



Angular

Tahaluf Training Center 2022





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Objective



The Objective of this lecture

- Find out what Angular is in all versions.
- Distinguish between the concept of a single-page application and a multi-page application.
- Download the Angular package and create your first project with Angular.
- Understanding the component and how to create it using the terminal.



What is Angular?



Overview of Angular

Angular is a development platform for building Single Page Applications.

It uses Typescript & HTML to build Apps.

The Angular itself is written using Typescript.

It now comes with every feature you need to build a complex web or mobile application.



Overview of Angular

It comes with features like Component, Directives, Forms, Pipes, HTTP Services, Dependency Injection, etc.

Angular website:
<https://angular.io/>



Advantages of Angular



1. Comprehensive:

The angular framework is a full-featured framework that provides out-of-the-box solutions for server communication, routing, and more.

2. Browser Compatibility:

Angular is cross-platform and compatible with multiple browsers.

3. Testing:

Testing is a first-class tool, and Angular was built to be testable from the beginning.



4. Custom Components:

Angular allows users to build their own components that can pack functionality along with rendering logic into reusable pieces.

5. Data Binding:

Angular allows users to effortlessly move data from JavaScript/TypeScript code to the view and react to user events without having to write any code manually.

6. Dependency Injection:

Allows users to write modular services and inject them wherever they are needed.



Angular Versions



The early version of Angular was named AngularJS.
Then later it was renamed just Angular.

Angular Versions:

- AngularJS 1. X
- Angular 2
- Angular 3
- Angular 4
- Angular 5
- Angular 6
- Angular 7



Angular Versions:

- Angular 8
- Angular 9
- Angular 10
- Angular 11
- Angular 12
- Angular 13

Angular is constantly growing with better features and faster performance.



Single-Page Application



Single-Page
Application

VS.

Multi-Page
Application



Multi-Page Applications

Multi-Page Applications (MPA) were traditionally used, where every time you clicked on a link, a new page was loaded from the server. Additionally, it was time-consuming and increased server load, which slowed the website.

