

1. Briefly explain what Angular is and its various uses.

Angular is an open-source, front-end web application framework primarily maintained by Google, alongside a community of contributors. It is written in TypeScript and is the successor to AngularJS, which was based on JavaScript. Angular is part of the MEAN stack, which stands for MongoDB, Express.js, Angular, and Node.js. It is a Javascript based framework that is suitable for large projects. It is more opinionated than frameworks like React and is more suited for complex user interfaces. It comes out of the box with many features built into the framework. Angular works directly on the DOM unlike other frameworks like React which use the virtual DOM to make changes.

2. Describe the key differences between TypeScript and JavaScript.

Typescript allows static typing built on top of Javascript, whereas Javascript is a dynamically typed based language. Direct TypeScript code cannot be executed in browsers. It must first be transpiled to JavaScript, while JavaScript can be directly run in browsers. TypeScript provides advanced Object-Oriented Programming features, like interfaces, generics, and decorators, which aren't natively available in JavaScript

3. What are some advantages of using TypeScript?

Typescript gives better error handling, for example it catches typos before runtime because of the static typing. It gives better autocompletion since the available variables are already known. It allows having generic typed functions which gives a way to have reusable code that can handle different types of inputs. The type annotations in TypeScript can serve as a form of documentation, making the codebase more understandable for other developers. For larger projects, TypeScript's features can make the code more structured and maintainable, making it easier to scale. TypeScript is a superset of JavaScript, meaning that any valid JavaScript code is also valid TypeScript. This ensures that existing JavaScript projects can be gradually migrated to TypeScript.