**Angular 4**

https://www.tutorialspoint.com/angular4/angular4\_project\_setup.htm

What is an angular component?

Component is class where you write binding code.Components binds the UI and model.

**Angular** is a **component**-based framework. **Components** are the main building blocks of the **Angular** framework. So, as per the definition of a **component**, it is a basically a class which is defined to be visible in any elements in the screen or browsers.

ng g component new-cmp

**What is an angular Module?**

Module groups component, directives, pipes, and services .In a big project you will have lot of components, UI and model , you can logically group them by using module

Module in Angular refers to a place where you can group the components, directives, pipes, and services, which are related to the application. **Module** in Angular refers to a place where you can group the components, directives, pipes, and services, which are related to the application.

In case you are developing a website, the header, footer, left, center and the right section become part of a module.

To define module, we can use the **NgModule**. When you create a new project using the Angular –cli command, the ngmodule is created in the app.module.ts

**To generate a new module:** ng g module module-name or ng g m module-name

**To generate a new module and import with another module:**

ng g module module-name -module=app.module or

ng g m module-name -module=app.module

**Module type:**

* **Feature Module**
* **Root Module**
* **Core Module**
* **Share Module**
* **Routing Module**

**What is an angular Directives?**

**Directives** in Angular is a **js** class, Directives are the element which change the appearance and beahaviour of dom elements.

which is declared as **@directive**. We have 3 directives in Angular.

The directives are listed below −

* **Component Directives:**Directive with own template.

These form the main class having details of how the component should be processed, instantiated and used at runtime.

* **Structural Directives:**Change dom by adding and removing component

A structure directive basically deals with manipulating the dom elements. Structural directives have a \* sign before the directive. For example, **\*ngIf** and **\*ngFor**.

* **Attribute Directives:change behavior and appearance of dom**

Attribute directives deal with changing the look and behavior of the dom element.

Attribute is a way to modify the appearance of dom elents or component. There two build attribute directives.

1. ngClass: used to change the class attribute of the element in dom
2. ngStyle: angular provides build- in attribute to modify the elements appearance and behaviour

You can create your own directives

Ng g directive directiveName

**What is an angular Routing?**

**Routing** basically means navigating between pages. You have seen many sites with links that direct you to a new page. This can be achieved using routing. Here the pages that we are referring to will be in the form of components. We have already seen how to create a component. Let us now create a component and see how to use routing with it.

**What is an angular DataBinding?**

1. **One way data binding : using Interpolation{{}} and propertyBinding[ ]**
2. **Two way data binding :**

**What is SPA?**

**Single page application are the application where the main UI loaded once and then the needed UI is loaded on demand.**

Single-Page Applications (**SPAs**) are Web apps that load a single HTML page and dynamically update that page as the user interacts with the app. **SPAs** use AJAX and HTML5 to create a fluid and responsive Web apps, without constant page reloads.

**What is Lazy Loading?**

**Asynchronous routing, loads features modules lazily , on demand. This can significantly reduces the initial load time of you application.**

**Lazy loading** modules in **Angular 6** allows applications to **load** modules only when they are needed i.e when you first visit the route(s) corresponding to component(s) belonging to the **lazy loaded** module. This has many benefits on your **Angular 6** application such as the performance and size.

**Lazy loading** is a technique in **Angular** that allows you to **load** JavaScript components asynchronously when a specific route is activated. ... There are some good posts about **lazy loading in angular**, but I wanted to simplify it further.

Let’s create a module that will be lazy loaded, along with a couple components. The --flat flag prevents a directory from being created, then we can easily add components to the module via the Angular CLI.

Create a new Angular 6 application. ...

 Create 3 views/pages to implement Lazy Loading Concept using. ...

 Import router module in app. ...

 Add code in Component Modules and their own routing modules. ...

 Define Routes using loadChildred attribute in app's main routing module. ...

 Add links to Route/ Open views.

ng g module lazy --flat  
ng g component lazy-parent --module lazy  
ng g component lazy-child --module lazy

**The Environment Setup required for Angular 4. To install Angular 4, we require the following −**

1.NodeJs

2.Npm

3.Angular CLI

4.IDE for writing your code

Nodejs has to be greater than 4 and npm has to be greater than 3.

Compile project : ng serve

Default port: 4200 localhost:4200

For changing port

ng serve --host 0.0.0.0 –port 4205

**Angular4 Component**

Let us now run the command to create the component.

ng g component new-cmp

**Create new Component :**

Run the command to create the component.

ng g component new-cmp

new-cmp.component.css − css file for the new component is created.

new-cmp.component.html − html file is created.

new-cmp.component.spec.ts − this can be used for unit testing.

new-cmp.component.ts − here, we can define the module, properties, etc.

