

# AngularJS Controllers

Topics : [AngularJS](#)

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In AngularJS, controllers play a crucial role in the Model-View-Controller (MVC) architecture. Controllers are responsible for managing the application's logic, handling user input, and interacting with the model to update the view. They act as a bridge between the model (data) and the view (user interface).

## 1. Controller Definition:

- **Description:** Controllers are defined using the `controller` function provided by AngularJS. They are attached to specific portions of the HTML using the `ng-controller` directive.

- **Example:**

```
angular.module('myApp').controller('MyController', function($scope) {  
  // Controller logic goes here  
});
```

## 2. Scope:

- **Description:** Controllers interact with the view through a special object called the scope. The scope is an execution context for expressions, and changes made to the scope are automatically reflected in the view.

- **Example:**

```
angular.module('myApp').controller('MyController', function($scope) {  
  $scope.message = 'Hello, Angular!';  
});
```

In this example, the `message` variable on the scope can be accessed in the associated HTML template.

## 3. Dependency Injection:

- **Description:** Controllers can receive dependencies through dependency injection. Common dependencies include services, which handle business logic and data manipulation.

- **Example:**

```
angular.module('myApp').controller('MyController', function($scope, myService) {
  $scope.data = myService.getData();
});
```

#### 4. Handling User Input:

- **Description:** Controllers handle user interactions such as button clicks, form submissions, and other events. They define functions on the scope to be called in response to user actions.
- **Example:**

```
angular.module('myApp').controller('MyController', function($scope) {
  $scope.handleClick = function() {
    // Logic to handle button click
  };
});
```

In the associated HTML template:

```
<button ng-click="handleClick()">Click me</button>
```

#### 5. Controller As Syntax:

- **Description:** AngularJS supports the "controller as" syntax, allowing you to assign a controller instance to a variable in the view. This syntax is useful for avoiding scope-related issues.
- **Example:**

```
angular.module('myApp').controller('MyController', function() {
  this.message = 'Hello, Angular!';
});
```

In the associated HTML template:

```
<div ng-controller="MyController as ctrl">
  {{ ctrl.message }}
</div>
```

#### 6. Controller Lifecycle:

- **Description:** Controllers have a lifecycle, and AngularJS provides hooks such as `controller` and `link` for performing actions during different stages of the controller's life.
- **Example:**

```
angular.module('myApp').controller('MyController', function($scope) {
  // Initialization logic

  $scope.$on('$destroy', function() {
    // Cleanup logic when the controller is destroyed
  });
});
```

});

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