Recipes with Angular.js

Practical concepts and techniques for rapid web application development

```
<body ng-app>
  <div ng-controller="MyCtrl">
    <button class="btn" ng-click="toggle()">Toggle</button>
    <p ng-show="isVisible()">Hello World!</p>
    <p>Debug Scope: visible = {{visible}}</p>
  </div>
</body>
```

by Frederik Dietz

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Frederik Dietz

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Contents

An Introduction to Angular.js

Including the Angular.js library Code in an HTML page

Problem

You want to use Angular.js on a web page.

Solution

In order to get your first Angular.js app up and running you need to include the Angular Javascript file via `script` tag and make use of the `ng-app` directive.

```
<html>
  <head>
    <script src="http://ajax.googleapis.com/ajax/libs/angularjs/1.0.4/angul\
ar.js"></script>
  </head>
  <body ng-app>
    <p>This is your first angular expression: {{ 1 + 2 }}</p>
  </body>
</html>
```

Tip: You can checkout a complete example on github[a].

[a] http://github.com/fdietz/recipes-with-angular-js-examples/chapter1/recipe1

Discussion

Adding the `ng-app` directive tells Angular to kick in its magic. The expression `{{ 1 + 2 }}` is evaluated by Angular and the result `3` is rendered. Note, that removing `ng-app` will result in the browser to render the expression as is instead of evaluating it. Play around with the expression! You can for example concatenate Strings and invert or combine Boolean values.

For Brevity reasons we skip the boilerplate code in the following recipes.

Binding a Text Input to an Expression

Problem

You want user input to be used in another part of your HTML page.

Solution

Use Angulars `ng-model` directive to bind the text input to the expression.

```
Enter your name: <input type="text" ng-model="name"></input>
<p>Hello {{name}}!</p>
```

Discussion

Assigning "name" to the `ng-model` attribute and using the name variable in an expression will keep both in sync automatically. Typing in the text input will automatically reflect these changes in the paragraph element below.

Consider how you would implement this traditionally using jQuery:

```
<html>
  <head>
    <script src="http://code.jquery.com/jquery.min.js"></script>
  </head>
  <body>
    Enter your name: <input type="text"></input>
    <p id="name"></p>

    <script>
      $(document).ready(function() {
        $("input").keypress(function() {
          $("#name").text($(this).val());
        });
      });
    </script>

  </body>
</html>
```

On document ready we bind to the keypress event in the text input and replace the text in the paragraph in the callback function. Using jQuery you need to deal with document ready callbacks, element selection, event binding and the context of this. Quite a lot of concepts to swallow and lines of code to maintain!

Converting Expression Output with Filters

Problem

When presenting data to the user, you might need to convert the data to a more user-friendly format. In our case we want to uppercase the `name` value from the previous recipe in the expression.

Solution

Use the `uppercase` Angular filter.

```
1 Enter your name: <input type="text" ng-model="name"></input>
2 <p>Hello {{name | uppercase }}!</p>
```

Discussion

Angular uses the `|` (pipe) character to combine filters with variables in expressions. When evaluating the expression, the name variable is passed to the uppercase filter. This is similar to working with the Unix bash pipe symbol where an input can be transformed by another program. Also try the `lowercase` filter!

Responding to Click Events using Controllers

Problem

You want to hide an HTML element on button click.

Solution

Use the `ng-hide` directive in conjunction with a controller to change the visibility status on button click.

```
<html>
  <head>
    <script src="js/angular.js"></script>
    <script src="js/app.js"></script>
    <link rel="stylesheet" href="css/bootstrap.css">
  </head>
  <body ng-app>
    <div ng-controller="MyCtrl">
      <button ng-click="toggle()">Toggle</button>
      <p ng-show="isVisible()">Hello World!</p>
      <p>Debug Scope: visible = {{visible}}</p>
    </div>
  </body>
</html>
```

And the controller in `js/app.js`:

```
function MyCtrl($scope) {
  $scope.visible = true;

  $scope.toggle = function() {
    $scope.visible = !$scope.visible;
  };

  $scope.isVisible = function() {
    return $scope.visible === true;
  };
}
```

Discussion

Using the `ng-controller` directive we bind the `div` element including its children to the context of the `MyCtrl` Controller. The `ng-click` directive will call the `toggle()` function of the Controller on button click. The Controller implementation defaults the `visible` attribute to true and toggles its boolean state in the `toggle` function. The `ng-show` directive calls the `isVisible()` function to retrieve the boolean state. Note, that you could also use the `visible` attribute directly if you don't need to encapsulate your business logic.

Creating Custom HTML elements with Directives

Problem

You want to render an HTML snippet as a reusable custom HTML element.

Solution

Create a custom Directive which renders your Hello World snippet.

```
<body ng-app="MyApp">
  <hello-world/>
</body>
```

The directive implementation:

```
var app = angular.module("MyApp", []);

app.directive("helloWorld", function() {
  return {
    restrict: "E",
    template: '<span>Hello World</span>'
  };
});
```

Discussion

We ignore the module creation for a later recipe for now. The browser will render the `span` element as defined in the directive. Note, that it does not replace the `hello-world` element, but instead inserts the `span` as a child. If you want to replace the content completely you need to return an additional attribute `replace` set to true:

```
app.directive("helloWorld", function() {
  return {
    restrict: "E",
    replace: true,
    template: '<span>Hello World</span>'
  };
});
```

Now the `hello-world` element is not rendered at all and replaced with the `span` element.

Also note the `restrict` attribute is set to `E` which means the directive can be used only as an HTML element. A full discussion will follow in a later chapter.