



Angular Material

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About the Tutorial

Angular Material is a UI component library for Angular JS developers. Angular Material components help in constructing attractive, consistent, and functional web pages and web applications while adhering to modern web design principles like browser portability, device independence, and graceful degradation. It helps in creating faster, beautiful, and responsive websites. It is inspired by the Google Material Design.

Audience

This tutorial is meant for professionals who aspire to learn the basics of Angular Material and how to use it to create faster, beautiful, and responsive websites. This tutorial explains the fundamental concepts of Angular Material.

Prerequisites

Before proceeding with this tutorial, you should have a basic understanding of Angular JS, HTML, CSS, JavaScript, Document Object Model (DOM), and any text editor. In addition, it will help if you know how web-based applications work.

Execute Angular Material Online

For most of the examples given in this tutorial, you will find a **Try-it** option. Use this option to execute your Angular Material programs then and there and enjoy your learning.

Try the following example using the **Try-it** option available at the top right corner of the following sample code box –

```
<html lang="en" >
  <head>
    <link rel="stylesheet"
href="https://ajax.googleapis.com/ajax/libs/angular_material/1.0.0/angular-
material.min.css">
    <script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js"></script>
    <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular-
animate.min.js"></script>
    <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular-
aria.min.js"></script>
    <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular-
messages.min.js"></script>
    <script
src="https://ajax.googleapis.com/ajax/libs/angular_material/1.0.0/angular-
material.min.js"></script>
    <script type="text/javascript">
      angular.module('firstApplication', ['ngMaterial']);
```

```

    </script>
</head>
<body ng-app="firstApplication" ng-cloak>
  <md-toolbar class="md-warn">
    <div class="md-toolbar-tools">
      <h2 class="md-flex">HTML 5</h2>
    </div>
  </md-toolbar>
  <md-content flex layout-padding>
    <p>HTML5 is the next major revision of the HTML standard superseding HTML 4.01, XHTML 1.0, and XHTML 1.1. HTML5 is a standard for structuring and presenting content on the World Wide Web.</p>
    <p>HTML5 is a cooperation between the World Wide Web Consortium (W3C) and the Web Hypertext Application Technology Working Group (WHATWG).</p>
    <p>The new standard incorporates features like video playback and drag-and-drop that have been previously dependent on third-party browser plug-ins such as Adobe Flash, Microsoft Silverlight, and Google Gears.</p>
  </md-content>
</body>
</html>

```

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1. ANGULAR MATERIAL – OVERVIEW

Angular Material is a UI component library for Angular JS developers. Angular Material's reusable UI components help in constructing attractive, consistent, and functional web pages and web applications while adhering to modern web design principles like browser portability, device independence, and graceful degradation.

Following are a few salient features of Angular Material:

- In-built responsive designing.
- Standard CSS with minimal footprint.
- Includes new versions of common user interface controls such as buttons, check boxes, and text fields which are adapted to follow Material Design concepts.
- Includes enhanced and specialized features like cards, toolbar, speed dial, side nav, swipe, and so on.
- Cross-browser, and can be used to create reusable web components.

Responsive Design

- Angular Material has in-built responsive designing so that the website created using Angular Material will redesign itself as per the device size.
- Angular Material classes are created in such a way that the website can fit any screen size.
- The websites created using Angular Material are fully compatible with PC, tablets, and mobile devices.

Extensible

- Angular Material is by design very minimal and flat.
- It is designed considering the fact that it is much easier to add new CSS rules than to overwrite existing CSS rules.
- It supports shadows and bold colors.
- The colors and shades remain uniform across various platforms and devices.

And most important of all, Angular Material is absolutely free to use.

2. ANGULAR MATERIAL – ENVIRONMENT SETUP

How to Use Angular Material?

There are two ways to use Angular Material:

- **Local Installation** - You can download the Angular Material libraries using npm, jspm, or bower on your local machine and include it in your HTML code.
- **CDN Based Version** - You can include the angular-material.min.css and angular-material.js files into your HTML code directly from the Content Delivery Network (CDN).

