Angular Assignment

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1) What is Angular 7? How is it different from AngularJS?

Sol: Angular 7 is an open source JavaScript framework for building web applications and apps in JavaScript, html, and Typescript which is a superset of JavaScript. Angular provides built-in features for animation, http service, and materials which in turn have features such as auto-complete, navigation, toolbar, menus, etc. The code is written in Typescript, which compiles to JavaScript and displays the same in the browser.

AngularJS, is a javascript based open-source front-end framework and is mainly used to develop single page applications on web. It enriches the static HTML to dynamic HTML. It extends existing HTML by providing directives.

Comparison between Angular and AngularJS:

- **Architecture:**
  Angular JS: Supports Model-View-Controller design. The view processes the information available in the model to generate the output.
  Angular: Uses components and directives. Components are the directives with a template.
- **Written:**
  Angular JS: Written in JavaScript.
  Angular: Written in Microsoft's TypeScript language, which is a superset of ECMAScript 6 (ES6).
- **Mobile support:**
  Angular JS: Does not supported by mobile browsers.
  Angular: But Angular supported by all the popular mobile browsers.
- **Expression Syntax:**
  Angular JS:ng-bind is used to bind data from view to model and vice versa.
  Angular: Properties enclosed in "()" and "[]" are used to bind data b/w view and model.

- **Dependency Injection:**
  Angular JS: Does not use Dependency Injection.
  Angular: Hierarchical Dependency Injection system used.
- **Routing:**
  Angular JS: AngularJS uses $routeprovider.when() for routing configuration.
  Angular: Angular uses @Route Config{(…)} for routing configuration.
- **Structure:**
  Angular JS: It is less manageable in comparison to Angular.
  Angular: Better structure compare to AngularJS, easier to create and maintain large applications but behind in AngularJS in case of small applications.

2) What is Angular framework?

Sol: AngularJS is a JavaScript-based open-source front-end web framework mainly maintained by Google and by a community of individuals and corporations to address many of the challenges encountered in developing single-page applications. It aims to simplify both the development and the testing of such applications by providing a framework for client-side model–view–controller (MVC) and model–view–viewmodel (MVVM) architectures, along with components commonly used in rich Internet applications.

AngularJS is used as the frontend of the MEAN stack, consisting of MongoDB database, Express.js web application server framework, Angular.js itself, and Node.js server runtime environment.

3) What is the difference between AngularJS and Angular?

Sol: **Comparison between Angular and AngularJS:**

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4) What is the difference between structural directive and attribute directive in Angular 7?

Sol:

Difference between Structural and attribute directives.

Structural directive.	Attribute directive.
Structural directives are responsible for HTML layout. They shape and modify the DOM's structure by adding, removing, or manipulating elements. .	Attribute directive are used as element attributes that change the appearance or behavior of an element, component, or another directive. .
You can only apply one structural directive to a host element.	You can apply many attribute directives to one host element.
*ngIf and *ngFor are examples.	ngStyle and ngClass are builtin attribute directives.

5) What is the difference among "declarations", "providers" and "import" in NgModule?

Sol:

- **Declarations:**
  - Declarations are used to **declare** components, directives, pipes that belongs to the **current module.**
  - Everything inside declarations knows each other.
  - Declarations are used to make directives (including components and pipes) from the current module available to other directives in the current module.
  - Selectors of directives, components or pipes are only matched against the HTML if they are declared or imported.

  Example of declaration:

```
import { AppComponent } from './app.component';
```

```
@NgModule({
 declarations: [AppComponent],
 )}
```

- **Providers:**
  - Providers are used to make **services** and values known to **dependency injection**.
  - They are added to the root scope and they are injected to other services or directives that have them as **dependency.**

Example of Provider:

```
import { StateService } from './services/state.service';


@NgModule({
 providers: [ StateService ],
 )}
```

- **Imports:**
  - Imports **makes the exported declarations** of **other modules available** in the current module.
  - It is used to **import supporting modules** likes FormsModule, RouterModule, CommonModule etc.