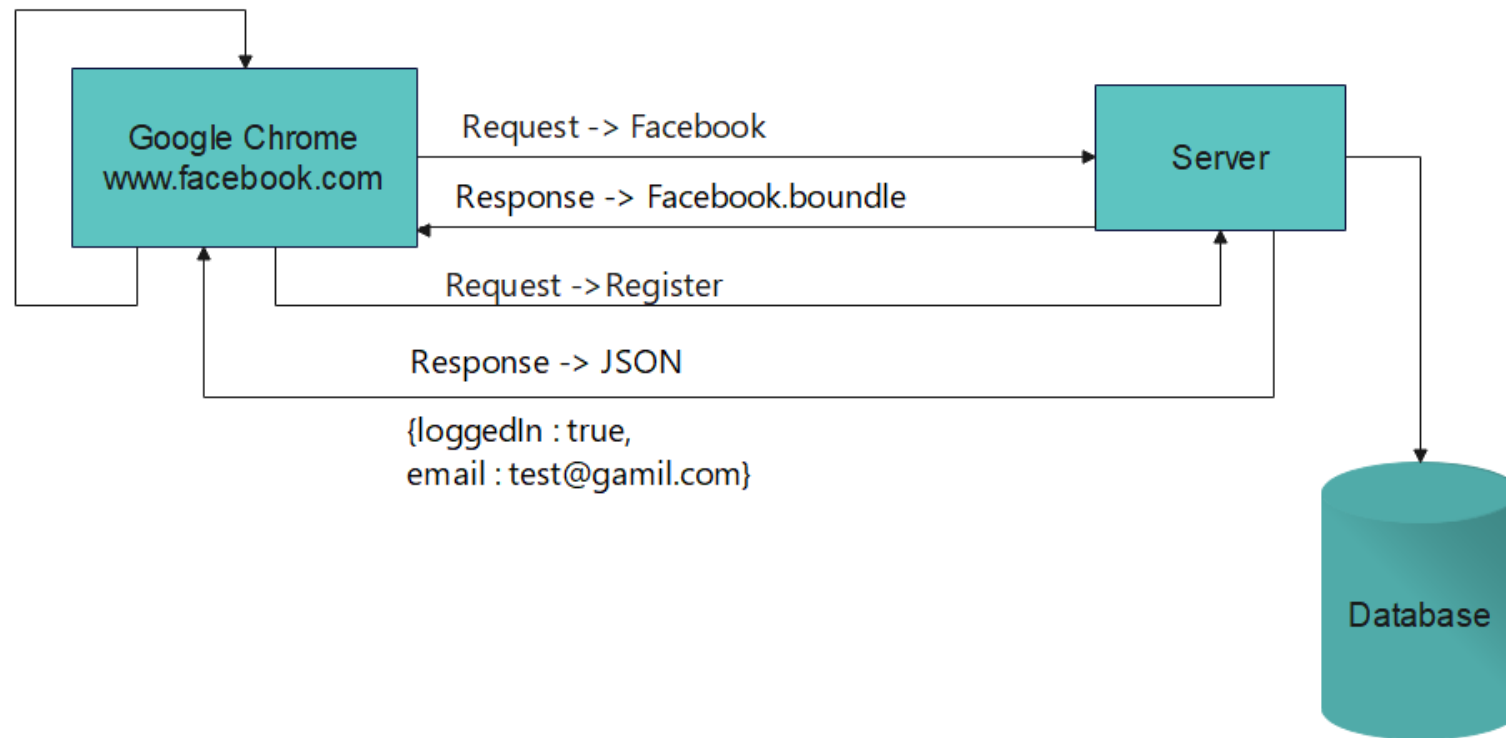


Single Page Applications

The concept of a **single page application** refers to a web application that loads a single HTML page and only a part of the page gets updated on each mouse click rather than the entire page. There is no reloading of the page or transfer of control to another page during the process. The result is high performance and faster loading pages.



Single Page Application





Single Page Applications Example



Facebook



Gmail



Google Maps



Twitter



Google Drive



Git Hub



PayPal



Create Angular Project



Create Angular Project

First, install the angular package (@angular/cli):

npm i -g @angular/cli

Read more about the angular package:

<https://www.npmjs.com/package/@angular/cli>



Create Angular Project

To create the angular project, use this command:

ng new project_name

```
PS C:\Users\d.kanaan.ext\Desktop> ng new EduTech  
? Would you like to add Angular routing? (y/N) y
```



Create Angular Project

We will create an LMS website (EduTech) during this course, to create the angular project for our demo, use this command:

ng new EduTech

```
PS C:\Users\d.kanaan.ext\Desktop> ng new EduTech  
? Would you like to add Angular routing? (y/N) y
```



Create Angular Project

To run the project, use this command:

ng serve -o

```
PS C:\Users\d.kanaan.ext\Desktop\EduTech> ng serve -o
```




Note :

By default, angular project run on port **4200**.

```
PS C:\Users\d.kanaan.ext\Desktop\EduTech> ng serve -o
✓ Browser application bundle generation complete.

Initial Chunk Files | Names          | Raw Size
vendor.js           | vendor         | 1.97 MB
polyfills.js        | polyfills      | 294.84 kB
styles.css, styles.js | styles        | 173.22 kB
main.js             | main           | 50.11 kB
runtime.js          | runtime        | 6.51 kB

| Initial Total | 2.49 MB

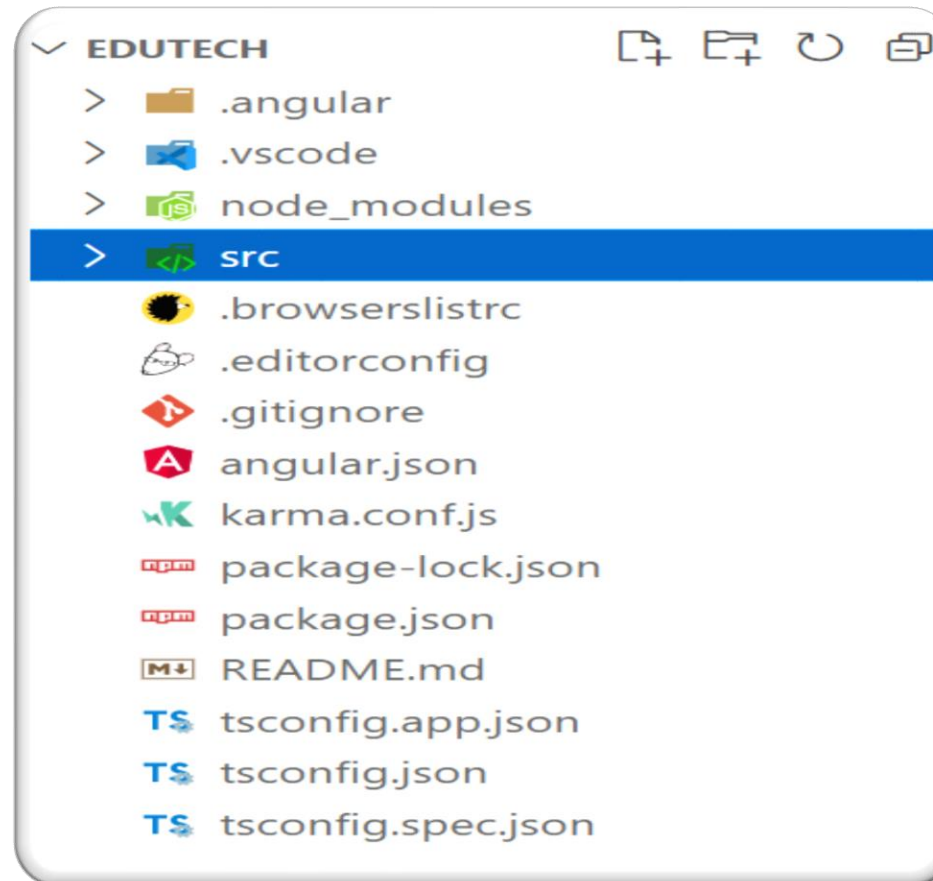
Build at: 2022-05-11T08:33:36.907Z - Hash: 0918d3d2f5e3f490 - Time: 7643ms

** Angular Live Development Server is listening on localhost:4200, open your browser on ht
tp://localhost:4200/ **

✓ Compiled successfully.
```



