

Angular Training

Intermediate Level

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Setup:

- Node Version:
node --version
- OPTUM's npm registry:
npm config set registry <https://repo1.uhc.com/artifactory/api/npm/npm-virtual/> --global
- Angular setup:
npm install -g @angular/cli

Create a workspace and initial application

Cmd: `ng new my-app`

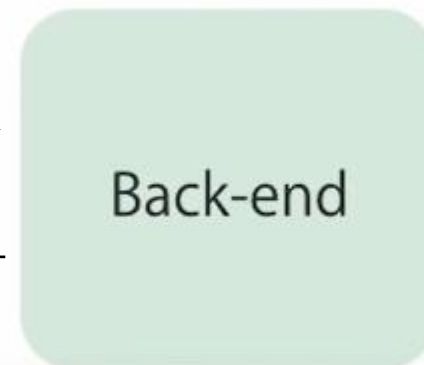
- No for strict type checking.
- Select Yes(Y) for Routing.
- Select SCSS for Styling.
- Download VS code Editor.
Link: <https://code.visualstudio.com/download>

Angular Basics

User Interface (UI)



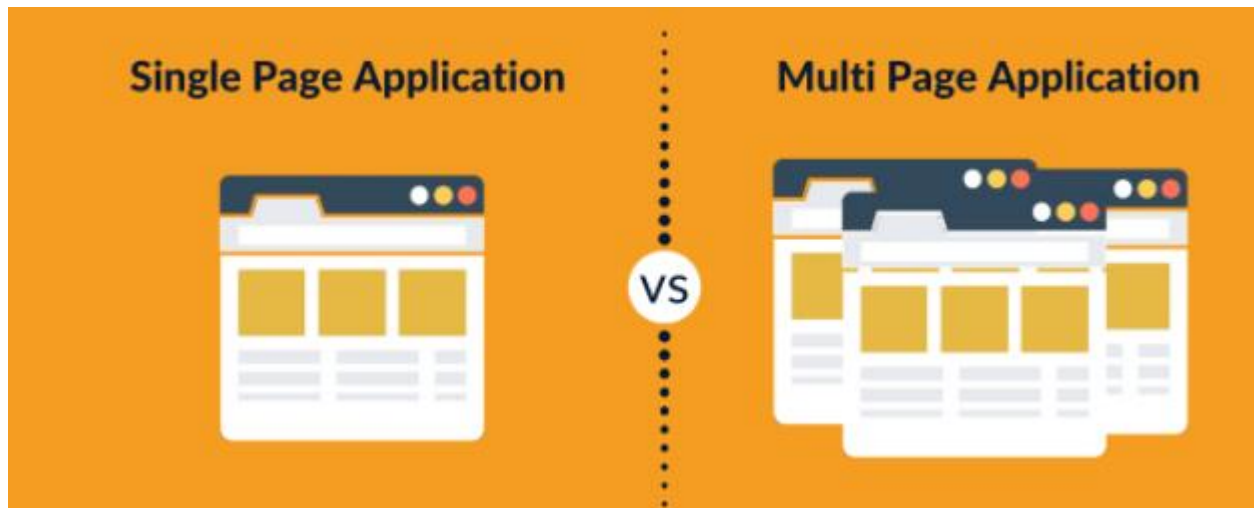