Interview Question

**Angular 4: https://www.educba.com/angular-4-interview-questions/**

1. What is unit testing in Angular 4?

Unit testing or private testing is used to test the system’s components. This process is s best practice to test small separate pieces of code. If the unit testing depends on any of the external resources such as networks, APIs and databases, then it won’t be listed as a unit test.

**Q. 2.Why angular 4 is faster?**

Angular 4 is fast compared to its previous versions due to various reasons. Here are some of them mentioned below:

• It reduces the size of generated code bundle up to 60%.

• The animation part moved out to a separated package @angular/animations

• It is backward compatible.

**Q. 3.How to install Angular 4?**

There are various ways available to install Angular 4.

• Install the Angular CLI npm install -g @angular/cli

• Create a Project ng new MyApp

• Serve the application

cd MyApp

ng serve --open

**Q. 4.What are the new features in Angular 4?**

Angular 4 has several new feature additions. As most of the changes are implemented to the background rather than its core functionality of coding, it’s being called an invisible makeover to its previous version. The compiler error messages have improved as well as the code generation. According to the Angular team, patches will be released every week. All the major releases will be followed with minor Angular release. Every six months, there will be a significant release for the framework which will be easy to integrate breaking changes. It also has the potential to improve performance when used appropriately. The structure now also supports TypeScript 2.1+.

New features in Angular 4.

• TypeScript Compatibility

• Dynamic Components

• Source Maps for Templates

• Router ParamMap

• AOT Compilation

• Revamped \*ngIf and \*ng For

• Animations Package

• Angular Universal

• Flat ES Modules

• Smaller and Quick

**Q. 5.What is data binding? Explain different types of binding in Angular 4.**

One of the most important and powerful features of any software programming language is Data Binding. Data binding is the automatic and instantaneous synchronization between two different layers of AngularJS i.e., model and view. There may be a situation in which the developer may have to transfer data from component(model) to view or vice versa. This problem can be easily tackled through the concept of data binding.

There are three types of Data Binding in Angular 4:

• Property Binding: Updating the value of a certain variable in the model layer and then displaying it in view is the presentation layer, this is known as Property binding.

• Event Binding: Updating or sending the information or the values of certain variables from the view layer that is also known as the presentation layer to the component that means the model layer, this is what Event binding is.

• Two Way Binding: It is the combination of both Property and Event binding.

**Q. 6.What are the difference between angular 2 and 4?**

Here are a few significant differences between Angular 2 and 4 which developers are going to notice.

• Angular 4 has many inbuilt animation packages which were missing in Angular 2.

• Angular 4 has its template tag called “ng-template.” The previous version uses only “template.”

• Compared to Angular 2, in the newest version, developers can use else syntax with Nglf for excellent UI handling.

• A new template syntax addition “as keyword” in Angular 4 which can be used to simplify to the “let” syntax.

• Simplified “HTTP request” and application testing in Angular 4.

**Q. 7.What is ElementRef in angular 4?**

ElementRef is basically a class or reference types used for abstraction. The class structure holds the native elements and ElementRef is used to access the native elements

@Component({

selector: 'sample',

...export class SampleComponent{

constructor(private hostElement: ElementRef) {

//outputs

console.log(this.hostElement.nativeElement.outerHTML);

}

ElementRef is used to break the abreaction rather than using specific API DOM like textContent

**Q. 8.What is the use of services in angular 4?**

Angular 4 services contain functions or methods that consistently maintain the data of an application throughout its life which implies that data will remain secure and available at all time. The main aim of angular 4 services is to share business logic, data, information, models with several components of angular 4 applications.

**Q. 9.What is the purpose of forRoot Method in Angular 4?**

In Angular 4, the ForRoot method is used when the module is "eager," not lazy-loaded. Except for lazy modules which loaded on-demand with their factory, Angular creates a factory for all other modules. The ForRoot method allows users to access providers from any point in the application that is not lazy-loaded. This ultimately will enable users to have different configurations for different load cases.

Q. 41.How to create a new component using CLI in Angular 4?

To create a new component in Angular 4 using CLI,

• Open Project Directory

• Run any one of the below mentioned the syntax

We have the most extensive question bank to help you answer Angular 4 interview questions and answers.

Example

ng component name

or

ng generate component componentname

Q. 42.How to upgrade angular 2 project to angular 4? Explain

No coding level changes are required to enhance a project present in Angular 2 to Angular 4. Users only have to update the tsconfig.json and package.json files. Some minor adjustments may be needed depending on project types. After updating the data, clean out your node\_modules directory, run npm install and npm start and you will be started with the Angular 4.

