

Angular Interview Questions - Coding Interview

Section 1: Introduction

- Typescript and RxJS sections are important (educational)

Section 2: Typescript

- Typescript pros and cons (educational)
- How to create Typescript interface?
 - Q1: Define a `UserInterface` with `id: string`, `name: string`, `age: number` and method `getMessage` that returns `string`.
 - Q2: Write a usage example of this interface
- How to define Typescript array?
 - Q1: How to define an array in Typescript? Show all ways
 - Q2: How to define an array of numbers and strings?

- What is type assertion in Typescript?
 - Q1: What is type assertion?
 - Q2: How to fix this code?

```
const getItem = (item: number | undefined) => {  
  return item.toString();  
}
```

- What is void and unknown in Typescript?
 - Q1: What is void type? Write an example
 - Q2: What is unknown type? Write an example
- Create function annotation in Typescript
 - Q1: Create a `UserInterface` with `id: string`, `name: string`, `age: number` and method `getMessage` that returns `string`.
 - Q2: Create `ProfileInterface` with `name`, `profileUrl`, `isActive`
 - Q3: Create function which transforms `UserInterface` to `ProfileInterface`. The `profileUrl` is `/profile/${name}`
 - Q4: Add optional parameter `isActive`. Profile must be active if parameter is not provided
- What is the purpose of `tsconfig.json`?
 - Q1: What is `tsconfig.json`?
 - Q2: What does this options do? `target`, `module`, `moduleResolution`, `noImplicitAny`.
- What is elvis operator in Typescript?
 - Q1: What is an elvis operator?
 - Q2: Write a common use case of elvis operator.
- Why `any` is bad in Typescript?
 - Q1: Why `any` type is bad?
- What are enums in Typescript?
 - Q1: What is an enum?
 - Q2: Write an enum example
 - Q3: Why are they so good?

- How to create custom types in Typescript?
 - Q1: How to create a custom type?
 - Q2: When does it make sense?
- What are generics in Typescript?
 - Q1: What are generics in Typescript?

Section 3: RxJS

- What are pros and cons of RxJS?
 - Q1: What is RxJS?
 - Q2: What are pros and cons of RxJS?
 - Q3: Why RxJS is important for Angular?
- How to transform data in RxJS?
 - Q1: You get such UserInterface. Define a function normalizeUsers which gets a parameter users\$ which is an observable of UserInterface array and returns back an array of names as an observable.

```
interface UserInterface {
  id: string;
  name: string;
  age: number
}
```

- Q2: How RxJS map differs from Javascript map?
- How filter works in RxJS?
 - Q1: Write an example of RxJS filter
 - Q2: How it differs from Javascript filter?
- How to implement error handling in RxJS?
 - Q1: Create an Observable and add error handling to it
 - Q2: How will you write subscribe to be ready for an error?
- How does combineLatest operator work in RxJS?
 - Q1: Do you know combineLatest method?
 - Q2: Can you write an example?
- How Subject and BehaviorSubject work in RxJS?
 - Q1: What is BehaviorSubject?
 - Q2: What is the most common use case for BehaviorSubject in Angular?
 - Q3: How it differs from Subject?
- Observables vs Promises - what is the difference?
 - Q1: What is the difference between observables and promises?
 - Q2: What to use in Angular?
- Cold vs hot observables - what is the difference?
 - Q1: What are cold and hot observables?
- ConcatMap vs SwitchMap vs MergeMap vs Map vs ExhaustMap in RxJS
 - Q1: What is the difference between map, flatMap, mergeMap, concatMap, switchMap, exhaustMap

Section 3: Angular

- What is SPA?
 - Q1: What is SPA?