EduTech project files:





Angular project files

node_modules: You can think of the node_modules folder as a cache for the external modules that your project depends upon. NPM installs these modules with the NPM service, which downloads them from the web and copies them into the node_modules folder.

src: The project will be worked on in this folder.

Inside the src, the app folder was created during the project setup and holds all the required files for the project.



Angular project files

assets: It contains the resources such as images, videos, audio, and bootstrap files.

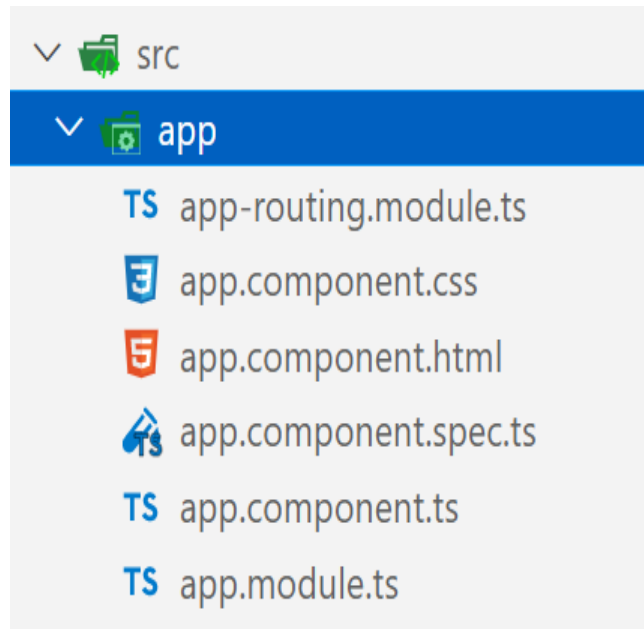
index.html: It is the first file that will be loaded in the angular project.

styles.css: It contains the CSS style that you would apply to the whole project.



Angular project files

By default, angular project contains one component called **app component**.

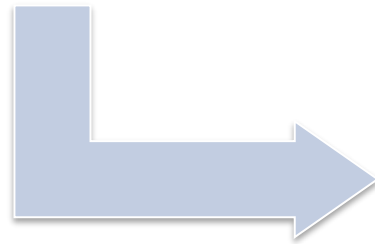




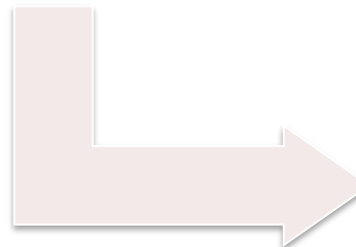
Flow of Execution of Angular App.



main.ts



app.module.ts



**app.component.ts
+
app.component.html**



Component in Angular



Overview of Angular Component

Components are the basic building blocks of an Angular application.

The Component defines the View and its data, which determine how the View appears and behaves.

