Angular JS
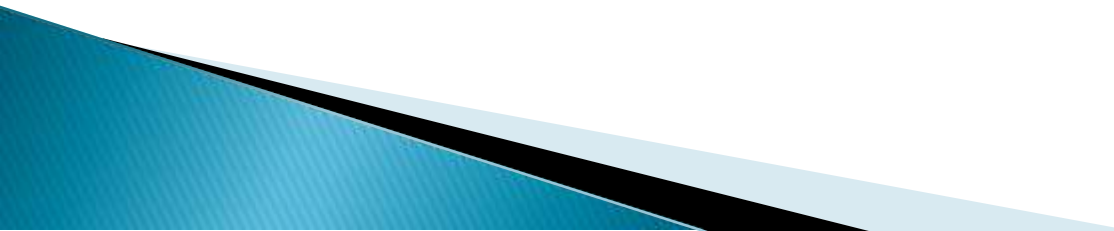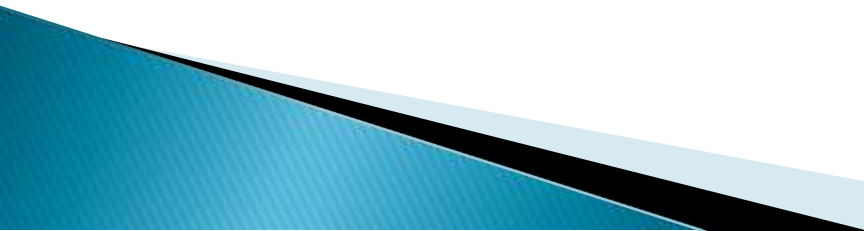
Introduction

- **Angular JS** is a very powerful JavaScript Framework.
- It is used in Single Page Application (SPA) projects.
- It extends HTML DOM with additional attributes and makes it more responsive to user actions.
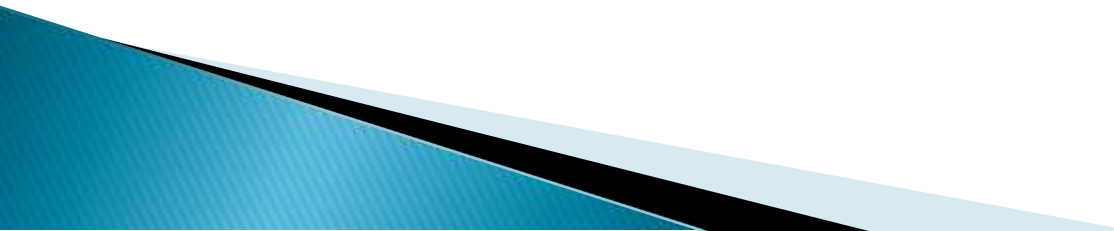- Angular JS is open source, completely free, and used by thousands of developers around the world.

- Angular JS is a efficient framework that can create Rich Internet Applications (RIA).
- Angular JS provides developers an options to write client side applications using JavaScript in a clean Model View Controller (MVC) way.
- Applications written in Angular JS are cross-browser compliant.
- Angular JS automatically handles JavaScript code suitable for each browser.
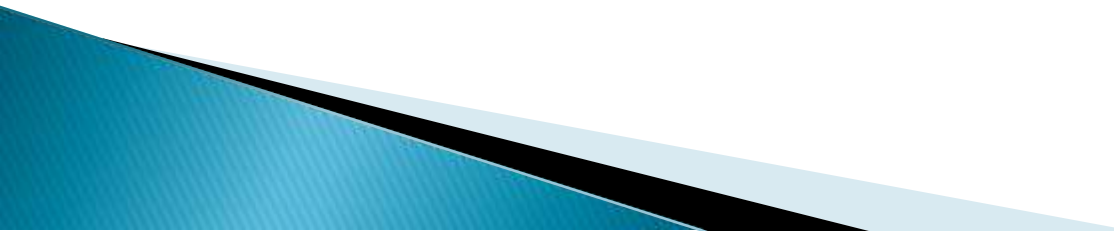- Angular JS is open source, completely free, and used by thousands of developers around the world.

Angular JS is a JavaScript Framework

▸ AngularJS is a JavaScript framework written in JavaScript.

▸ AngularJS is distributed as a JavaScript file, and can be added to a web page with a script tag

```
<script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.6.9/angular.min.js">
</script>
```

Angular JS Extends HTML

- AngularJS extends HTML with **ng-directives**.
  - The **ng-app** directive defines an Angular JS application.
  - The **ng-model** directive binds the value of HTML controls (input, select, textarea) to application data.
  - The **ng-bind** directive binds application data to the HTML view.

▸ Angular JS starts automatically when the web page has loaded.

◦ The **ng-app** directive tells Angular JS that the <div> element is the "owner" of an Angular JS **application**.

◦ The **ng-model** directive binds the value of the input field to the application variable **name**.

