

# 100 Angular Interview



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## 1. What is Angular?

Angular is a popular open-source JavaScript framework developed and maintained by Google. It is used for building dynamic web applications and provides tools and features to simplify the development process.

## 2. What are the key features of Angular?

Some key features of Angular include:

- Two-way data binding
- Directives
- Dependency injection
- Templating
- Routing
- Form handling
- Component-based architecture

## 3. What is the latest version of Angular?

As of my knowledge cutoff in September 2021, the latest stable version of Angular is Angular 12. However, there may be newer versions released since then. It's always recommended to check the official Angular website for the latest version.

## 4. What are directives in Angular?

Directives are Angular's way of extending HTML with new behavior or modifying existing behavior. There are three types of directives in Angular: Component Directives, Structural Directives, and Attribute Directives.

## 5. What is a component in Angular?

A component in Angular is a self-contained, reusable, and independent block of code responsible for the view and logic of a specific part of the user

interface. Components are the building blocks of an Angular application.

## **6. What is data binding in Angular?**

Data binding is a feature in Angular that establishes a connection between the UI (view) and the component's data. There are four types of data binding in Angular: Interpolation, Property binding, Event binding, and Two-way binding.

## **7. What is dependency injection in Angular?**

Dependency Injection (DI) is a design pattern in which the dependencies of a class or component are provided externally rather than creating them within the class. Angular has built-in support for dependency injection, making it easier to manage dependencies and write testable code.

## **8. Explain the difference between AngularJS and Angular.**

AngularJS, also known as Angular 1, is an older version of the framework, while Angular refers to Angular 2 and later versions. AngularJS is based on JavaScript, whereas Angular is based on TypeScript. Angular offers improved performance, better modularity, and a more powerful toolset compared to AngularJS.

## **9. What is lazy loading in Angular?**

Lazy loading is a technique in Angular that allows you to load modules and their associated components on-demand, only when they are needed. This helps improve the initial loading time of the application by splitting it into smaller bundles.

## **10. What is Angular CLI?**

Angular CLI (Command Line Interface) is a command-line tool that provides a set of commands to initialize, develop, test, and deploy Angular applications. It simplifies the Angular development workflow and automates common tasks.

## **11. What is a template in Angular?**

A template in Angular is a combination of HTML and Angular-specific syntax that defines the structure and layout of a component's view. It includes placeholders for dynamic data and bindings to connect the component with the view.

## **12. What is Angular Router?**

Angular Router is a module that provides a client-side navigation system for Angular applications. It allows you to define routes and associate them with components, enabling navigation between different views.

## **13. What is the use of ngFor directive in Angular?**

The ngFor directive is used in Angular for looping over a collection of items and generating HTML elements dynamically. It is commonly used for rendering lists of items or generating table rows.

## **14. What is Angular CLI command to generate a new component?**

The Angular CLI command to generate a new component is:

```
ng generate component component-name
```

or the shorthand version:

```
ng g c component-name
```

## **15. What is Angular module?**

An Angular module is a mechanism for organizing the components, directives, services, and other building blocks of an Angular application. It provides a context in which these building blocks can be used together.

## **16. What is the purpose of NgModule in Angular?**

NgModule is a decorator in Angular used to define a module. It specifies which components, directives, pipes, and services belong to the module and how they should be compiled and instantiated.

## **17. What is the difference between NgModule and Component in Angular?**

NgModule is used to define a module in Angular, while Component is used to define a component. A module is a container for related components, directives, pipes, and services, whereas a component represents a specific part of the user interface.

## **18. What is Angular CLI command to generate a new module?**

The Angular CLI command to generate a new module is:

```
ng generate module module-name
```

or the shorthand version:

`ng g m module-name`

### **19. What is the purpose of the `ngOnInit` lifecycle hook?**

The `ngOnInit` lifecycle hook is used in Angular to perform initialization tasks for a component after it has been constructed and its inputs have been resolved. It is commonly used to fetch data from a server or initialize component properties.

### **20. What is the purpose of `ngOnChanges` lifecycle hook?**

The `ngOnChanges` lifecycle hook is used in Angular to react to changes in the input properties of a component. It is called whenever the value of an input property changes.

