



Session 5

Form Validation and AngularJS Animations





Session Overview

In this session, you will be able to:

- Explain form validation with AngularJS
- Describe Form states and Input states
- Use Angular Animations
- Use CSS classes for Angular Animations

For Aptech Centre Use Only





Forms Validation

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Introduction to Forms Validation

- Forms are the major way users communicate with the apps we develop and are an important mechanism of modern Websites and applications.
- They are used to collect data from the users.
- The data collected by the form is validated before sending it to the server.
- AngularJS continuously oversees the status of the form and their input fields such as input, textarea, select and help us advise the user about the current state.



Required

We use the HTML5 attribute 'required' to specify that the input field must be filled out.

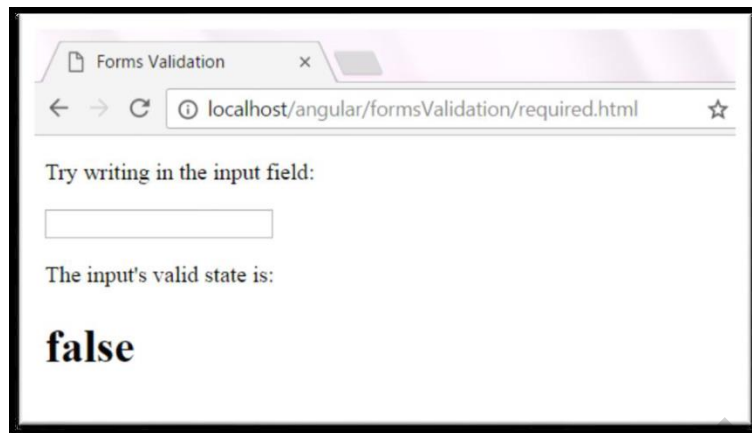
```
1.<!DOCTYPE html>
2.<html>
3.<title>Forms Validation</title>
4.<script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js"><
/scrip>
5.<body ng-app="">
6.<p>Try writing in the input field:</p>
7.<form name="myForm">
8. <input type="text" name="myInput" ng-model="myInput" required>
9.</form>
10.<p>The input's valid state is:</p>
11.<h1>{{myForm.myInput.$valid}}</h1>
12.</body>
13.</html>
```

Required - Example Code

Forms Validation

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Required



Forms Validation

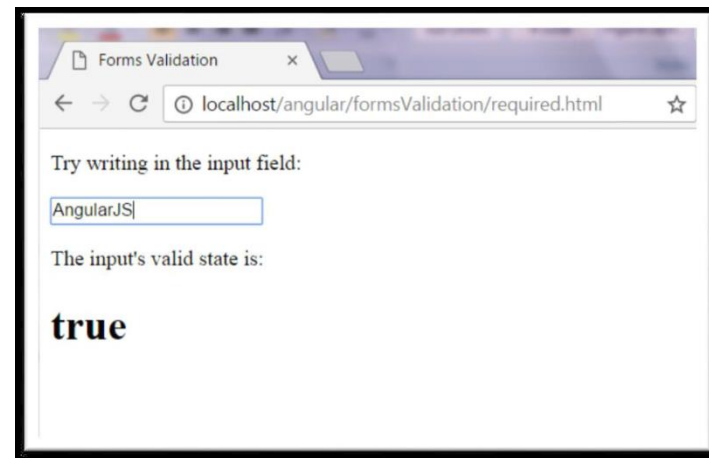
localhost/angular/formsValidation/required.html

Try writing in the input field:

The input's valid state is:

false

Required - Example Initial Output



Forms Validation

localhost/angular/formsValidation/required.html

Try writing in the input field:

The input's valid state is:

true

Required - Example after Adding Input

Email

We use the HTML5 type email to specify that the value must be an e-mail.

