

# 🌐 Angular Interview Questions and Answers (1–50)

## 1. What is Angular?

**Answer:** Angular is a TypeScript-based open-source front-end web application framework developed by Google for building dynamic single-page applications (SPAs).

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

**Answer:** Components, TypeScript, Dependency Injection, Directives, Routing, Services, RxJS.

## 3. What is a component in Angular?

**Answer:** A component controls a part of the UI and consists of a template, class, and metadata.

## 4. How do you create a component in Angular?

**Answer:** Using CLI: `ng generate component component-name`

## 5. What is a module in Angular?

**Answer:** A module groups components, services, pipes, and other modules. The root module is `AppModule`.

## 6. What is the difference between components and modules?

**Answer:**

- Component: Controls a view
- Module: Organizes components and other code

## 7. What is data binding in Angular?

**Answer:** The mechanism to bind data between the component and the view. Includes:

- Interpolation
- Property Binding
- Event Binding
- Two-way Binding

## 8. What is two-way data binding?

**Answer:** It allows synchronization between the model and the view using `[(ngModel)]`.

## 9. What are directives in Angular?

**Answer:** Instructions in the DOM. Types:

- Structural (`*ngIf`, `*ngFor`)
- Attribute (`ngClass`, `ngStyle`)

## 10. What is the purpose of `ngIf` and `ngFor`?

**Answer:**

- `ngIf`: Conditionally includes/excludes elements
- `ngFor`: Iterates over a list

## 11. What is a service in Angular?

**Answer:** A reusable piece of logic that can be shared across components via Dependency Injection.

## 12. How do you create a service?

**Answer:** Using CLI: `ng generate service service-name`

## 13. What is Dependency Injection in Angular?

**Answer:** A design pattern where components are given their dependencies rather than creating them.

## 14. What is a lifecycle hook?

**Answer:** Methods called during component life (e.g., `ngOnInit`, `ngOnDestroy`).

## 15. What is `ngOnInit()`?

**Answer:** A lifecycle hook called after Angular initializes the component's data-bound properties.

## 16. What is routing in Angular?

**Answer:** Navigation mechanism to switch between views/components using `@angular/router`.

## 17. How do you enable routing?

**Answer:** Use `RouterModule` and define routes in `app-routing.module.ts`.

## 18. What is a router outlet?

**Answer:** A placeholder in the template where routed components are displayed.

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

**Answer:** Loading modules only when needed to improve performance.

## **20. What is a guard in Angular?**

**Answer:** A mechanism to control route access (`CanActivate`, `CanDeactivate`, etc.).

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

**Answer:** A command-line interface tool to create and manage Angular projects.

## **22. What command is used to create a new Angular project?**

**Answer:** `ng new project-name`

## **23. How do you run an Angular application?**

**Answer:** `ng serve`

## **24. What is interpolation in Angular?**

**Answer:** Binding data from the component to the view using `{{ expression }}`.

## **25. What is property binding?**

**Answer:** Binding DOM properties using `[property]="expression"`.

## **26. What is event binding?**

**Answer:** Handling user actions using `(event)="handler()"`.

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

**Answer:** A pipe transforms data in the template (e.g., `date`, `uppercase`, `custom`).

## **28. How do you create a custom pipe?**

**Answer:** Implement `PipeTransform` and use `@Pipe` decorator.

## **29. What is the purpose of `ngModel`?**

**Answer:** Binds form input fields to component properties using two-way binding.

## **30. What are template-driven and reactive forms?**

**Answer:**

- Template-driven: Easy to use, uses directives
- Reactive: More control, uses FormGroup/FormControl

### **31. What is a FormGroup?**

**Answer:** A group of FormControls that tracks form state and validity.

### **32. What is a FormControl?**

**Answer:** Tracks value and validation status of an individual form element.

### **33. What are observables in Angular?**

**Answer:** Part of RxJS used for handling asynchronous data streams.

### **34. What is RxJS?**

**Answer:** Reactive Extensions for JavaScript – a library for reactive programming using observables.

### **35. What is the purpose of the `subscribe()` method?**

**Answer:** To execute and listen to observable changes.

### **36. What is the difference between observable and promise?**

**Answer:**

- Observable: Multiple values over time, cancellable
- Promise: Single value, not cancellable

### **37. What are Angular decorators?**

**Answer:** Functions that add metadata to classes and members (`@Component`, `@NgModule`).

### **38. What is `@Input()` and `@Output()`?**

**Answer:**

- `@Input()`: Pass data from parent to child
- `@Output()`: Emit events from child to parent

### **39. How do you communicate between components?**

**Answer:** Using `@Input`, `@Output`, shared services, or `BehaviorSubject`.

### **40. What is a resolver in Angular?**

**Answer:** Pre-fetches data before the route is activated.

#### **41. What is Ahead-of-Time (AOT) compilation?**

**Answer:** Compiles Angular HTML and TypeScript code into JS before the browser loads it.

#### **42. What is difference between AOT and JIT?**

**Answer:**

- AOT: Compilation at build time
- JIT: Compilation at runtime

#### **43. What is change detection?**

**Answer:** Angular's mechanism to update the view when the model changes.

#### **44. What is trackBy in \*ngFor?**

**Answer:** Improves performance by tracking items using unique identifiers.

#### **45. How to handle HTTP requests in Angular?**

**Answer:** Using `HttpClient` from `@angular/common/http`.

#### **46. What are HttpInterceptors?**

**Answer:** Intercept and modify HTTP requests or responses globally.

#### **47. What is the async pipe?**

**Answer:** Automatically subscribes to observables and unsubscribes when the component is destroyed.

#### **48. What are schematics in Angular CLI?**

**Answer:** Code generators like `ng generate component`, `ng generate service`.

#### **49. What is ngZone in Angular?**

**Answer:** A service that helps Angular detect and respond to async operations for change detection.

#### **50. What are best practices in Angular?**

**Answer:**

- Use lazy loading

- Organize code using modules
- Use services for business logic
- Avoid logic in templates
- Use strong typing and linting