### **21. What is Angular template-driven forms?**

Angular template-driven forms are a way of building forms in Angular using template-driven syntax. The form structure and validation rules are defined directly in the HTML template using directives and binding expressions.

### **22. What is Angular reactive forms?**

Angular reactive forms are a way of building forms in Angular using reactive programming principles. The form structure and validation rules are defined programmatically using form controls and form groups.

### **23. What is the difference between template-driven forms and reactive forms in Angular?**

In template-driven forms, the form structure and validation rules are defined in the HTML template, while in reactive forms, they are defined programmatically. Template-driven forms rely on directives and binding expressions, while reactive forms use form controls and form groups.

### **24. How can you pass data from parent component to child component in Angular?**

Data can be passed from a parent component to a child component in Angular using input properties. The parent component binds a value to an input property of the child component, and the child component can access and use that value.

## **25. How can you pass data from child component to parent component in Angular?**

Data can be passed from a child component to a parent component in Angular using output properties and event emitters. The child component emits events with the data, and the parent component listens for these events and handles them.

## **26. What is the purpose of Angular service?**

Angular services are used to encapsulate reusable logic or data that multiple components may need. They provide a way to share data and functionality across components and help in keeping the code modular and maintainable.

## **27. What is the difference between a component and a service in Angular?**

A component is responsible for the view and logic of a specific part of the user interface, while a service provides common functionality or data that can be shared across multiple components. Components are typically used for user interaction, while services handle business logic and data manipulation.

## **28. How can you inject a service into a component in Angular?**

To inject a service into a component in Angular, you can use constructor injection. You declare a parameter in the component's constructor with the type of the service, and Angular's dependency injection system will provide an instance of that service when creating the component.

## **29. What is a resolver in Angular routing?**

A resolver in Angular routing is a service that pre-fetches data before navigating to a route. It ensures that the required data is available before the component associated with the route is instantiated, preventing any delays in rendering the component.

## **30. What is the purpose of the async pipe in Angular?**

The async pipe in Angular is used to subscribe to an observable or a promise in the template and automatically update the view whenever the data emitted by the observable or resolved by the promise changes.

## **31. What is Angular testing?**

Angular testing involves writing and running tests to ensure that Angular applications and their components, services, and other building blocks function correctly. Angular provides tools and frameworks like Jasmine and Karma for writing and executing tests.

### **32. What is TestBed in Angular testing?**

TestBed is a utility in Angular testing that provides a testing environment for configuring and creating instances of components, services, and other dependencies. It allows you to simulate a module and its dependencies to perform unit tests.

### **33. What is the purpose of spyOn in Angular testing?**

spyOn is a function provided by Jasmine, the testing framework used in Angular, that allows you to spy on methods of an object or a class. It enables you to track method calls, return predefined values, and perform assertions on method invocations during testing.

### **34. What is Angular CLI command to run tests?**

The Angular CLI command to run tests is:

**ng test**

### **35. What is Angular Change Detection?**

Angular Change Detection is the mechanism that detects changes in the application's data and updates the view accordingly. It determines which parts of the view need to be re-rendered based on changes in the data and optimizes the rendering process.

### **36. What is the difference between ngOnChanges and ngOnInit?**

ngOnChanges is a lifecycle hook that is called when the input properties of a component change, while ngOnInit is called once after the component has been initialized and its inputs have been resolved.

### **37. What is a pipe in Angular?**

A pipe in Angular is a feature that allows you to transform data before displaying it in the view. It takes input data, applies a transformation, and returns the transformed data. Angular provides built-in pipes for common transformations and also allows you to create custom pipes.

### **38. How can you create a custom pipe in Angular?**

To create a custom pipe in Angular, you need to define a class with the Pipe decorator and implement the PipeTransform interface. The class should have a transform method that takes the input data and returns the transformed data.

### **39. What is the purpose of the async validator in Angular forms?**

The async validator in Angular forms is used to perform asynchronous validation on form controls. It allows you to make server-side requests or perform time-consuming operations to validate the input data and provide feedback to the user.

