Angular 2.0 for JEE

Lesson 02 : Angular Fundamentals

Capgemini

Lesson Objectives

- Introduction of Angular2
- What is node JS?
- Building blocks of Angular2
- What is module-Root Module?
- First Application with Angular2

What is Angular 2?

- Angular2 is a framework for building client applications in HTML and either JavaScript or a language like TypeScript that compiles to JavaScript.
- Angular is a TypeScript-based open-source front-end web application platform led by the Angular Team at Google and by a community of individuals and corporations.
- Angular 2 required to build a frontend web or mobile apps, from powerful templates to fast rendering, data management, HTTP services, form handling, and so much more.

Why Angular 2?

- Simple
- Web Components Oriented architecture
- Better Foundation
- Mobile first
- Speed & Performance
- Productivity
- Component based programming
- Syntax are similar to JAVA

What is node Js?

- Node.js is an open source server framework
- Node.js uses JavaScript on the server
- Node.js can generate dynamic page content
- Node.js can create, open, read, write, delete, and close files on the server
- Node.js can collect form data
- Node.js can add, delete, modify data in your database
- It’s a highly scalable system that uses asynchronous, non-blocking I/O model (input/output), rather than threads or separate processes
- It is not a framework like jQuery nor a programming language like C# or JAVA . It's a new kind of web server like has a lot in common with other popular web servers, like Microsoft’s Internet Information Services (IIS) or Apache

What is node JS?

- Node.js is useful for project structuring, module management, dependency installation etc and you need to to do manually all this stuffs.
- NPM - Node Package Manager is mainly used to install all the libraries of any framework or all the dependencies configured in json file of the project and it doesn’t work without node JS.

Installing and using Angular 2

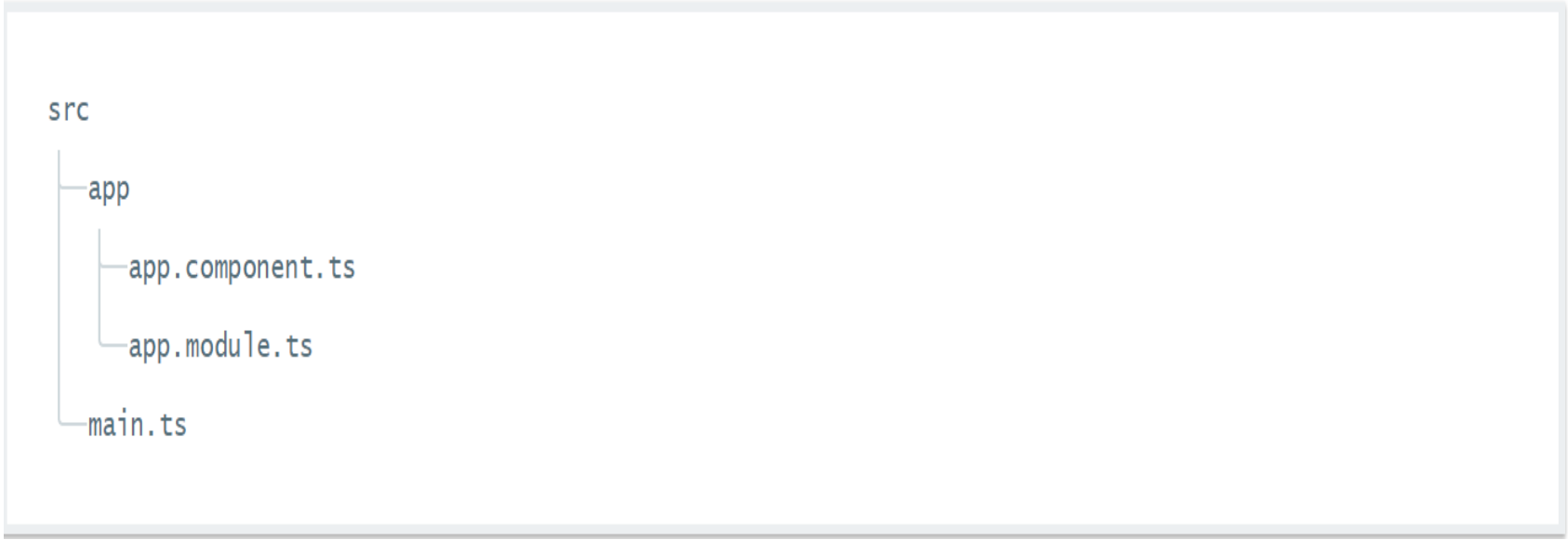
- Install Node
  - https://nodejs.org/en/

