

jQuery Mobile

An Introduction

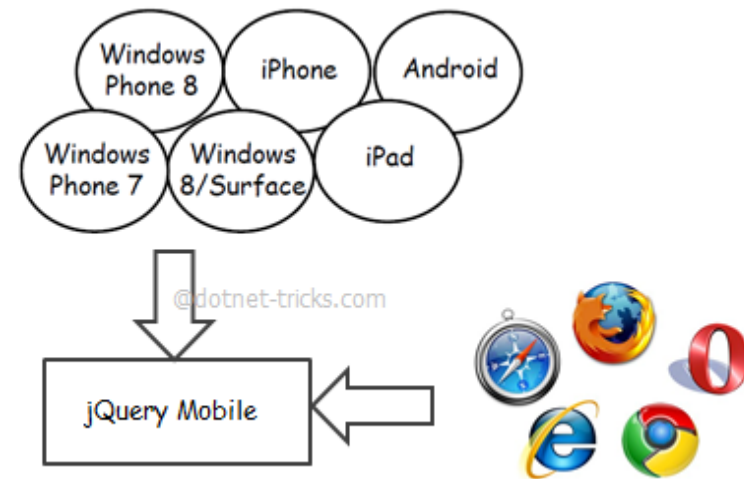


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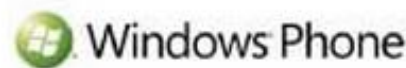
What is jQuery Mobile

- ◆ A framework built on top of jQuery, used for creating mobile web applications
- ◆ Designed to make responsive web sites that will fit to the screen size of any phone, tablet, or computer
- ◆ Open-source and free for all kinds of usages
- ◆ JQuery Mobile is a user interface framework which is built on jQuery core and used for developing responsive websites or applications that are accessible on mobile, tablet and desktop devices.
- ◆ It uses features of both jQuery and jQueryUI to provide API features for mobile web applications.
- ◆ jQuery Mobile is a touch-optimized web framework for creating mobile web applications.
- ◆ **Jquery** mobile is a JavaScript framework built on top of **jquery**.



Supported Platforms

- The following browsers support the jQuery mobile experience
 - Apple iOS (3.1-4.2)
 - Android (1.6-2.3) all devices
 - Blackberry 6
 - Windows Phone 7 Mango
 - Palm WebOS (1.4)
 - Opera Mobile (10.1)
 - Opera Mini (5.02)
 - Firefox Mobile (beta)



jQuery Mobile vs. jQuery

- jQuery was designed to simplify standard scripting across browsers
- jQuery focuses on creating elements, performing HTTP requests
- jQuery mobile is just a framework built on top of jQuery, it makes use of all the features of jQuery, but used to build mobile-friendly sites

Jquery & Jquery UI

Jquery

- ♦ **jQuery** is purely designed to simplify and standardise scripting across browsers. It focuses on the low-level stuff: creating elements, manipulating the DOM, managing attributes, performing HTTP requests, etc.
- ♦ **Jquery** is a JavaScript library meant for dom operations. **Jquery UI** is a JavaScript library built on top of **jquery** which is meant for **UI** operations.

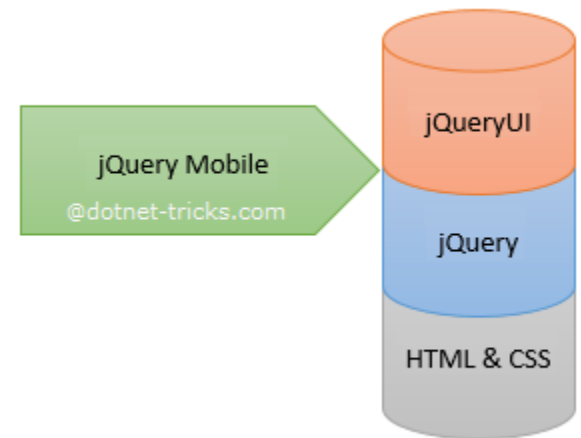
Jquery UI

- ♦ **jQueryUI** is a set of user interface components & features built on top of jQuery (i.e. it needs jQuery to work): buttons, dialog boxes, sliders, tabs, more advanced animations, drag/drop functionality.
- ♦ **Jquery UI** contains a rich set of **UI** widgets such as date picker, dialog etc.

jQuery and jQueryUI are both designed to be added to your web site, if you want to add a particular feature, jQuery or jQueryUI might be able to help

Cont...