Example of Import:

```
import { BrowserModule } from '@angular/platform-browser';


@NgModule({
 imports: [BrowserModule],
 )}
```

6) What are the key components of Angular?

Sol: A Component consists of the following −

- **Template** − This is used to render the view for the application. This contains the HTML that needs to be rendered in the application. This part also includes the binding and directives.
- **Class** − This is like a class defined in any language such as C. This contains properties and methods. This has the code which is used to support the view. It is defined in TypeScript.
- **Metadata** − This has the extra data defined for the Angular class. It is defined with a decorator.

7) Explain the Architecture overview of Angular.

Sol: Angular is a platform or framework to build client-based applications in HTML and TypeScript. It is written in TypeScript. It implements core and optional functionality as a set of TypeScript libraries that are imported into applications. Angular consists of Three main things that are Modules, Components, and Routing.

ngModules or modules are basic building blocks of angular applications. An angular app is defined by a set of ngModules. It is important for every application to have a root module in it. Components define views, which are sets of screen elements that Angular can choose among and modify according to the program logic and data. It is important to have at least one component in every application called the root component. Components use services to communicate and share data with each other. Routing includes the linking of multiple components with each other.

8) How would you update Angular 6 to Angular 7?

Sol: Upgrading to Angular 7 takes just a few simple steps:

1. First, upgrade the Angular version globally by adding the latest version via the terminal: sudo npm install -g @angular/cli@latest
2. Upgrade the version locally in your project and make sure the changes for the new version are reflected in the package.json fileng update @angular/cli
3. Upgrade all your dependencies and dev dependencies in package.json

1. **Dependencies:**
    1. npm install --save @angular/animations@latest @angular/cdk@latest @angular/common@latest @angular/compiler@latest @angular/core@latest @angular/flex-layout@latest @angular/forms@latest @angular/http@latest @angular/material@latest @angular/platform-browser@latest @angular/platform-browser-dynamic@latest @angular/router@latest core-js@latest zone.js@latest rxjs@latest rxjs-compat@latest
2. **Dev Dependencies:**
    1. npm install --save-dev @angular-devkit/build-angular@latest @angular/compiler-cli@latest @angular/language-service @types/jasmine@latest @types/node@latest codelyzer@latest karma@latest karma-chrome-launcher@latest karma-cli@latest karma-jasmine@latest karma-jasmine-html-reporter@latest jasmine-core@latest jasmine-spec-reporter@latest protractor@latest tslint@latest rxjs-tslint@latest webpack@latest
3. Angular-devkit was introduced in Angular 6 to build Angular applications that required dependency on your CLI projects.
4. Also, you'll need to upgrade the version for Typescriptnpm install typescript@2.9.2 --save-dev

4. Now, migrate the configuration of angular-cli.json to angular.jsonng update @angular/cli
   ng update @angular/coreIf Angular material is used, use this command:ng update @angular/material
5. Remove deprecated RxJS 6 features npm install -g rxjs-tslint
   rxjs-5-to-6-migrate -p src/tsconfig.app.json(Please, be patient and wait until the execution completes).
6. Now, uninstall rxjs-compat as it is an unnecessary dependency for Angular 7.npm uninstall --save rxjs-compat
7. Also changeimport { Observable } from 'rxjs/Observable';
   toimport { Observable } from 'rxjs';

Finally, start your Angular 7 application using ng serve.

9) What is the UrlSegment Interface in Angular 7?

Sol: UrlSegment is a modified feature of Angular 7 which is used to add a new interface. In other words, UrlSegment Interface feature represents URL segment, constructor, properties and methods which are present in UrlSegment class.

10) What is Do Bootstrap (ng Do Bootstrap) In Angular 7?

Sol: You can use ng-bootstrap: The Angular version of the Angular UI Bootstrap library which is built from scratch by the ui-bootstrap team using TypeScript and Bootstrap 4 CSS framework. It has two dependencies which are Angular and Bootstrap 4 CSS file.