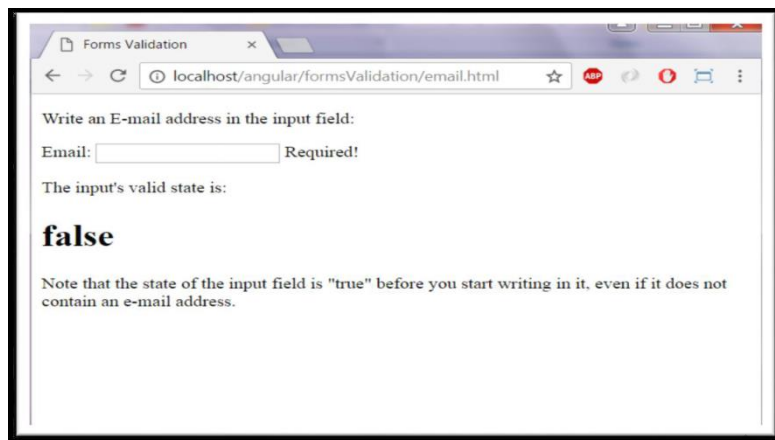
```
1.<!DOCTYPE html>
2.<html>
3.<script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js">
</script>
4.<body ng-app="">
5.<p>Write an E-mail address in the input field:</p>
6.<form name="myForm1">
7.<input type="email" name="myInput" ng-model="myInput">
8.</form>
9.<p>The input's valid state is:</p>
10.<h1>{{myForm1.myInput.$valid}}</h1>
11.<p>Note that the state of the input field is "true" before you start writing in it,
even if it does not contain an e-mail address.</p>
12.</body>
13.</html>
```

email- Example Code

Forms Validation

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Email



Forms Validation

Write an E-mail address in the input field:

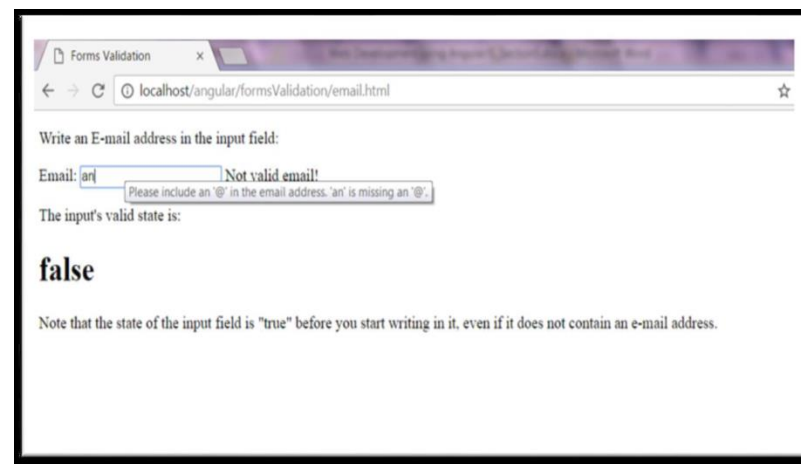
Email: Required!

The input's valid state is:

false

Note that the state of the input field is "true" before you start writing in it, even if it does not contain an e-mail address.

Email- Example Initial Screen



Forms Validation

Write an E-mail address in the input field:

Email: Not valid email!

Please include an '@' in the email address. 'an' is missing an '@'.

The input's valid state is:

false

Note that the state of the input field is "true" before you start writing in it, even if it does not contain an e-mail address.

Required - Example after Adding Input

Forms Validation

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Email



Forms Validation x

localhost/angular/formsValidation/email.html

Write an E-mail address in the input field:

Email: Not valid email!

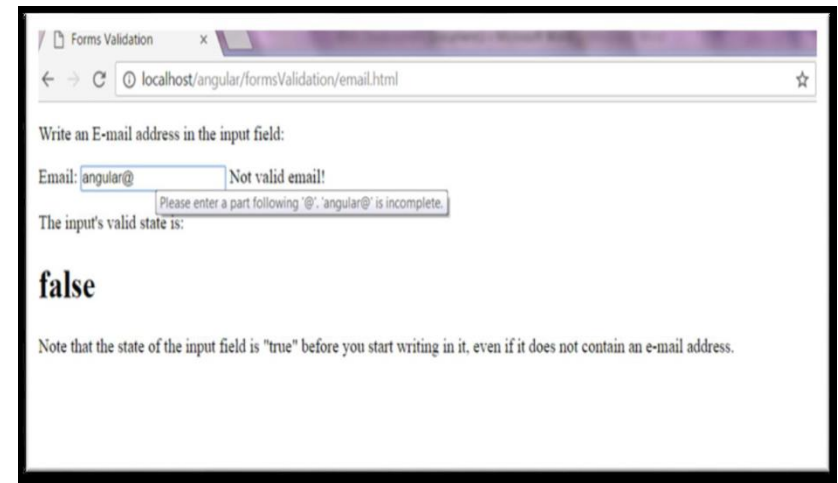
Please include an '@' in the email address. 'an' is missing an '@'.

The input's valid state is:

false

Note that the state of the input field is "true" before you start writing in it, even if it does not contain an e-mail address.

Email- Example after part input



Forms Validation x

localhost/angular/formsValidation/email.html

Write an E-mail address in the input field:

Email: Not valid email!