- ◆ **jQuery Mobile** is a full framework which is built on jQuery and jQuery UI foundation. It makes use of features of both jQuery and jQueryUI to provide both UI components and API features for building mobile-friendly sites. In addition, jQuery Mobile also offers various native features that are especially made for mobile devices.
- ◆ Moreover, **jQuery** and **jQueryUI** act as a layer on top of your HTML and CSS. Using jQuery and jQueryUI, you just leave your markup alone and enhance it with the help of jQuery. However, jQuery Mobile provides ways to define your components using HTML5 data-* attributes.



Why to use JQuery mobile?

- 💧 It creates web applications in such a way that it will work the same way on the mobile, tablet and desktop devices.
- 💧 It is compatible with other frameworks such as *PhoneGap*, *Whitelight* etc.
- 💧 It provides set of touch friendly form inputs and UI widgets.
- 💧 The progressive enhancement brings you functionality to all mobile, tablet and desktop platforms and adds efficient page loads and wider device support.

Features

- 💧 Touch-optimized JavaScript framework for smart-phones & tablets.
- 💧 It is built on jQuery Core and "write less, do more" UI framework.
- 💧 It is an open source, cross platform and cross browser compatible.
- 💧 It's written in JavaScript and uses features of both jQuery and jQueryUI for building mobile freindly sites and applications.
- 💧 It integrates HTML5, CCS3, jQuery and jQueryUI into one framework for creating pages with minimal scripting.

Features

- Unified user interface system across all popular mobile platforms.
- Minimal image dependencies and light weight in size (12KB) to optimize speed.
- Responsive design techniques allow the same underlying UI to automatically scale from smart-phones to tablet and desktop-sized screens
- AJAX-based navigation system to enable animated page transitions while maintaining back button, bookmarking and clean URLs.

Advantages

- ◆ It is easy to learn and develop applications if you have knowledge of HTML5, CSS3 features.
- ◆ It is cross platform and cross browser compatible so you don't have to worry about writing different code for each device resolution.
- ◆ You can create the custom theme using *ThemeRoller* without writing line of code and offers to support all HTML5 browsers.
- ◆ It uses HTML5 along with JavaScript for easy development of web applications.
- ◆ It is built in such a way that it allows same code to automatically scale from mobile screen to desktop screen.

TOUCH OPTIMIZED?

- 💧 UI Controls need to be big enough to touch.
- 💧 Minimize the need for typing
- 💧 No mouseover, mousemove events, instead you have events like swipe, swipe left, swipe right, orientation change, tap, tap hold, etc.
- 💧 Optimized Form Controls

Jquery Mobile Setup

- Step 1: When you open the link jquerymobile.com/, you will see there are two options to download jQuery mobile library: -



Custom Download

- 💧 Using Download Builder you can create a custom build including only the portions of the library that you need and download this new customized version of jQuery Mobile.

Stable Download

- 💧 Click on the *Stable* button, which leads directly to a ZIP file containing the css and jquery files, for latest version of jQuery mobile library. Extract the ZIP file contents to a jQuery mobile directory.
- 💧 This version contains all files including all dependencies, a large collection of demos, and even the library's unit test suite.

Cont...

- 💧 When you have successfully downloaded the jquery mobile link file as follow:
- ① Link to jQuery mobile stored on your computer: You must download the mobile library from [jQuerymobile.com](http://jquerymobile.com) then add the following code in the <head> block of your page

```
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="jquery.mobile-1.4.2.css">
<script src="jquery.js"></script>
<script src="jquery.mobile-1.4.2.js"></script>
</head>
```

Installing jQuery mobile

- 💧 The second way to incorporate jQuery mobile into your web page is much easier
- ① There is nothing to install on your computer just include the following libraries directly into your page

```
<head>  
<meta name="viewport" content="width=device-width, initial-scale=1">  
<link rel="stylesheet" href="http://code.jquery.com/mobile/1.4.2/jquery.mobile-1.4.2.min.css">  
<script src="http://code.jquery.com/jquery-1.10.2.min.js"></script>  
<script src="http://code.jquery.com/mobile/1.4.2/jquery.mobile-1.4.2.min.js"></script>  
</head>
```

