Q1. What is AngulaaJS and what are some of its advantages?

Ans. AngulaaJS is a popular open-source framework that simplifies web development by creating interactive single-page applications (SPAs).

- Unlike traditional websites that load new pages for each click, SPAs offer a smoother user experience by updating content on the same page.

Advantages of AngulaaJS:-

1. Two-way data binding
- Automatically synchronizes data between the model and the view, reducing boilerplate code and improving efficiency.

2. MVC architecture:-
- Implements model-view-Controller (MVC) architecture, separating concerns and making the application more maintainable.

3. Dependency Injection (DI):-
- Built-in dependency injection simplifies the management of components and services, improving testability and modularity.

4. Directives and Custom components.
- Allows the creation of reusable components and directives, enhancing code reusability and maintainability.

5. Built in Services:-
- Includes essential services like $http for AJAX calls, $route for routing, and $scope for data binding

Q2. Explain the difference between a factory and a service in Angular JS.

Ans.

Feature	Factory	Service
1. Definition	• A function that returns an object or function	• A constructor function that is instantiated using new.
2. Usage	• Used to create and return an object, which can contain properties and methods.	• Used to define a constructor function, and angular JS creates an instance of it.
3. Instance Creation	• Manually creates and returns an object.	• AngularJS instantiates the service using new.
4. this context	• Not used, as it returns an object directly	• Uses this to define properties and methods.
5. Performance	• Slightly better performance since it does not require instantiation.	• Slightly slower as it requires instantiation.
6. Syntax	app. Factory ('my Factory', function() { return { key: value }; });	app. Service ('my Service', function() { this. key = value ; });

Q.3 Explain AngularJS built-in directives?

Ans. AngularJS built-in directives are special attributes or elements that extend HTML's functionality allowing developers to manipulate the DOM and create dynamic web-applications.

- They include:-

1. ng-app
- Initializes an AngularJS application, defining the root element of the application.

2. ng-model
- Binds the value of HTML input elements (like <input>, <select>, <textarea>) to variables on the AngularJS scope, enabling two-way data binding.

3. ng-bind:
- Replaces the content of an HTML element with the value of an expression.

4. ng-repeat:
- Repeats an HTML element for each item in a collection (array or object), creating dynamic lists or tables.

5. ng-show:
- Shows or hides an HTML element based on the truthiness of an expression.

6. ng-hide:
- Hides an HTML element based on the truthiness of an expression (opposite of ng-show)

Q4. How to use AngularJS filters and expression to format and display data?

Ans. In AngularJS, filters and expressions are used to format and display data dynamically within the view.

2. Filter allow you to transform data, while expression bonds and display data.

3. Filters format the data displayed in the view They are used within expressions ({{ }})

1. Currency:
   - Formats a number as currency
   - {{ price | currency : "$" }}

2. date
   - Formats a date
   - {{ current Date | date : "full Date" }}

3. upper case / lower case
   - Converts text to upper case or lower case.
   - {{ name | upper case }}

→ Expressions
   - Expressions in AngularJS bond data to the view using syntax {{ expression }}.
   - They can perform calculations or access scope variables.

1. Basic Data bonding
   {{ first Name + " " + LastName }}

2. Arithmetic Operations:
   {{ 10 + 20 }}

3. Using filters with expressions
   {{ price | currency : "$" }}

Q5 What are Single Page Applications (SPA) and Routing in Angular JS?

Ans → Single Page Applications (SPA)

- An SPA is a web application that loads a single HTML page and dynamically updates the content as the user interacts with the app.
- Unlike traditional multi-page applications, SPA's do not require full page reloads; instead, they use Javascript to update the UI efficiently.

→ key features :-

1. Fast performance:
   - Only necessary content is updated, reducing page reload times.
2. Client side rendering:
   - Uses angularJS to manipulate the DOM and display content dynamically.
3. Improved user experience:
   - Feels more like a desktop application.
4. Efficient data binding
   - Uses AngularJS two-way data binding for seamless UI updates.

→ Routing in Angular JS.

- Routing in AngularJS is the mechanism that enables SPA's to navigate between different views or components without reloading the entire page.
- It allows users to access different parts of the application using URL's.