Please enter a part following '@'. 'angular@' is incomplete.

The input's valid state is:

false

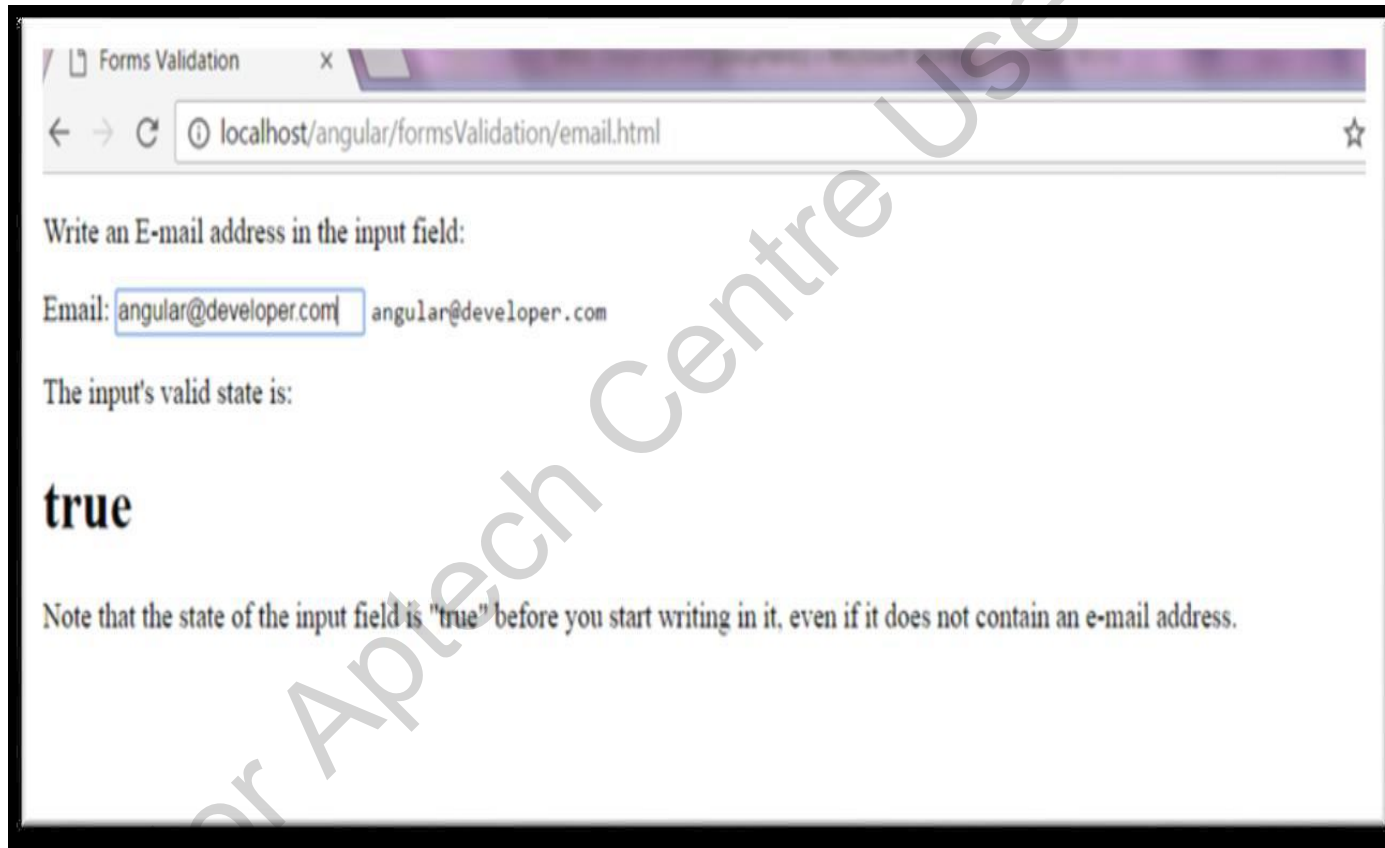
Note that the state of the input field is "true" before you start writing in it, even if it does not contain an e-mail address.

Email- Example after @ input

Forms Validation

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Email



The screenshot shows a web browser window titled "Forms Validation" with the address bar displaying "localhost/angular/formsValidation/email.html". The page content includes the instruction "Write an E-mail address in the input field:", followed by an email input field containing "angular@developer.com" and a placeholder "angular@developer.com". Below the input field, it states "The input's valid state is:" followed by the word "true" in a large, bold font. A note at the bottom says "Note that the state of the input field is 'true' before you start writing in it, even if it does not contain an e-mail address."