Download jQuery Library from CDNs

- 💧 A CDN or Content Delivery Network is a network of servers designed to serve files to users.
- 💧 If you use a CDN link in your web page, it moves the responsibility of hosting files from your own servers to a series of external ones.
- 💧 This also offers an advantage that if a visitor to your webpage has already downloaded a copy of jQuery mobile from the same CDN, it won't have to be re-downloaded.
- 💧 Example :<https://code.jquery.com/jquery-1.11.3.min.js>

Attributes of jQuery mobile

- 💧 There are many different attributes of jQuery mobile that will make designing a responsive mobile web site more simple. Here are a few examples...
- 💧 Data-roles
- 💧 Pages
- 💧 Navigation
- 💧 Transitions

Data-roles

- 💧 In order to detect roles in an HTML document and manage attributes like pages, toolbars, navigation and theming you must use a **data-role**.
- 💧 Data-role is not a new HTML-5 attribute, it is a tool that tells HTML-5 that the attribute the role belongs to needs to be turned into a **mobile** version of that attribute.

Know Your Roles

- jQuery mobile uses standard HTML markup, like the **div** element.
- To define what the framework should do with a div, we must define a role. A role is defined using the attribute data-role; for example `<div data-role = “page ”>`
- The possible roles that we can use will usually define the type of components or widgets we can render with JQM.

Data Role Attributes

- ◆ jQuery Mobile uses an HTML attribute called: **data-role** to associate an element with a widget. For example:
 - ◆ `data-role="page"`
 - ◆ `data-role="header"`
 - ◆ `data-role="footer"`
 - ◆ `data-role="navbar"`
 - ◆ `data-role="button"`
 - ◆ `data-role="listview"`
 - ◆ `data-role="controlgroup"`
 - ◆ `data-role="fieldcontain"`

Component	HTML5 data- ³ attribute
Header, Footer toolbars	<pre><div data-role="header"> <div data-role="footer"></pre>
Content body	<pre><div data-role="content"></pre>
Buttons	<pre>Button</pre>
Grouped buttons	<pre><div data-role="controlgroup"> Yes No Hell Yeah </div></pre>
Inline buttons	<pre><div data-inline="true"> Foo Bar </div></pre>

Form element (Select menu)	<pre> <div data-role="fieldcontain"> <label for="select-options" class="select">Choose an option:</label> <select name="select-options" id="select-options"> <option value="option1">Option 1</option> <option value="option2">Option 2</option> <option value="option2">Option 3</option> </select> </div> </pre>
Basic List views	<pre> <ul data-role="listview"> One Two Three </pre>
Dialogs	<pre> Open dialog Open dialog </pre>
Transitions	<pre> </pre>

Pages



Pages

- 💧 The **page** is the main attribute in jQuery mobile, usually divided into three parts: A **header**, **content**, and **footer**
- 💧 The only mandatory section is the **content** and each different section is declared using a **div** with the corresponding **data-role**. Ex. `<div data-role = “header” >`