- Q2: How it is difference to server side rendering?
- Q3: What are pros and cons of SPA?
- What are pros and cons of Angular compared to React?
 - Q1: What are Angular pros and cons?
 - Q2: How it is compared to React?
- How does Angular work?
 - Q1: How does Angular work from files perspective? In what file it starts loading, what files are loaded next?
- Sharing data between components in Angular
 - Q1: How you can share your data between 2 different components?
- What ways of binding in Angular do you know?
 - Q1: What ways of binding data exist in Angular?
 - Q2: Write examples
- What is HTML in Angular?
 - Q1: What is HTML in Angular?
- What are services in Angular?
 - Q1: What are services in Angular?
 - Q2: Write a DatesService with methods getTomorrow(), getYesterday(), getToday()
- How to make HTTP Request in Angular?
 - Q1: You have an interface User with id, name age. Create a UsersService and getUsers method which makes a get request to <http://localhost:3004/users> and returns a users stream
 - Q2: Write the code to get this data in component
- How does dependency injection work?
 - Q1: What is dependency injection in Angular?
 - Q2: How does it work?
- How to use a router in Angular?
 - Q1: How to add routing to the application?
 - Q2: When global routing can be bad?
 - Q3: What is router-outlet?
 - Q4: How to create router link?
- What are life cycle hooks in Angular?
 - Q1: What are life cycle hooks?
 - Q2: When are they called?
- What are ViewChild and ViewChildren in Angular?
 - Q1: Write an example of ViewChild
 - Q2: Write an example of ViewChildren
- Constructor vs NgOnInit in Angular - what is the difference?
 - Q1: What is the difference between constructor and ngOnInit?
 - Q2: What should we use?
- Unsubscribe in Angular - why is it important?
 - Q1: What is unsubscribe?
 - Q2: Why is it important?
 - Q3: What are the ways to unsubscribe?
- What are change detection and onPush in Angular?
 - Q1: What is change detection?
 - Q2: How does onPush work?

- Q3: Why onPush is important?
- Null in async pipe - what is the problem here?
 - Q1: How to fix this error in the code? (see video)
- How to handle errors in async pipe in Angular
 - Q1: How to handle errors in async pipe?
- What is the difference in ngContainer, ngTemplate, ngContent, ngTemplateOutlet?
 - Q1: What is ng-container?
 - Q2: What is ng-template?
 - Q3: What is ng-content?
 - Q4: What is ng-template-outlet?
- How to create an Angular animation?
 - Q1: When to use Angular animations and not CSS animation?
 - Q2: How to animate the following example?

```
<button (click) ="fadeInOut()">Fade in / out</button>
<div *ngIf="isShown">This is a block with fade in / out</div>
```

- How as keyword works in Angular?
 - Q1: What is as keyword?
 - Q2: What does it do?
 - Q3: Did you use it with combineLatest?
- AOT vs JIT compilation - what is the difference?
 - Q1: What is AOT and JIT compilation?
 - Q2: What is the difference?
- Component vs Directive - what is the difference?
 - Q1: What is the difference between component and directive?
- Structural directive vs component directive vs attribute directive
 - Q1: What is the difference between structural directives and component directives?
- Create a directive which changes the background of the element
 - Q1: Create a directive which changes the background of the element
- How do pipes in Angular work?
 - Q1: What are pipes?
 - Q2: What build in pipes do you know?
 - Q3: Create a simple pipe
- Why is it bad to call a function in the Angular template?
 - Q1: Why is it bad to call a function in template?
- What is Angular Ivy?
 - Q1: What is Angular Ivy?
- What is Angular interceptor?
 - Q1: Why do we need interceptors?
 - Q2: Write an example of interceptor
- What is Angular generator?
 - Q1: How to use generators?
- How to protect Angular route from accessing?
 - Q1: What are Angular guards?
 - Q2: Write an example of code to protect a route with both sync and async ways

- What is lazy loading in Angular?
 - Q1: How to load module on demand? (lazy loading)
 - Q2: What are the benefits?
- What is forRoot in Angular?
 - Q1: Write an example how to inject a module with some configuration
- What is SSR in Angular or Service Side Rendering?
 - Q1: What is Angular SSR?
 - Q2: What are pros and cons of SSR?
- What is ngZone in Angular?
 - Q1: How to execute code outside Angular change detection?
 - Q2: When does it make sense?
 - Q3: Write a small example
- How do Angular forms work?
 - Q1: What forms do we have in Angular?
 - Q2: How do they differ?
- How to fix Angular input has no initializer error?
 - Q1: How to fix this error (see video)
- NgRx - what is this and how does it work?
 - Q1: Are you familiar with Redux or NgRx?
- Angular Inject
 - Q1: How to use inject in Angular?
 - Q2: What are the benefits?
- Angular standalone components
 - Q1: How to use standalone components?
 - Q2: What are the benefits?
- Angular signals
 - Q1: How to use Angular Signals?
 - Q2: What are the benefits?