Q. 43.How to write If Else and Then Conditions in Angular 4?

If Else statement in Angular 4 can be written using following syntax-

Open /src/app/app.components.ts:

Export class AppComponent {

Title – ‘app works!;

}

Open /src/app/app.component.html

<div \*ngIf = “ title; else login”>

The user is logged in. </div>

<ng-template #login> in order to login pleae continue. </ng-template>

Then statement can be write using following syntax-

<div \*ngIf = “title; then logout else login “> </div>

<ng-template #login> please login to continue . </ng-template>

<ng-template #logout> Hi abc, <button> logout now </button> . </ng-template>

Q. 44.What's New features In Angular 5?

Angular 5 has plenty of new features. Few of the most important ones are mentioned below:

• Addition of a build optimizer which removes unnecessary applications and codes.

• Support for DOM and Angular Universal State Transfer API.

• Optimized standardization across various browsers.

• Addition of a new HttpClient and lifecycle events router.

• Creation of Angular 5 projects by default with CLI 1.5.

• Multiple name support for directives and components.

**Q. 46.What are the difference between directive and component in angular 4?**

•In Angular 4, components have their view, whereas directives are just “behavior” added to the existing components and elements. Simplifying it, components extend directives. There can be many directives on a host element, but only one component.

**Q. 40.How we can set Http Request Header in Angular 2 and Angular 4?**

To set Http Request Header in Angular 2, create the HTTP Client Injectable class and inject the HttpClient object in the Component. Developers use HTTP Interceptors to set Http Request Header in Angular 4. To achieve this. Write an interceptor for adds a header for every request and after creating the interceptor, register it using HTTP\_INTERCEPTORS in the @NgModule().

**Q. 39.Explain the difference between angular and AngularJS?**

AngularJS is the very first version of the Angular. A tool named AngularCLI is used to generate Angular components. Angular JS which is a client-side framework works with JavaScript and still supported but not compatible with Angular any more. Simplifying it, AngularJS is the old version and Angular is the newest one.

**Q. 38.What is Angular 4 and why it is used?**

Angular 4 is an advanced JavaScript framework which uses HTML, JavaScript, and TypeScript web applications and APK apps. It’s a superset of JavaScript and offers excellent built-in features for HTTP service, animation, navigation, menus, toolbar, materials, etc.

**Q. 37.Why we need Ngmodel in angular 4?**

We need Ngmodel in angular 4, as it possesses the property of binding and encapsulating the input elements of DOM. In short, we need Ngmodel in angular 4 for two –way-data-binding process.

**Q. 36.Explain angular 4 providers.**

In general, angular 4 providers are the injectors that inject the objects by the providers, not components and services. Angular 4 providers different types of provides namely class provider, value provider, factory provider, and alias provider, etc. additionally, angular 4 providers can be configured at component and module level.

**Q. 35.How to debug angular 4 projects from visual studio 2017?**

To debug Angular 4 projects using visual studio 2017, we have to follow the below-mentioned steps.

• Create our project as Asp.Net Core Web Application and use the “Angular” project template.

• Next to "IIS Express", click the down-arrow to set the web browser to Google Chrome.

• Run debugging and the script debugging being enabled message will pop up by Chrome.

• Continue further by setting a breakpoint on "this.currentCount++;"in counter.component.ts.

• Now visit the Counter screen to click Increment and the breakpoint set will be hit.

• While performing this, make sure to turn off the Chrome Developer Tool running

**Q. 33.What is the difference between Angularjs 4 and AngularJS?**

Angular 4 is the upgraded version of AngularJS, which is the very first introduction of AngularJS. The newer version Angular 4 has fulfilled several drawbacks of its predecessor and introduced excellent features such as Router ParamMap support, Dynamic Components with NgComponentOutlet, latest TypeScript functions, simplified HTTP request, better Animation package, mobile-oriented framework, server-side run and more, which were are not available with the AngularJS

**Q. 15.What do you mean by observables and promises?**

Promises help to function with asynchronous operations. They work in two conditions. They either return a single value when the promise resolves or an error message when the promise gets rejected. Whenever a request is made from a promise, it becomes a non-cancellable command.

On the other hand, observable can be regarded as a stream. It can be anything, a stream of data or events. It can be canceled, unlike promise. An observable can be easily converted into a promise by specifying a command “toPromise( )” with the command t

**Q. 12.How to send and set cookies in Angular 4?**

We can use the ngx-cookie-service node package to save cookies in Angular 4.

Use the following steps:

• Install the node package with the following syntax:

npm install ngx-cookie-service –save

• Now, we have to add the cookies service to app.module.ts as a provider.

@NgModule({

...,

providers: [ CookieService ]

})

• Further, continue by importing and injecting it into a component.

import { CookieService } from 'ngx-cookie-service';

constructor( private cookieService: CookieService ) { }

ngOnInit(): void {

this.cookieService.set( 'Test', 'Hello World' );

this.cookieValue = this.cookieService.get('Test');

}