Components in Angular are JavaScript/TypeScript classes that are defined using `@component` Decorators.

Using the Decorator, the component can display a View & get metadata about the class.



Overview of Angular Component

Data Binding is the process used by the component to pass data to the view.

The DOM elements are bound to the component properties through DOM Binding.

Component class bindings are used to display the value of component class properties, change element styles, and respond to user events.

A decorative graphic consisting of a green rounded rectangle with a red outline, a red circle to the right, and two black circles below. The text "Generate a new component" is centered in white.

Generate a new
component



How to generate a new component

To add a new component, use this command:

```
ng generate component component_name
```

or

```
ng g c component_name
```



By default this generates four files:

- componentName.component.css
- componentName.component.html
- componentName.component.spec.ts
- componentName.component.ts

The spec files are unit tests for your source files.

To skip the spec file:

`ng g c --skip-tests=true component_name`



Example of generating a new component

```
PS C:\Users\d.kanaan.ext\Desktop\AngularProject> ng g c navbar  
CREATE src/app/navbar/navbar.component.html (21 bytes)  
CREATE src/app/navbar/navbar.component.spec.ts (626 bytes)  
CREATE src/app/navbar/navbar.component.ts (275 bytes)  
CREATE src/app/navbar/navbar.component.css (0 bytes)  
UPDATE src/app/app.module.ts (1511 bytes)  
PS C:\Users\d.kanaan.ext\Desktop\AngularProject> |
```



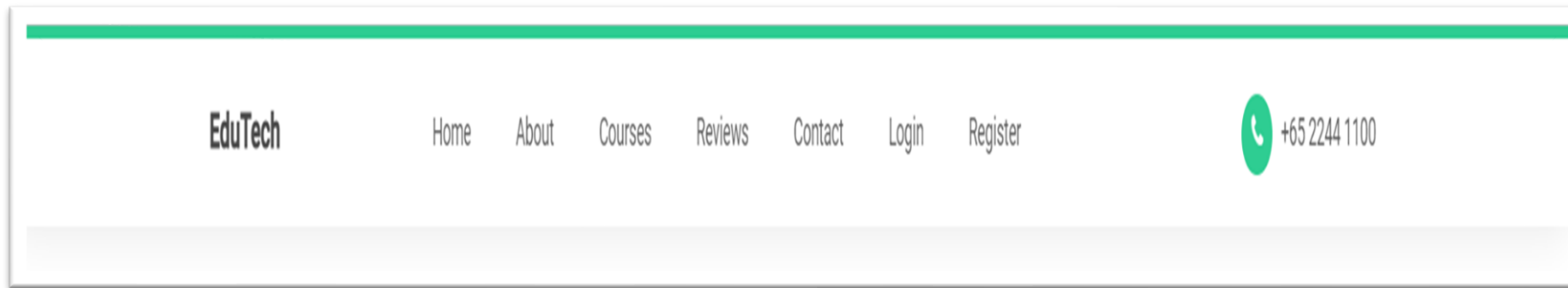
Example of generating a new component

Use this link to add the navbar from our template:

<https://designhooks.com/freebies/free-education-website-html-template-2/>



The Output :





Exercises

Generate a new component called a footer and write the copyright statement with the current year ex. Copyright @2022 EdTech and do the style for it.





Exercise Solution :

```
PS C:\Users\d.kanaan.ext\Desktop\AngularProject> ng g c footer  
CREATE src/app/footer/footer.component.html (21 bytes)  
CREATE src/app/footer/footer.component.spec.ts (626 bytes)  
CREATE src/app/footer/footer.component.ts (275 bytes)  
CREATE src/app/footer/footer.component.css (0 bytes)  
UPDATE src/app/app.module.ts (1593 bytes)  
PS C:\Users\d.kanaan.ext\Desktop\AngularProject> █
```





Exercise Solution :

Use this link to add the footer from our template:

<https://designhooks.com/freebies/free-education-website-html-template-2/>





Exercise Solution :

In TypeScript file:

```
export class FooterComponent implements OnInit {  
    currentYear: Date | any = undefined;  
  
    constructor()  
    {  
        //2022  
        this.currentYear = new Date().getFullYear();  
    }  
}
```





The Output:

Headquarter

1800 dapibus a tortor pretium,
Integer nisl dui, ABC 12000



Copyright © 2022 EduTech

Design: TemplateMo

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Any
Question?