Data and Processing



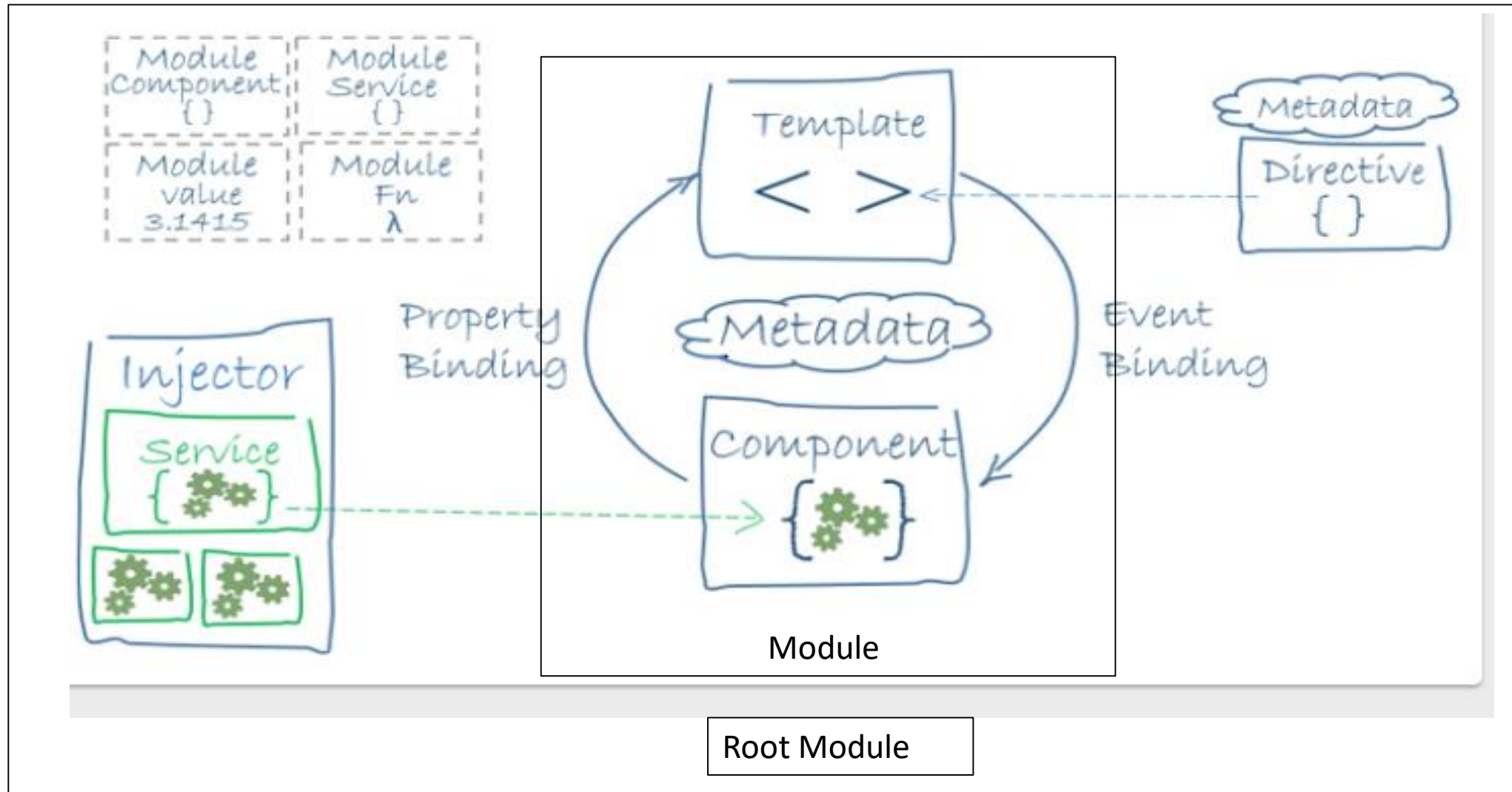
HTML
CSS
TypeScript
Angular

Angular Basics

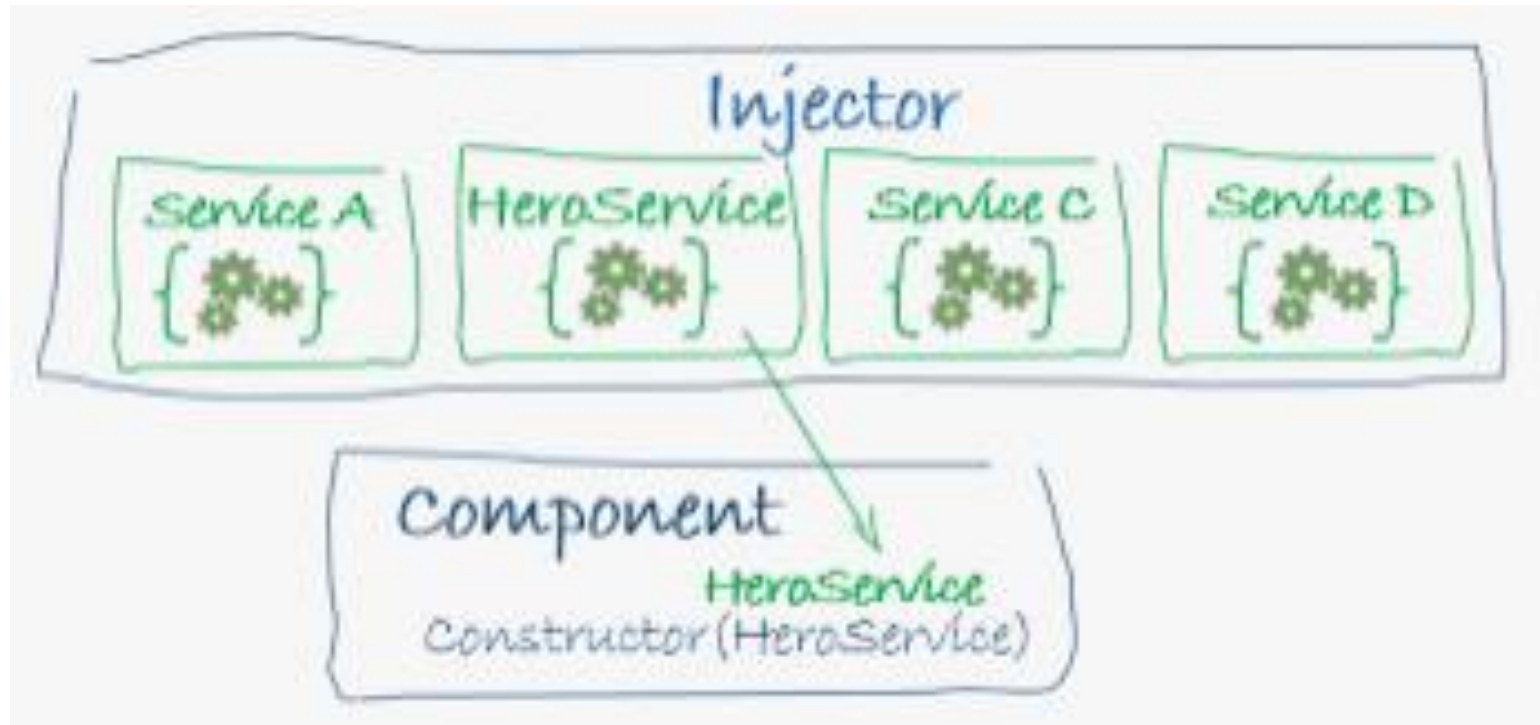
- Applications that are contained within one web page are called single-page applications (SPA).
- All the views are displayed in one page i.e., “index.html”.