- Run commands on command prompt
  - npm –version --- Check node version
  - git clone https://github.com/angular/quickstart.git quickstart
  - cd quickstart
  - npm install --- install node modules
  - npm start ---Start node server & run your Application

Installing and using Angular 2 (Contd…)

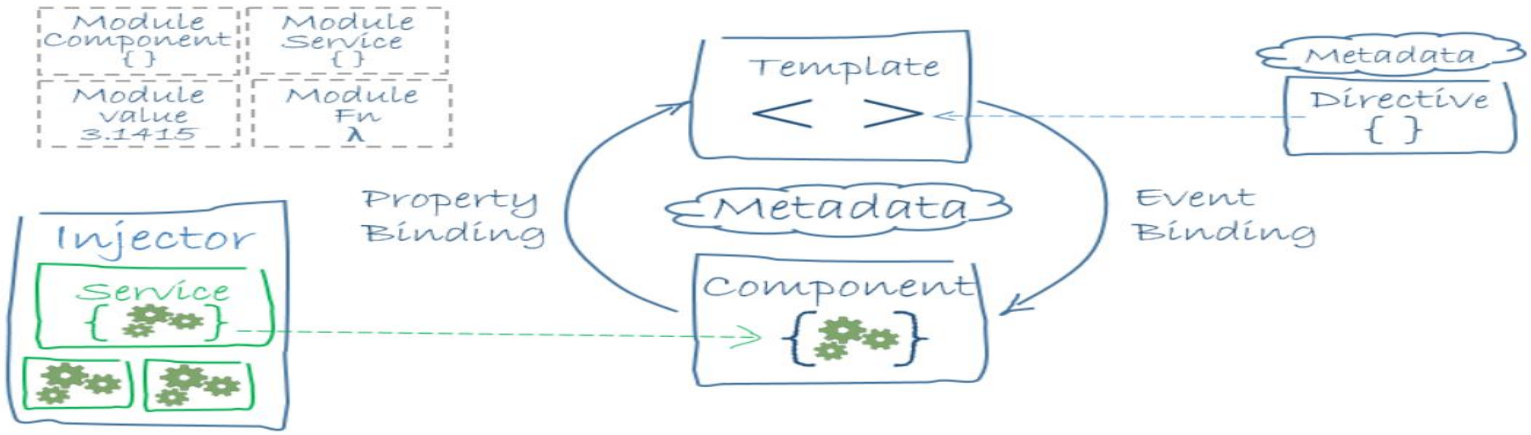
- Angular 2 Dependencies
  - core-js
  - zone.js
  - Systemjs
  - systemjs.config.js

- After creating Projects 3 typescript file created



Blocks of Angular 2

- The architecture diagram identifies the eight main building blocks of an Angular application-

