

Mean Course Syllabus

Angular and Typescript

Typescript

- Problems using JavaScript / ECMA Script
- Typescript Module System
- Installing Typescript using NPM
- Language Fundamentals and Features (for each, spread operators etc.)
- OOPS concepts in Typescript
- Strong vs Weak Type checking
- Creating Classes & Objects
- Const, Let vs Var
- Inheritance using Classes and Interfaces
- Optional Parameters
- Generics
- Arrow Functions and Callbacks
- Maps and Sets
- Debugging & Executing Typescript files
- Using 3rd-party libraries using NPM and Typescript

Angular 9

- Angular features and elements
- Single Page Apps vs Conventional Web Applications
- Angular CLI (ng cli) and setup
- Angular Components
 - Understanding the 'app' component and rendering process
 - Creating a user-defined component and nested components
- Angular Bindings
 - Style Binding
 - Property Binding
 - One way Data Binding- Interpolation
 - Event Binding
 - Two way Data Binding- [(ngModel)]
- Angular Forms
 - Understanding how Form is handled in Angular
 - The 'ngSubmit' event
 - Using pristine, dirty, touched, untouched, valid and invalid properties
 - Type of Validators in Angular
- Angular Template Driven Forms
 - Using template variables- ngForm & ngMode
 - Error Handling, Error Messages and Validation
- Angular Reactive Forms
 - Using FormGroup and FormControl
 - FormBuilder and FormBuilder Array
- Services and Dependency Injection
 - Understanding Service Concept
 - Injecting Dependencies using Providers
 - Creating and Nesting Services in multiple components

- Pipes
 - Built-in pipes
 - Custom pipes
 - Chaining pipes
 - Stateful & Stateless pipes
- Directives
 - Built-in Directives- ngIf,ngFor,else,ngSwitch etc
 - Structural Directives
 - Attribute Directives
 - Custom Directives
- Routing
 - Using RouterModule and Routes
 - Href vs RouterLink
 - Parent vs Child Routes
 - Lazy Loaded Routes
 - Routing Parameters
 - Routing Life Cycle Hooks
 - Safeguarding Routes
- RXJS: Promises and Observables
 - Promises and usage
 - Observables and Subscriptions
 - Using 'RxJS' methods and operators
 - Consuming Rest API Endpoints
 - Consuming Web Sockets (using node.js)
- Inter-Component Communication
 - Passing Data from Parent to Child using @Input
 - Passing Data from Child to Parent using @Output and EventEmitter
 - Passing Data from many unrelated components using Services
 - Passing Data as an Observable using BehaviourSubjects and subscribers
- Testing Angular Applications
 - TDD vs BDD
 - Using Karma and Jasmine Frameworks
 - Using 'ng test'
 - Using built-in spec.ts files
 - Writing custom test cases
- Deploying Angular Applications
 - Uglification
 - Minification
 - Ahead Of Time Compilation
 - Tree Shaking
 - Using different production environments for staging- environment.ts file

Bootstrap 4

- Bootstrap File Structure
- Using Bootstrap using NPM and CDN
- Grid System
- Typography
- Components: Buttons, Links, Lists, Card, Images,Icons
- Carousel, Modals, Collapse, Nav, Tab, Pills

- Animations using keyframes
- Responsive Web Design
 - Using @media-queries
 - Showing/Restricting content on specific breakpoints
 - Overflow Content on specific breakpoints
 - Responsive margins, padding, sizes and styles

Introduction to Angular Material, Materialize.css, Semantic-UI frameworks

Node.js

- Introduction to the Node.js Framework
- Installing Node.js and using Typescript
- Overview of Blocking vs Non-Blocking IO
- Event Handling Loop in Node.js
- Using Node.js to execute scripts
- The Node Package Manager - npm
- The package.json configuration file
- Using & compiling Typescript for Node.js
- Working with the HTTP protocol
- Building an HTTP Server
- Accepting a request
- Rendering a response
- Using Representational State Transfer Protocol (REST)
- Understanding concept of Web-Services
- Introduction to REST Full W/S

Express.js

- Introduction to the Express.js Framework
- Installing the Express package
- Routing
- HTTP Methods (Get, Put, Post, Delete)
- URL Building
- Body-Parser to read data from incoming requests
- Cookies
- Sessions
- Authentication
- Using CORS
- RESTful APIs
- Using Middleware
- Express & DB Integration
- Using Typescript with Express

MongoDB

- Introduction to the NO-SQL Databases

- Data Modeling
- Create & Drop Database
- Create & Drop Collection
- Data Types
- Insert Document
- Query Document
- Update Document
- Delete Document
- Projection
- Limiting Records
- Sorting Records
- MongoDB - Indexing
- Object Id
- Aggregation and Map-Reduce