Local Installation

Before we use the following npm command, we require the NodeJS installation on our system. To get information about node JS, click [here](#) and open the NodeJS command line interface. We will use the following command to install Angular Material libraries.

```
npm install angular-material
```

The above command will generate the following output –

```
angular-animate@1.5.2 node_modules\angular-animate  
  
angular-aria@1.5.2 node_modules\angular-aria  
  
angular-messages@1.5.2 node_modules\angular-messages  
  
angular@1.5.2 node_modules\angular  
  
angular-material@1.0.6 node_modules\angular-material
```

npm will download the files under **node_modules > angular-material** folder. Include the files as explained in the following example –

Example

Now you can include the *css* and *js* file in your HTML file as follows –

```
<html lang="en" >
```



```

<head>
  <link rel="stylesheet" href="/node_modules/angular-material/angular-
material.css">
  <script src="/node_modules/angular-material/angular.js"></script>
  <script src="/node_modules/angular-material/angular-animate.js"></script>
  <script src="/node_modules/angular-material/angular-aria.js"></script>
  <script src="/node_modules/angular-material/angular-messages.js"></script>
  <script src="/node_modules/angular-material/angular-material.js"></script>
  <script type="text/javascript">
    angular.module('firstApplication', ['ngMaterial']);
  </script>
</head>
<body ng-app="firstApplication" ng-cloak>
  <md-toolbar class="md-warn">
    <div class="md-toolbar-tools">
      <h2 class="md-flex">HTML 5</h2>
    </div>
  </md-toolbar>
  <md-content flex layout-padding>
    <p>HTML5 is the next major revision of the HTML standard superseding HTML
4.01, XHTML 1.0, and XHTML 1.1. HTML5 is a standard for structuring and presenting
content on the World Wide Web.</p>
    <p>HTML5 is a cooperation between the World Wide Web Consortium (W3C) and
the Web Hypertext Application Technology Working Group (WHATWG).</p>
    <p>The new standard incorporates features like video playback and drag-
and-drop that have been previously dependent on third-party browser plug-ins such
as Adobe Flash, Microsoft Silverlight, and Google Gears.</p>
  </md-content>
</body>
</html>

```

The above program will generate the following result –

HTML 5

HTML5 is the next major revision of the HTML standard superseding HTML 4.01, XHTML 1.0, and XHTML 1.1. HTML5 is a standard for structuring and presenting content on the World Wide Web.

HTML5 is a cooperation between the World Wide Web Consortium (W3C) and the Web Hypertext Application Technology Working Group (WHATWG).

CDN Based Version

You can include the **angular-material.css** and **angular-material.js** files into your HTML code directly from the Content Delivery Network (CDN). Google CDN provides content for the latest version.

We are using the Google CDN version of the library throughout this tutorial.

Example

Now let us rewrite the above example using **angular-material.min.css** and **angular-material.min.js** from Google CDN.

```
<html lang="en" >
  <head>
    <link rel="stylesheet"
href="https://ajax.googleapis.com/ajax/libs/angular_material/1.0.0/angular-
material.min.css">
    <script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js"></scrip
t>
    <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular-
animate.min.js"></script>
    <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular-
aria.min.js"></script>
    <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular-
messages.min.js"></script>
    <script
src="https://ajax.googleapis.com/ajax/libs/angular_material/1.0.0/angular-
material.min.js"></script>
    <script type="text/javascript">
      angular.module('firstApplication', ['ngMaterial']);
```

```

    </script>
</head>
<body ng-app="firstApplication" ng-cloak>
  <md-toolbar class="md-warn">
    <div class="md-toolbar-tools">
      <h2 class="md-flex">HTML 5</h2>
    </div>
  </md-toolbar>
  <md-content flex layout-padding>
    <p>HTML5 is the next major revision of the HTML standard superseding HTML
    4.01, XHTML 1.0, and XHTML 1.1. HTML5 is a standard for structuring and presenting
    content on the World Wide Web.</p>
    <p>HTML5 is a cooperation between the World Wide Web Consortium (W3C) and
    the Web Hypertext Application Technology Working Group (WHATWG).</p>
    <p>The new standard incorporates features like video playback and drag-
    and-drop that have been previously dependent on third-party browser plug-ins such
    as Adobe Flash, Microsoft Silverlight, and Google Gears.</p>
  </md-content>
</body>
</html>

```

The above program will generate the following result –



3. ANGULAR MATERIAL – AUTOCOMPLETE

The **md-autocomplete**, an Angular Directive, is used as a special input control with an inbuilt dropdown to show all possible matches to a custom query. This control acts as a real-time suggestion box as soon as the user types in the input area. **<md-autocomplete>** can be used to provide search results from local or remote data sources. md-autocomplete caches results when performing a query. After first call, it uses the cached results to eliminate unnecessary server requests or lookup logic and it can be disabled.

