Software Development. This course is a proper blend of theory and the practical hands on session for each and every concept. Throughout the course participants will work on a complete end to end tech stack in order to implement the concepts learned during the course.

PROGRAM HIGHLIGHTS

- 120+ Hours of Live Lectures
- 60+ Hours of Live Handson Sessions
- 100+ Hours of Assignment and Projects
- 3+ Mini Projects
- 2+ Major Projects
- 1 Capstone Project

TECHNOLOGY STACK & TOOLS USED



LEARNING OUTCOMES

At the end of the course participants should be able to -

- Build an extensive backend API with Java SpringBoot.
- Protecting routes/endpoints with JWT (JSON WebTokens)
- Extensive API testing with Postman.
- Integrating React with our backend in an elegant way, creating a great workflow.
- Building our frontend using React to work with backend API's
- Creating the build scripts and securing the keys before deployment
- Get hands on experience on Git, GitHub, GitHub Pages & Heroku

PREREQUISITES

There are no prerequisites required for the course. But a little knowledge of programming and HTML, CSS and JavaScript is a benefit for the candidate.

SCHEDULE

TOPICS	NO.OF HRS
HTML, CSS and Introduction to Object Oriented JavaScript – ES6, Classes, JS tips and tricks	30
Introduction to React Library – CDN, script and npm packages, Components, functional and class based	40
NodeJS + Express - Designing backend,handling routes, handling errors and integrating No-SQL MongoDB for storing data	40
Databases – Creating a DB using MongoDB & learning various CRUD operations and filters.	15

```
...Types.Operator):  
    ...mirror to the selected object""  
    ...mirror_mirror_x"  
    ...x"
```

```
...context):  
    ...active_object is not None
```


FRONT END DEVELOPMENT & VERSION CONTROL

1. INTRODUCTION

- a. Download and install Visual Studio Code (VS Code)
- b. Overview of Full Stack Development Program

2. HTML

- a. Inline elements
- b. Block elements
- c. Element Attributes
- d. HTML Forms and Form Elements
- e. Type of Inputs
- f. Buttons
- g. Anchor tags
- h. Images
- i. Video
- j. Meta tags
- k. Miscellaneous Tags (code, blink, table, span, etc.)

3. CSS

- a. Cascading
- b. CSS Selectors
- c. CSS Attributes
- d. Cascading Algorithms
- e. Padding
- f. Margin
- g. Floating
- h. Inline and inline-block
- i. Border
- j. Box Model
- k. Bootstrap

4. JAVASCRIPT

- a. JS Programming Fundamentals (ES6)
- b. DOM Access and DOM Manipulations
- c. DOM Events
- d. JavaScript Classes & OOPs
- e. JavaScript Functions & JavaScript Arrow Functions
- f. Higher Order Array Methods - forEach, map, filter and reduce
- g. JavaScript await, Callbacks & Promises
- h. JavaScript tips and tricks

5. AJAX

- a. Introduction to Client-Server Architecture
- b. Response Notations - XML & JSON
- c. Introduction to APIs
- d. Testing APIs with Postman
- e. Introduction to asynchronous communication
- f. Inserting APIs with Front End

6. REACT

- a. Creating React App
- b. Folder Structure
- c. Understanding React Components
- d. Adding components
- e. Listening to events
- f. Understanding JSX
- g. Creating functional components
- h. Working with props & states
- i. State Management using Redux
- j. Getting user inputs
- k. Handling Events
- l. Adding forms
- m. Routing in React
- n. Third Party APIs

7. VERSION CONTROL

- a. Introduction to Version Control
- b. Introduction to Git and GitHub
- c. Why Git
- d. Centralized and Distributed Version Control System
- e. Installing Git
- f. Git Basics
- g. Forking
- h. Cloning
- i. Making changes to Local Repositories
- j. Committing
- k. Branching
- l. Collaborating with Multiple Developers

8. PROJECT ON FRONT END DEVELOPMENT

BACK END DEVELOPMENT, DATABASE AND DEPLOYMENT

1. INTRODUCTION TO BACK-END DEVELOPMENT

- a. Introduction to Client-Server Architecture
- b. Understanding the need and complications
- c. Understanding the use and need for RESTful APIs

2. NODEJS

- a. Introduction to NodeJS, a JavaScript runtime environment
- b. Installing NodeJS
- c. Terminal / Command Prompt Basics
- d. The in-built basics modules of NodeJS

3. EXPRESS - (I)

- a. Introduction to Express, a NodeJS Framework
- b. Creating servers using Express
- c. Express & NodeJS as a JavaScript compiler
- d. Understanding the requests, responses and request headers
- e. Creating routes using Express (GET, POST, PUT, DELETE)
- f. Installing Nodemon package (the NodeJS package)
- g. Responding to request with JSON application type
- h. Installing the BodyParser package (the NodeJS package)

4. MONGODB

- a. Introducing to MongoDB as a database
- b. Difference between SQL and NoSQL databases
- c. Installing MongoDB into local system using MongoDB Atlas
- d. Creating MongoDB clusters on MongoDB servers
- e. Creating database in MongoDB
- f. Understanding documents in MongoDB
- g. Inserting documents into database
- h. Searching documents using queries
- i. Deleting documents from the database
- j. Updating documents on the basis of certain constraints

5. EXPRESS - (II)

- a. Exploring challenges in the existing setup
- b. Installing Mongoose package (the MongoDB package)
- c. Connecting database to the back-end application
- d. Using mongoose for storing data in the database
- e. Using mongoose for retrieving data from the database
- f. Using mongoose for updating the database
- g. Using mongoose for deleting data from the database

6. COMBINING THE FRONT-END & BACKEND

- a. Understanding the utility of a Full-Stack application
- b. Integrating the NodeJS + Express application to a SPA
- c. Exploring various integration methods -
Fetch, AJAX & Axios
- d. Understanding the complications and debugging

7. DEPLOYMENT

- a. Deploying the NodeJS + Express back-end to Heroku
- b. Integrating the exposed back-end to the SPA
- c. Integrating the SPA to GitHub Pages a
full-stack application

READY TO ADVANCE YOUR CAREER ?

REGISTER NOW

Speak to a program advisor
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