### **40. What is the purpose of the ngModel directive in Angular forms?**

The ngModel directive is used in Angular forms to create a two-way data binding between a form control and a component's property. It enables synchronization of the input data between the form control and the component.

### **41. What is an Angular interceptor?**

An Angular interceptor is a feature that intercepts HTTP requests and responses and can modify them before they are sent to the server or before they reach the application. Interceptors are useful for adding headers, handling errors, or performing other actions globally for HTTP requests.

### **42. What is the purpose of the trackBy function in Angular ngFor loop?**

The trackBy function is used in Angular's ngFor loop to provide a unique identifier for each item in the collection. It helps Angular track the identity of each item and optimize the rendering and performance of the ngFor loop.

### **43. What is AOT compilation in Angular?**

AOT (Ahead-of-Time) compilation in Angular is a build process that converts Angular templates and components into highly efficient JavaScript code during the build phase. AOT compilation improves the application's performance by reducing the size and parsing time of the application code.

### **44. What is lazy loading in Angular routing?**

Lazy loading in Angular routing is a technique where modules and their associated components are loaded on-demand, only when they are needed. It allows you to split your application into smaller bundles and load them asynchronously, improving the initial loading time of the application.

#### **45. What is the purpose of ng-content in Angular?**

ng-content is a directive in Angular used for content projection. It allows you to pass content into a component from its parent component, enabling the creation of reusable and flexible components.

#### **46. What is the purpose of ng-template in Angular?**

ng-template is a directive in Angular used to define reusable templates that can be rendered conditionally or used as placeholders for dynamic content. It allows you to define a template once and use it in multiple places within your application.

#### **47. What is the purpose of ng-container in Angular?**

ng-container is a directive in Angular used as a grouping element. It provides a way to group multiple elements without adding an extra DOM element to the rendered output. It is commonly used in structural directives like \*ngIf or \*ngFor.

#### **48. What is tree shaking in Angular?**

Tree shaking is a process in Angular where the build system eliminates dead code (unused modules, functions, variables) from the final bundled JavaScript file. It helps reduce the size of the application bundle and improve performance.

#### **49. What is the purpose of Angular Universal?**

Angular Universal is a server-side rendering (SSR) solution for Angular applications. It allows you to render Angular applications on the server and deliver pre-rendered HTML to the browser, improving initial loading time, search engine optimization (SEO), and user experience.

#### **50. How can you enable production mode in Angular?**

To enable production mode in Angular, you can set the --prod flag when building or serving the application using the Angular CLI. For example:



ng build --prod

or

ng serve --prod

## **51. What are Angular guards?**

Angular guards are used to control access to routes and prevent unauthorized access to certain parts of an application. There are several types of guards in Angular, including CanActivate, CanActivateChild, CanDeactivate, and CanLoad.

## **52. What is Angular Material?**

Angular Material is a UI component library for Angular applications. It provides a set of pre-built, customizable UI components, such as buttons, forms, dialogs, and navigation components, to help streamline the development process.

## **53. What is the purpose of the ngClass directive in Angular?**

The ngClass directive is used in Angular to conditionally apply CSS classes to an element. It allows you to dynamically add or remove CSS classes based on certain conditions or properties.

## **54. What is the purpose of the ngStyle directive in Angular?**

The ngStyle directive is used in Angular to conditionally apply inline styles to an element. It allows you to dynamically set CSS properties and values based on certain conditions or component properties.

## **55. What is the purpose of the async pipe in Angular?**

The async pipe in Angular is used to subscribe to an Observable or Promise in the template and automatically update the view whenever the data emitted by the Observable or resolved by the Promise changes.

## **56. What is the purpose of the EventEmitter class in Angular?**

The EventEmitter class is used in Angular to implement a publish-subscribe pattern for communication between components. It allows components to emit events and other components to subscribe to those events and react accordingly.

## **57. What is an Angular module loader?**

An Angular module loader is responsible for loading Angular modules and their associated components, directives, services, and other dependencies. Examples of module loaders in Angular include SystemJS, webpack, and Angular CLI.

