

MEAN Stack Developer Training Syllabus

Goals:

Training aims to bridge the gap between college education and requirements for a career in information technology by enhancing the skill levels (Technical & Behavioral)

Pre - Requisites:

- Basic understanding of Web and Internet development
- Basic knowledge of web programming languages like HTML, CSS & JavaScript.
- Basic knowledge of object-oriented programming languages like Java.

Trainers:

#	Trainer	Technology	Email
1	David Dong	Angular, React, Vue, Flutter, NestJs, TypeORM, NodeJs	yue.dong@antra.com
2	JR Zhang	Angular, NestJS, Database, Agile, DVCS, Interviews	yusheng.zhang@antra.com
3	Xiaomeng Niu	Angular, HTML,CSS,JS,Agile,Git	xiaomeng.niu@antra.com
4	Luke Zhong	HTML, CSS, JavaScript, Angular, Agile, Git	yu.zhong@antra.com

Day	Column 1	Topic	Content	Time Duration
1	Monday	Orientation	<ul style="list-style-type: none">• Introduction• Setting Up Environment	120min
2	Tuesday	HTML	<ul style="list-style-type: none">• Introduction to HTTP and HTTPs• HttpRequest and HttpResponse• Chrome Dev Tools• Intro to HTML• Document Structure• HTML tags• HTML tag attributes• How browser render the HTML• HTML5 new features• Semantic HTML• Accessibility	240min
3	Wednesday	CSS	<ul style="list-style-type: none">• Introduction to CSS• CSS Rules and Syntax• CSS Selectors• CSS Inclusion (Embedded, Inline, External and imported)• CSS Overriding rules• Measurement Units in CSS• CSS Links and Pseudo Classes and Elements• Box Model, Margin and Padding• Overflow, Visibility, Positioning, Layers• Layout / Flexbox / CSS grid• Media Types	240min
4	Thursday	JavaScript Basics	<ul style="list-style-type: none">• Introduction to JavaScript• Advantage and Disadvantage	240min

			<ul style="list-style-type: none"> • Syntax and Rules and Placement in File • Data Types, Variables and Scope • Operators, Control Statements • Strings and Arrays • Functions and Closures • Objects and Error Handling 	
5	Friday	JavaScript Advance	<ul style="list-style-type: none"> • Event Loop • ES5 vs ES6 • Closure • Static Members, Properties, Prototypes • Inheritance and Overriding • Polymorphism, Abstract Classes • Strict Mode and Self-Hoisting 	240min
6	Monday	JavaScript DOM/BOM	<ul style="list-style-type: none"> • DOM Elements • DOM Methods • DOM Event • Window • Navigator • Cookie/Local Storage/ Session Storage 	240min
7	Tuesday	JavaScript	<ul style="list-style-type: none"> • Blocking vs non-blocking • Call back function • XMLHttpRequest • Promise • Fetch • Data communication 	240min
8	Wednesday	JavaScript Programming	<ul style="list-style-type: none"> • JavaScript Design pattern • Debugging • Selectors, Method Chaining • Introduction to JSON • Object to JSON and Vice Versa 	240min
9	Thursday	Review Session		240min
10	Friday	Evaluation Coding Test	<ul style="list-style-type: none"> • Finish coding test based on the first 2 weeks lectures 	240min
11	Monday	Agile Methodology	<ul style="list-style-type: none"> • Teaming Up • Agile Teams Pattern • Agile Meetings • Software Development Cycle • JIRA ticket management 	240min
12	Tuesday	Version Control System	<ul style="list-style-type: none"> • DVCS vs CVCS • GIT workflow • GIT commands • Pull Request 	240min