Email- Example after validated input

Form states

Form is a collection of related individual controls grouped together. For example, Login form -> allows users to input their credential to enter the application.

- Angular Form has some additional capabilities than plain HTML forms.
- It gives developers more control on how to communicate with the form.
- While creating Angular form, AngularJS creates an instance of FormController.
- The FormController properties are:
 - \$pristine: No fields have been modified yet
 - \$dirty: One or more have been modified
 - \$invalid: The form content is not valid
 - \$valid: The form content is valid
 - \$submitted: The form is submitted



Forms Validation

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Flow of the form states

Flow 1: <i>pristine and invalid</i>	When the form is first rendered and the user has not interacted with the form yet.
Flow 2: <i>dirty and invalid</i>	User has interacted with the form, but validity has not been satisfied, yet.
Flow 3: <i>dirty and valid</i>	User has finished filling the form and the entire validation rule has been satisfied.

Forms Validation

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Input states

\$untouched:	The field has not been touched yet
\$touched:	The field has been touched
\$pristine:	The field has not been modified yet
\$dirty:	The field has been modified
\$invalid:	The field content is not valid
\$valid:	The field content is valid

CSS Classes

CSS class	Description
ng-valid	Angular sets this CSS class if the input field is valid without errors.
ng-invalid	Angular sets this CSS class if the input does not pass validations.
ng-pristine	Angular sets this CSS class if a user has not interacted with the control yet.
ng-dirty	Angular sets this CSS class if the value of form field has been changed.
ng-touched	Angular sets this CSS class if a user tabbed out from the input control.
ng-untouched	Angular sets this CSS class if a user has not tabbed out from the input control.
ng-submitted	Angular sets this CSS class if the form has been submitted.

CSS Classes


```
1.<!DOCTYPE html>
2.<html lang="en">
3.<head>
4.<meta charset="UTF-8">
5.<title>Forms Validation CSS class</title>
6.<script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js"></script>
7.<style>
8.input.ng-pristine { background-color:yellow;}
9.input.ng-touched.ng-invalid { background-color:red;}
10.input.ng-touched.ng-valid {background-color:green;}
11.</style>
12.</head>
13.<body ng-app>
14.<form name="studentForm" novalidate class="student-form">
15.<label for="firstName">First Name: </label><br />
16.<input type="text" name="firstName" ng-model="firstName" ng-required="true" />
17.<br /><br />
18.<label for="lastName">Last Name</label><br />
19.<input type="text" name="lastName" ng-model="lastName" ng-required="true" />
20.<br /><br />
21.<label for="dob">Email</label><br />
22.<input type="email" id="email" ng-model="email" name="email" ng-required="true"/>
23.<br /><br />
24.<input type="submit" value="Submit" /><br />
25.<p>Initially the input fields are yellow. They become green when we give valid data in it. They turn red if data is invalid, say an empty string. </p>
26.</form>
27.</body>
28.</html>
```

States and CSS Classes- Example Code

Forms Validation

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CSS Classes



Forms Validation CSS cla x

localhost/angular/formsvalidati

First Name:

Last Name

Email

Initially the input fields are yellow. They become green when we give valid data in it. They turn red if data is invalid, say an empty string.

States and CSS Classes- Initial Screen



Forms Validation CSS cla x

localhost/angular/formsvalidati


First Name:

Last Name

Email

Initially the input fields are yellow. They become green when we give valid data in it. They turn red if data is invalid, say an empty string.

States and CSS Classes- with Valid Inputs



Forms Validation CSS cla x

localhost/angular/formsvalidati

First Name:

Last Name

Email

Initially the input fields are yellow. They become green when we give valid data in it. They turn red if data is invalid, say an empty string.

States and CSS Classes- with Invalid Inputs

AngularJS Animations

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Introduction to AngularJS Animation

- An animation is the transformation of an HTML element which gives us an illusion of motion.
- Animating the elements in our app or pages adds to the fun and increases the user experience.
- They enhance user interface by making it smooth and more attractive.