## **58. What is Angular Ivy?**

Angular Ivy is the next-generation rendering and compilation engine in Angular. It provides improved performance, smaller bundle sizes, enhanced debugging, and better build times compared to the previous View Engine.

## **59. What is the purpose of the ngZone service in Angular?**

The ngZone service in Angular is used to manage the execution context and change detection of an Angular application. It helps to optimize change detection and handle asynchronous tasks, such as event handling and API calls, within the Angular application.

## **60. What is an Angular service worker?**

An Angular service worker is a script that runs in the background and handles offline functionality, caching, and push notifications in Angular progressive web applications (PWAs). It enables the application to work offline and provides a seamless user experience.

## **61. What is the Angular router outlet?**

The router outlet is a directive in Angular used to define the placeholder where the content of a specific route should be rendered. It acts as a container for dynamically loading the components associated with different routes.

## **62. What is the difference between ngIf and hidden attribute in Angular?**

ngIf is a structural directive in Angular that conditionally adds or removes an element from the DOM based on a condition. The hidden attribute, on the other hand, is a standard HTML attribute that only hides an element visually but keeps it in the DOM.

## **63. What is the purpose of the trackBy function in Angular ngFor loop?**

The `trackBy` function is used in Angular's `ngFor` loop to provide a unique identifier for each item in a collection. It helps Angular track the identity of each item and optimize the rendering and performance of the `ngFor` loop.

#### **64. What is the difference between ViewEncapsulation and Shadow DOM in Angular?**

ViewEncapsulation is a feature in Angular that encapsulates component styles to avoid style conflicts between components. Shadow DOM, on the other hand, is a web platform feature that encapsulates the DOM and styles of an element, allowing for component-based encapsulation at the browser level.

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#### **67. What is the difference between ngOnInit and ngAfterViewInit lifecycle hooks?**

`ngOnInit` is a lifecycle hook that is called after the component has been initialized and its inputs have been resolved. `ngAfterViewInit` is a lifecycle hook that is called after the component's view has been initialized and rendered.

#### **68. What is Angular DI (Dependency Injection) hierarchy?**

Angular DI hierarchy refers to the order in which Angular resolves dependencies when injecting them into a component or service. The hierarchy follows the principle of injecting dependencies from the nearest injector in the component tree up to the root injector.

#### **69. What is the purpose of the ViewChildren decorator in Angular?**

The ViewChildren decorator is used in Angular to query and access multiple child elements or components within a parent component's view. It allows you to get references to child elements and interact with them programmatically.

#### **70. What is the difference between ViewChild and ContentChild in Angular?**

ViewChild is used to access a single child component or element within a parent component's view, while ContentChild is used to access a single projected element or component within a component's content projection.

#### **71. What is the difference between Renderer2 and ElementRef in Angular?**

Renderer2 is a service in Angular used for manipulating the DOM programmatically. It provides a platform-agnostic way to interact with the DOM and avoids direct access to the native DOM elements. ElementRef, on the other hand, is a wrapper around a native DOM element and provides direct access to the underlying DOM element.

#### **72. What is the difference between ngOnInit and ngOnChanges lifecycle hooks?**

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#### **74. What is the purpose of the Angular HttpClient module?**

The HttpClient module in Angular provides a way to make HTTP requests and interact with APIs from within an Angular application. It simplifies the process of making AJAX requests, handling request and response objects, and provides features like interceptors and error handling.

#### **75. What is the difference between ngOnInit and ngOnDestroy lifecycle hooks?**

ngOnInit is a lifecycle hook that is called after the component has been initialized and its inputs have been resolved. ngOnDestroy, on the other hand, is called just before the component is destroyed and removed from the DOM. It is used to clean up resources and unsubscribe from observables.

#### **76. What is the purpose of the @HostListener decorator in Angular?**

The @HostListener decorator is used in Angular to listen to events on the host element of a component. It allows you to define event handlers directly within the component and perform custom actions based on user interactions.

#### **77. What is the purpose of the Angular CLI command ng lint?**

The ng lint command in Angular CLI is used to run linting checks on the codebase using configured linting rules. It helps to enforce coding standards, detect potential errors, and ensure code consistency across the project.

#### **78. What is Angular Ivy?**

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