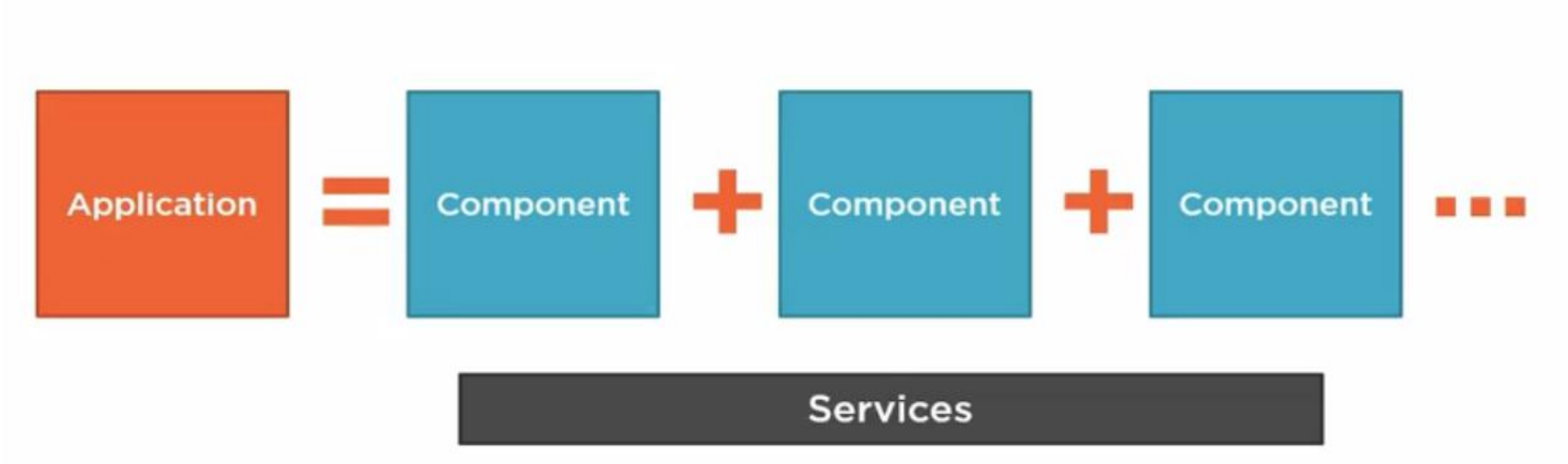


- Modules
- Templates
- Data binding
- Services

Components
Metadata
Directives
Dependency injection

A Basic Angular 2 Application

- An application is consists of a set of components, and some services, each component is comprised of a template, Classes and metadata.



A Basic Angular 2 Application- Module

- Angular apps are modular and Angular has its own modularity system called *Angular modules* or *NgModules*.
- Every Angular app has at least one Angular module class, the root module, conventionally named AppModule.
- An Angular module, whether a root or feature, is a class with an @NgModule decorator.
- NgModule is a decorator function that takes a single metadata object whose properties describe the module.

A Basic Angular 2 Application-Module

- Some important properties are
  - **declarations** - the view classes that belong to this module. Angular has three kinds of view classes: components, directives, and pipes.
  - **exports** - the subset of declarations that should be visible and usable in the component templates of other modules.
  - **imports** - other modules whose exported classes are needed by component templates declared in this module.
  - **providers** - creators of services that this module contributes to the global collection of services; they become accessible in all parts of the app.
  - **bootstrap** - the main application view, called the root component, that hosts all other app views. Only the root module should set this bootstrap property.

A Basic Angular 2 Application-Root Module

- Every application has at least one Angular module, the root module that you bootstrap to launch the application.

```
import { NgModule } from '@angular/core';
import { BrowserModule } from '@angular/platform-browser';
import { AppComponent } from './app.component';

@NgModule({
imports: [ BrowserModule ],
declarations: [ AppComponent ],
bootstrap: [ AppComponent ]
})

export class AppModule { }
```

A Basic Angular 2 Application-Root Module

- Launch an application by bootstrapping its root module—main.ts.
- Angular ships as a collection of JavaScript modules. We can think of them as library modules. Each Angular library name begins with the @angular prefix.
- The application module needs material from within that BrowserModule. To access that material, add it to the @NgModule metadata imports like this.
  - imports: [BrowserModule]

```
import { platformBrowserDynamic
} from '@angular/platform-
browser-dynamic';
import { AppModule } from
'./app/app.module';

platformBrowserDynamic().bootstr
apModule(AppModule);
```

Working with Angular 2 with Eclipse

- Download Eclipse with Angular2 plugin & typescript
  - https://www.eclipse.org/oxygen/

- Steps to run & create Angular projects in Eclipse
  - Go to File -> New-> Project->Java & choose java project
  - Copy the *angular-quickstart shared projects with node module*
  - *Open cmd promp,go till eclipse work space where putted Angular Project*
  - *Run command --→ npm start*

```
D:\AllDemoAngular\ModuleDemo>npm start

> angular-quickstart@1.0.0 prestart D:\AllDemoAngular\ModuleDemo
> npm run build


> angular-quickstart@1.0.0 build D:\AllDemoAngular\ModuleDemo
> tsc -p src/
```

Demo

- Module Demo

Summary

- Angular2 is a framework for building client applications in HTML.
- The framework consists of several libraries, some of them core and some optional.
- Angular apps are modular and Angular has its own modularity system called *Angular modules* or *NgModules.*