AngularJS Animations

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\$ngAnimate

```
1.<!DOCTYPE html>
2.<html lang="en">
3.<head>
4. <meta charset="UTF-8">
5. <title>Angular Animations</title>
6. <script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js"></script>
7. <script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.animate.js"></script>
8. <style>
9. div {
10. transition: all linear 1s;
11. background-color: cyan;
12. height: 100px;
13. width: 100%;
14. position: relative;
15. top: 0;
16. left: 0;
17. }
18. .ng-hide {
19. height: 0;
20. width: 0;
21. background-color: transparent;
22. top: -200px;
23. left: 200px;
24. }
25. </style>
26.</head>
27.<body ng-app="ngAnimate" >
28. <h1>Hide the DIV: <input type="checkbox" ng-model="myCheck"></h1>
29. <div ng-hide="myCheck"></div>
30.</body>
31.</html>
```

ngAnimate- Example Code

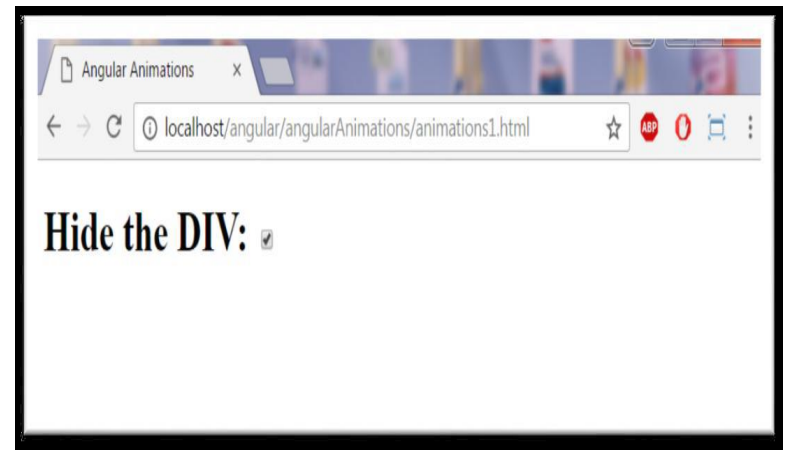
AngularJS Animations

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`$ngAnimate`



ngAnimate Example- Initial Screen



ngAnimate Example- After checking and completion of animation



AngularJS Animations

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\$ngAnimate

The directives in AngularJS who add/remove classes are:

- ng-show
- ng-hide
- ng-class
- ng-view
- ng-include
- ng-repeat
- ng-if
- ng-switch



AngularJS Animations

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CSS Animations

```
1.<!DOCTYPE html>
2.<html lang="en">
3.<head>
4. <meta charset="UTF-8">
5. <title>Angular Animations</title>
6. <script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js"></script>
7. <script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.animate.js"></script>
8. <style>
9. div { transition: all linear 1s;
10. background-color: cyan;
11. height: 100px;
12. }
13. .ng-hide {
14. height: 0px;
15. }
16. </style>
17.</head>
18.<body ng-app="myApp" >
19. <h1>Animate the DIV: <input type="checkbox"
ng-model="myCheck"></h1>
20. <div ng-hide="myCheck"></div>
21. <script>
22. var app = angular.module('myApp',
['ngAnimate']);
23. </script>
24.</body>
25.</html>
```

CSS Animations- Example Code

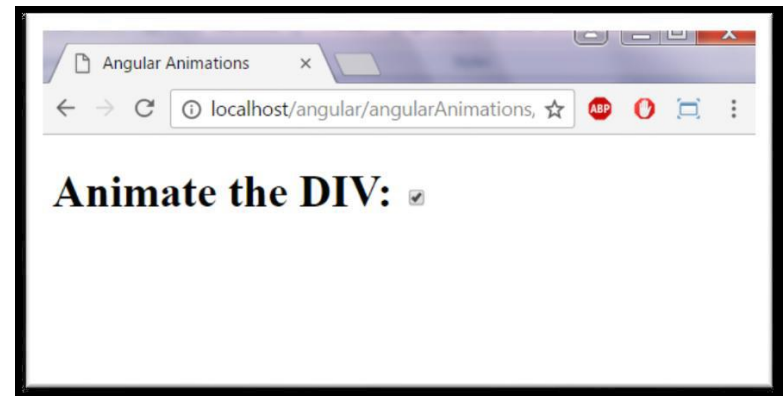
AngularJS Animations

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CSS Animations



CSS Animations- Initial Screen



CSS Animations- Final Screen



Summary

- Forms are the major way users communicate with the apps we develop.
- We perform first-line-of-defense validation in the Web browser.
- Form validations reduce the load on our Web servers, conserve bandwidth and provide better user experience.
- AngularJS monitors the state of the form and input fields and lets us notify the user about the current state.
- Animating the elements in our app adds to the fun and increases the user experience.
- To implement animations in AngularJS, we need to add the angular-animate.js library in addition to the core angular.js library.
- The ngAnimate module adds and removes classes.