Attributes

The following table lists out the parameters and description of the different attributes of **md-autocomplete**.

S.No.	Parameter & Description
1	* md-items An expression in the format of item in items to iterate over matches for your search.
2	md-selected-item-change An expression to be run each time a new item is selected.
3	md-search-text-change An expression to be run each time the search text updates.
4	md-search-text A model to bind the search query text to.
5	md-selected-item A model to bind the selected item to.
6	md-item-text An expression that will convert your object to a single string.
7	placeholder Placeholder text that will be forwarded to the input.

S.No.	Parameter & Description
8	md-no-cache Disables the internal caching that happens in autocomplete.
9	ng-disabled Determines whether or not to disable the input field.
10	md-min-length Specifies the minimum length of text before autocomplete will make suggestions.
11	md-delay Specifies the amount of time (in milliseconds) to wait before looking for results.
12	md-autofocus If true, will immediately focus the input element.
13	md-autoselect If true, the first item will be selected by default.
14	md-menu-class This will be applied to the dropdown menu for styling.
15	md-floating-label This will add a floating label to autocomplete and wrap it in the md-input-container.
16	md-input-name The name attribute given to the input element to be used with the FormController.
17	md-input-id An ID to be added to the input element.
18	md-input-minlength The minimum length for the input's value for validation.
19	md-input-maxlength

S.No.	Parameter & Description
	The maximum length for the input's value for validation.
20	md-select-on-match When set as true, autocomplete will automatically select the exact item if the search text is an exact match.

Example

The following example shows the use of the **md-autocomplete** directive and also the use of autocomplete.

am_autocomplete.htm

```

<html lang="en" >
  <head>
    <link rel="stylesheet"
href="https://ajax.googleapis.com/ajax/libs/angular_material/1.0.0/angular-
material.min.css">
    <script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js"></scrip
t>
    <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular-
animate.min.js"></script>
    <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular-
aria.min.js"></script>
    <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular-
messages.min.js"></script>
    <script
src="https://ajax.googleapis.com/ajax/libs/angular_material/1.0.0/angular-
material.min.js"></script>
    <script language="javascript">
      angular
        .module('firstApplication', ['ngMaterial'])
        .controller('autoCompleteController', autoCompleteController);

      function autoCompleteController ($timeout, $q, $log) {
        var self = this;
        self.simulateQuery = false;

```

```

self.isDisabled    = false;
// list of states to be displayed
self.states        = loadStates();
self.querySearch   = querySearch;
self.selectedItemChange = selectedItemChange;
self.searchTextChange = searchTextChange;
self.newState = newState;
function newState(state) {
    alert("This functionality is yet to be implemented!");
}
function querySearch (query) {
    var results = query ? self.states.filter( createFilterFor(query) ) :
self.states, deferred;
    if (self.simulateQuery) {
        deferred = $q.defer();
        $timeout(function () {
            deferred.resolve( results );
        },
            Math.random() * 1000, false);
        return deferred.promise;
    } else {
        return results;
    }
}
function searchTextChange(text) {
    $log.info('Text changed to ' + text);
}
function selectedItemChange(item) {
    $log.info('Item changed to ' + JSON.stringify(item));
}
//build list of states as map of key-value pairs
function loadStates() {
    var allStates = 'Alabama, Alaska, Arizona, Arkansas, California,
Colorado, Connecticut, Delaware,\

```

```
        Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas,
Kentucky, Louisiana,\
        Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi,
Missouri, Montana,\
        Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New
York, North Carolina,\
        North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island,
South Carolina,\
        South Dakota, Tennessee, Texas, Utah, Vermont, Virginia,
Washington, West Virginia,\
        Wisconsin, Wyoming';
    return allStates.split(/, +/g).map( function (state) {
        return {
```


End of ebook preview
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