AWP Presentation

Date: 27/2/2023

AngularJS Presentation:

Introduction of AngularJS

Key points:

1. Basic info of AngularJS
2. MVC architecture
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4. AngularJS v/s JS
5. Advantages and disadvantages

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1. Basic info of AngularJS

- AngularJS is a JavaScript-based front-end web application framework.
- In simpler words, it's a tool that developers use to create web applications.
- AngularJS uses an MVC (Model-View-Controller) architecture.
- It is a use for building single-page applications (SPAs) that require dynamic updates without page reloads.
- It allows you to extend HTML syntax with new attributes called directives, which can be used to bind data to HTML elements, create dynamic views, and more.
- you can think of directives as extended HTML attributes that allow you to add custom behaviour or functionality to your HTML elements.
- Overall, AngularJS makes it easier for developers to create responsive and dynamic web applications with less code and effort.
- It was developed by Google and released in 2010.

MVC Architecture:

The **Model-View-Controller(MVC)** framework is an architectural/design pattern that separates an application into three main logical components **Model**, **View**, and **Controller**. Each architectural component is built to handle specific development aspects of an application.
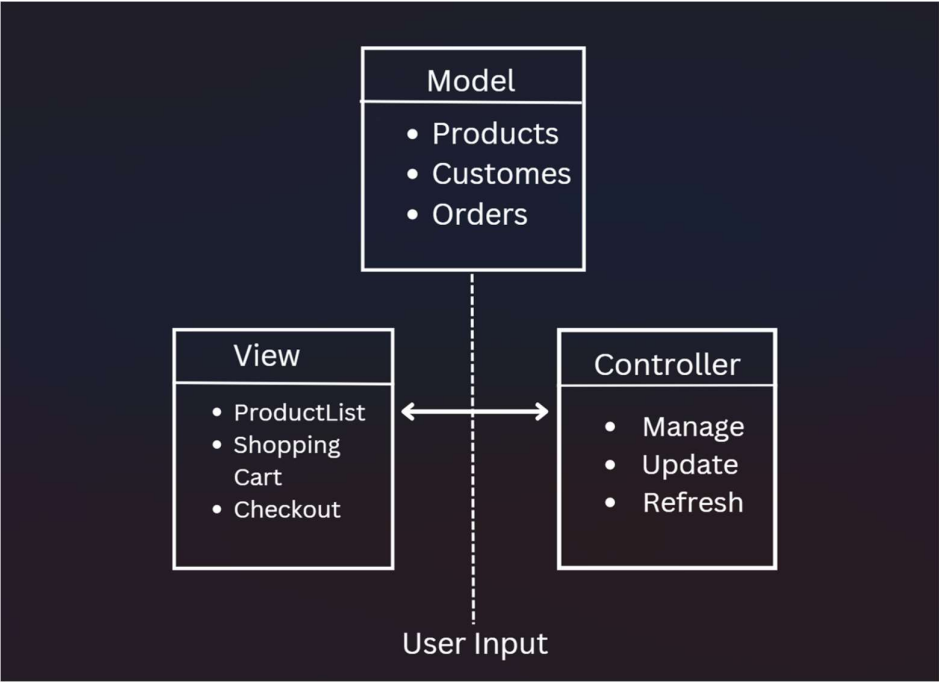
- Model:

    The model component would be responsible for managing the data, such as the list of products, customer data, and order information. The model might store this data in a database or other data storage system.

- View:

    The view component would be responsible for presenting the data to the user in a way that is easy to understand and interact with. In the case of an e-commerce website, the view might be a web page or mobile app that allows the user to browse products, add items to their shopping cart, and complete their purchase.

- Controller:

    The controller component would be responsible for managing the flow of the website and mediating the interaction between the model and the view. For example, when a user adds an item to their shopping cart, the controller might receive the input from the view and update the model with the new order information.

Basic program in AngularJS:

```html
<!DOCTYPE html>
<html ng-app="">
<head>
  <meta charset="utf-8">
  <title>Hello World Example</title>
  <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.8.2/angular.min.js"></script>
</head>
<body>
  <h1 ng-init="message = 'Hello, World!'">{{ message }}</h1>
</body>
</html>
```

- **<html ng-app="">**: This is the opening **html** tag, with the **ng-app** directive specifying that this is an AngularJS application.
- **<script src= "……"> </script>** This is a script tag that includes the AngularJS library. This is necessary in order to use AngularJS in the document.
- **<h1 ng-init="message = 'Hello, World!'">{{ message }}</h1>**
  This is an **h1** element that uses the **ng-init** directive to set the value of the **message** variable to "Hello, World!". The double curly braces (**{{ }}**) are used to display the value of the **message** variable within the **h1** element.

AngularJS v/s JavaScript

- JavaScript is a client-side scripting language as well as a server-side scripting language for creating web applications. AngularJS is a framework written in JS to build single-page applications.
- One of the main advantages of using AngularJS is that it provides a structured and organized approach to building web applications. JavaScript is more general-purpose language that can be used for a wide range of programming tasks, not just web development. While it is still used extensively for web development.
- JavaScript is a full-featured language used to manipulate DOM. While AngularJS extends HTML with new attributes along with other web technologies.
- AngularJS as an extension of JavaScript that provides additional tools and features to help you build more advanced web applications. While both AngularJS and JavaScript have some similarities in syntax.
- In summary, while both AngularJS and JavaScript are used for web development, AngularJS is a specialized framework that provides additional tools and features for building complex web applications, while JavaScript is a general-purpose language that is widely used for web development and other programming tasks.

Advantages:

1. Two-way data binding: AngularJS provides two-way data binding, which means any changes made to the model are automatically reflected in the view, and vice versa. This makes it easier to create dynamic web applications.

2. Directives: AngularJS provides directives, which are reusable HTML components that can be used to add behaviour to elements in the DOM. This makes it easier to create complex applications and helps to keep code organized.

3. MVC architecture: AngularJS follows the Model-View-Controller (MVC) architecture, which separates the application logic, user interface, and data. This makes it easier to maintain and test code.

4. Large community and support: AngularJS have a large community of developers, which means that there are plenty of resources available for learning and troubleshooting issues.

5. Easy to learn and use: AngularJS is relatively easy to learn and use, even for developers who are new to web development.

6. Better performance: AngularJS is designed to work efficiently with large datasets and complex applications, which means that it can provide better performance than other frameworks.

7. Reusable components.

These are just a few of the advantages of using AngularJS for web development.

Disadvantages:

1. Limited support for mobile devices: AngularJS may not be the best choice for mobile applications, as its performance and user interface may not be optimized for mobile devices.

2. Limited backward compatibility: AngularJS versions are not always backward compatible, which means that upgrading to a new version can sometimes require significant code changes.

3. Limited SEO: Because AngularJS is primarily a client-side framework, it can sometimes have limited search engine optimization (SEO) capabilities.

4. Large size: AngularJS can have a large file size, which can be a concern for applications that need to load quickly.

5. AngularJS with a back-end system can be a complex task.