◦ The **ng-bind** directive binds the content of the <p> element to the application variable **name**.

```
<!DOCTYPE html>
<html>
<script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.6.9/
angular.min.js"></script>
<body>

<div ng-app="">

<p>Input something in the input box:</p>
<p>Name: <input type="text" ng-model="name"></p>
<p>{{name}}</p>

</div>

</body>
</html>
```
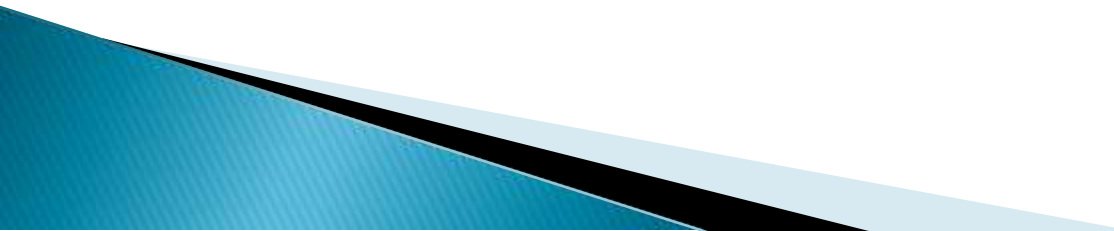
Angular JS Expressions

- Angular JS expressions can be written inside double braces: {{ *expression* }}.
- Angular JS expressions can also be written inside a directive: ng-bind="*expression*".
- Angular JS will resolve the expression, and return the result exactly where the expression is written.
- **AngularJ S expressions** are much like **JavaScript expressions**: They can contain literals, operators, and variables.
- Example {{ 5 + 5 }} or {{ firstName + " " + lastName }}

```
<!DOCTYPE html>
<html>
<script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.
6.9/angular.min.js"></script>
<body>

<div ng-app="">
<p>My first expression: {{ 5 + 5 }}</p>
</div>

</body>
</html>
```

- You can write expressions wherever you like, AngularJS will simply resolve the expression and return the result.
- Example: Let AngularJS change the value of CSS properties.
- Change the color of the input box below, by changing its value

- AngularJS expressions bind AngularJS data to HTML the same way as the **ng-bind** directive.

```
<!DOCTYPE html>
<html>
<script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.6.9/an
gular.min.js"></script>
<body>

<div ng-app="">

<p>Input something in the input box:</p>
<p>Name: <input type="text" ng-model="name"></p>
<p>{{name}}</p>

</div>

</body>
</html>
```

```
<!DOCTYPE html>
<html>
<script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.6.9/angul
ar.min.js"></script>
<body>

<p>Change the value of the input field:</p>

<div ng-app="" ng-init="myCol='lightblue'">

<input style="background-color:{{myCol}}" ng-model="myCol">

</div>


</body>
</html>
```

AngularJS Numbers, Strings

▸ AngularJS numbers are like JavaScript numbers

```
<div ng-app="" ng-
init="quantity=1;cost=5">
<p>Total in dollar: {{ quantity * cost
}}</p>
</div>
```

```
<div ng-app="" ng-
init="quantity=1;cost=5">

<p>Total in dollar: <span ng-
bind="quantity * cost"></span></p>

</div>
```

AngularJS Objects

```html
<div ng-app="" ng-
init="person={firstName:'John',lastName:'Doe'}">

<p>The name is {{ person.lastName }}</p> </div>
```

```html
<div ng-app="" ng-
init="person={firstName:'John',lastName:'Doe'}">

<p>The name is <span ng-
bind="person.lastName"></span></p>

</div>
```

AngularJS Arrays

```
<div ng-app="" ng-init="points=[1,15,19,2,40]">

<p>The third result is {{ points[2] }}</p>

</div>
```

```
<div ng-app="" ng-init="points=[1,15,19,2,40]">

<p>The third result is <span ng-bind="points[2]"></span></p>

</div>
```
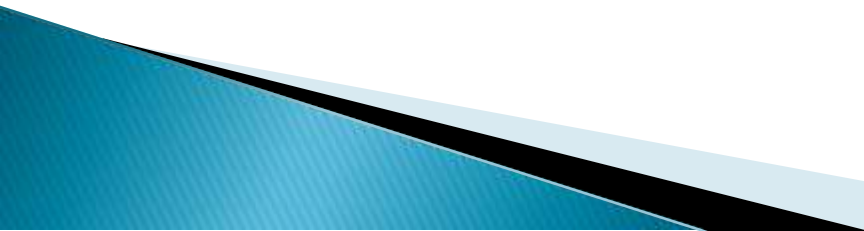
Angular JS Expressions vs. JavaScript Expressions

- Like JavaScript expressions, Angular JS expressions can contain literals, operators, and variables.

- Unlike JavaScript expressions, Angular JS expressions can be written inside HTML.

- Angular JS expressions do not support conditionals, loops, and exceptions, while JavaScript expressions do.

- Angular JS expressions support filters, while JavaScript expressions do not.

Angular JS Applications

- AngularJS **modules** define AngularJS applications.
- AngularJS **controllers** control AngularJS applications.
- The **ng-app** directive defines the application, the **ng-controller** directive defines the controller.