Angular Architecture

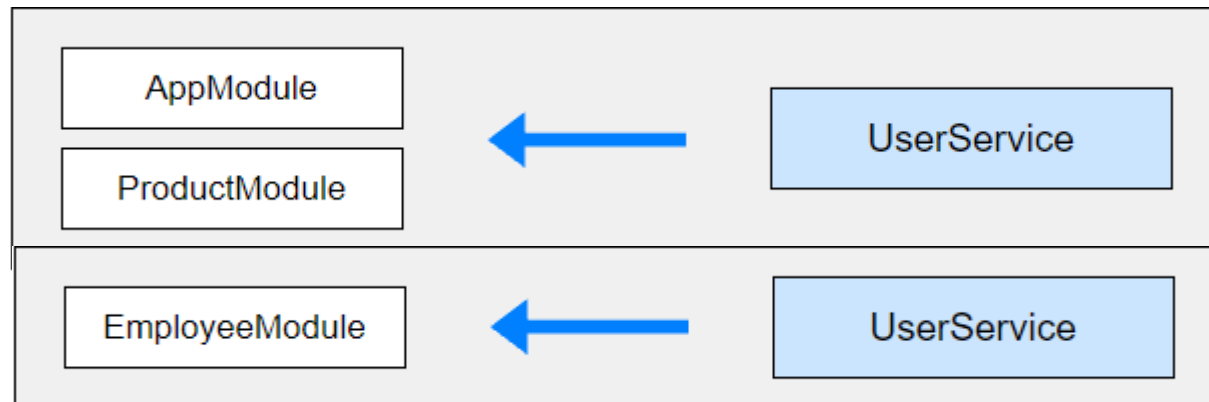


Dependency Injection



Provider Scope

- Root Module Level (Application Level).
- Module Level.
- Component Level.
- Root Module (Application Level) & Lazy Loaded Module Level (Lazy Loaded Module's unique instance).



Angular Modularity

- Modules are a great way to organize an application and extend it with capabilities from external libraries.
- The Angular framework itself is a set of JavaScript modules.
- Frequently used Angular modules :
 - BrowserModule
 - CommonModule
 - FormsModule
 - ReactiveFormsModule
 - RouterModule
 - HttpClientModule

Types of Modules

- Root Module
- Core Module
- Feature Modules
- Routing Modules
- Shared Modules
- Service Module

Routing

- Routing allows us to navigate through all the views by configuring the route for each component that will display a view.
- **Navigating through Angular Application Routes**
 - Menu option, link, image, buttons chained with click events activates a route.
 - Typing the URL in URL address bar.
 - Browser's forward, backward buttons.
- **Route Configuration**

Eg: `<base href="/"> // index.html`
`RouterModule.forRoot([`
`{ path: 'home', component: BbbCompComponent }]), //AppModule.ts`

Route declarations

```
const routes: Routes = [  
  // maps specific URL path segment  
    { path: 'home', component: PcompComponent },  
  
  // specifies a router param and maps the specific URL path segment  
    { path: 'product/:id', component: ProductDetailComponent },  
  
  // specifies & maps a empty route  
    { path: '', redirect: 'home', pathMatch: 'full'},  
  
  // specifies & maps a wildcard path route  
    { path: '**', component: PageNotFoundComponent}];
```

Location Strategies in Angular Router

- **HashLocationStrategy**

Eg: <http://localhost:4200/#/product>

- uses the anchor tags technique to achieve client-side routing.

- **PathLocationStrategy**

Eg: <http://localhost:4200/product>

- HTML5 allows browsers to programmatically alter the browser's history through the history object.
- Default strategy in Angular application

Forms

- Forms are used to collect the data from the user.
- Angular supports two design approaches for interactive forms.
 - Template Driven Forms
 - HTML & Data Binding – Form template in HTML which is bind in component code.
 - Reactive Forms
 - Model Driven – Form Model & validation in component code.

Building Blocks of Angular Forms

- FormControl tracks the value and validation status of an individual form control.
Eg: ngModel , FormControl
- FormGroup tracks the same values and status for a collection of form controls.
Eg: ngForm, FormGroup
- FormArray tracks the same values and status for an array of form controls.
Eg: ngModelForm, FormArray

HTTP Requests using HTTPClient

- Most front-end applications need to communicate with a server over the HTTP protocol, to download or upload data and access other back-end services.
- Module allows us to query the Remote API source to get data into our Application.
- HttpClient is a separate model in Angular and is available under the `@angular/common/http` package.

Route Guards

- CanActivate
- CanDeactivate
- Resolve
- CanLoad
- CanActivateChild

Thank You