			<ul style="list-style-type: none"> • How to take Code Review 	
13	Wednesday	Intro into System Design Typescript basics	<ul style="list-style-type: none"> • System Design Pattern • Project Example • Project UI Design / Figma • Project System Design(beginner) • Typescript vs. JavaScript 	240min
14	Thursday	Intro into Angular	<ul style="list-style-type: none"> • Angular Project Initialization • Angular CLI • Angular Config Files • Dependencies • Global Styles/ SASS • Best Practice of Creating an Angular Project • Angular Components • Angular Modules 	240min
15	Friday	Routing Basic Coding Exercise/ Lab	<ul style="list-style-type: none"> • Routing Basics • Team Collaboration • UI Libraries 	240min
16	Monday	Databinding in Angular	<ul style="list-style-type: none"> • Project Feedback • Best Practice • Data binding • Two Way Binding 	240min
17	Tuesday	Angular Directives & Pipes	<ul style="list-style-type: none"> • Structural Directive • Attribute Directive • Custom Directive • @HostBinding & @HostListener • Built-in pipes • Custom pipes • Async Pipes 	240min
18	Wednesday	Angular Models & Data Communication	<ul style="list-style-type: none"> • Models • Interface / Abstract Class/ Class / Enum / Type • Parent - Child Communication • Child - Parent Communication 	240min
19	Thursday	Angular Services	<ul style="list-style-type: none"> • Dependency Injection Pattern • Providers • Data Communication using Services • HTTP Request • Observables 	240min
20	Friday	Angular Component Life Cycle Hooks Coding Exercise/ Lab	<ul style="list-style-type: none"> • Constructors • Initialization hooks • Update Hooks 	240min

21	Monday	Angular Forms	<ul style="list-style-type: none"> • Project Feedback • Best Practice • Template Driven vs. Reactive Forms • FormControl/FormGroup/FormArray 	240min
22	Tuesday	Angular Forms(continue) Forms Validators	<ul style="list-style-type: none"> • FormBuilder • Nested Forms • Built-in Validators • Sync Validators • Async Validators • Live Coding: Custom Validators 	240min
23	Wednesday	Rxjs	<ul style="list-style-type: none"> • Observable Vs Subject • BehaviorSubject & ReplaySubject • Different kind of Operators • Error Handling 	240min
24	Thursday	Angular Router Advanced Router Guards	<ul style="list-style-type: none"> • Navigation Events • Pass parameters using routes • Router Guards • Resolver 	240min
25	Friday	Advanced Components Coding Exercise/ Lab	<ul style="list-style-type: none"> • Review of Angular Features • Lazy Loading vs. Pre-Loading vs. Pre-fetch • Template Reference • ng-container & ng-template & ng-content • @ViewChild • Team Collaboration 	240min
26	Monday	Intro into Backend Technology	<ul style="list-style-type: none"> • Project Feedback • Best Practice • Intro into Backend 	240min
27	Tuesday	NestJs Controllers	<ul style="list-style-type: none"> • NestJs Structure • NestJs Config Files • Best Practice to create backend project • Controllers • Create Api • Using Api testing tools 	240min
28	Wednesday	Data Communication between Client, Server and Database	<ul style="list-style-type: none"> • DTO • Validators • Whitelist • Transformer • Intro into Database • Database Structure • Learn how to register for a MongoDB • database in Cloud 	240min

29	Thursday	Connect Backend and Database	<ul style="list-style-type: none"> • Setup the connection with MongoDB • Add Document in Database • Learn how to use Mongoose • Model Apis • Update database from server 	240min
30	Friday	Coding Exercise/ Lab	<ul style="list-style-type: none"> • Team Collaboration: Create your own • Api for the Team Project 	240min
31	Monday	JSON Web Token	<ul style="list-style-type: none"> • Project Feedback • Best Practice • Using of JWT for Authentication 	240min
32	Tuesday	JWT and Web Security	<ul style="list-style-type: none"> • Implementation of JWT • HTTP Header • Introduce Passport, Refresh Token • Introduce HTTP Interceptor 	240min
33	Wednesday	Angular NGRX Global State Management	<ul style="list-style-type: none"> • Redux Pattern • NGRX Pattern • Implementation of NGRX 	240min
34	Thursday	Unit testing	<ul style="list-style-type: none"> • BDD Vs. TDD • Jasmine & Karma • How to write test cases 	240min
35	Friday	Training Finish/ Marketing Induction		240min

**There will be a lab session on every Friday for reviewing techniques you learned during the week*

**The duration of training will last 7 to 8 weeks according to the training process.*