Anatomy of a Page

```
<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8" />
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="/Users/Chris/Documents/jquery-mobile-theme/themes/SuperTheme.css" />
<link rel="stylesheet" href="/Users/Chris/Documents/jquery-mobile-theme/themes/jquery.mobile.icons.min.css" />
<link rel="stylesheet" href="http://code.jquery.com/mobile/1.4.3/jquery.mobile.structure-1.4.3.min.css" />
<script src="http://code.jquery.com/jquery-1.11.1.min.js"></script>
<script src="http://code.jquery.com/mobile/1.4.3/jquery.mobile-1.4.3.min.js"></script>
</head>
<body>

<div data-role="page">
<title>Anatomy of a JQM page</title>
  <div data-role="header" data-theme="b">

    <h1>Example| Page</h1>
  </div>

  <div data-role="main" class="ui-content">

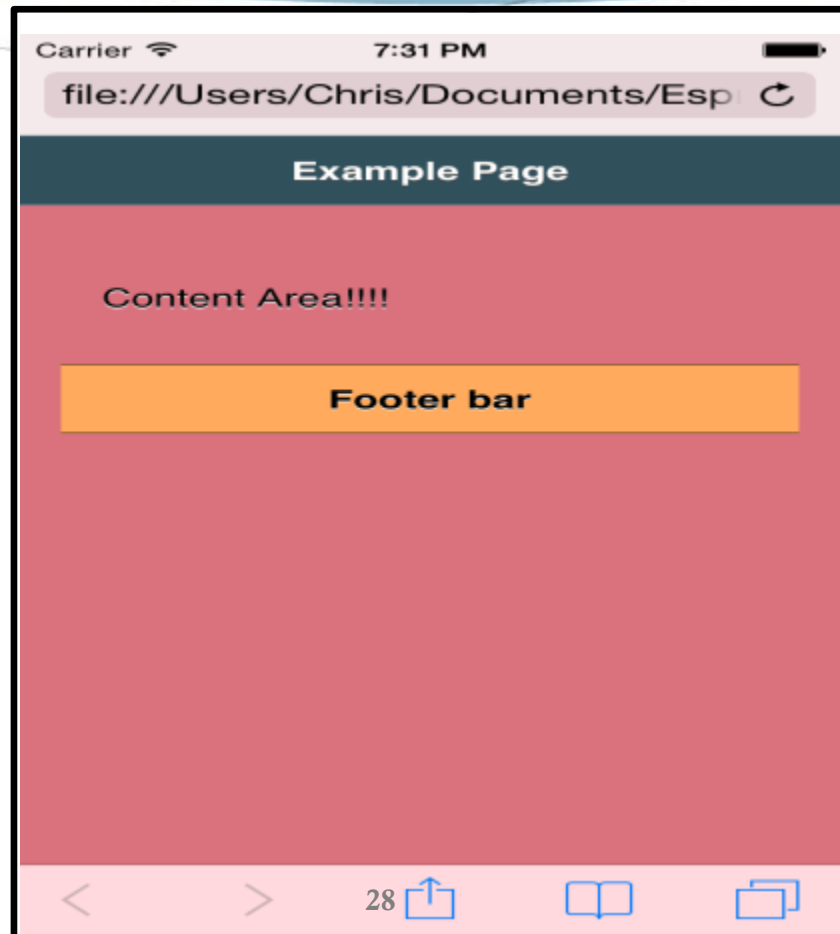
    <div data-role = "content" />
    <p>Content Area!!!!</p>

  </div>

  <div data-role="footer">
    <h1>Footer bar</h1>
  </div>
</div>

</body>
</html>
```

Anatomy of a Page



Navigation



Navigation

- 💧 A jQuery Mobile Document can have multiple pages and we can link between them using page ID's and an anchor(#)
- 💧 Having multiple pages in the same HTML document allows pages to load more efficiently than a standard HTTP request. Helps the UI feel more app-like

Linking Pages

- 💧 To enable animated page transitions, all links that point to an external page will be loaded via Ajax
- 💧 The framework will parse the link's href to create an Ajax request and displays the loading spinner
- 💧 This is all done automatically by jQuery Mobile

Linking Pages Within a Multi-Page Document

- 💧 If a link in a multi-page document points to an anchor (`#example`), jQuery Mobile will look for a page div with that id (`id = "example"`)
- 💧 If the page is found, it will transition that page into view
- 💧 You can seamlessly navigate between internal “pages” (`#example`) and external pages (`example.html`) using jQuery mobile

Transitions

- 💧 The default transition from one page to the next can be changed or customized using CSS3 animations.
- 💧 Transitions must be defined using the **data-transition** attribute on the **a** element and on of these following values:
 - 💧 Fade
 - 💧 Slide
 - 💧 Slideup
 - 💧 Slidedown
 - 💧 Pop
 - 💧 Flip

Transitions

- **slide** Slide right to left (left to right if tapping the Back button). This is the default.
- **slideup** Slide from the bottom to the top (top to bottom if tapping the Back button).
- **slidedown** Slide from the top to the bottom (bottom to top if tapping the Back button).
- **pop** Expand the new page (contract it if tapping the Back button). Great for dialogs and popups.
- **fade** Fade the new page in (fade it out if tapping the Back button).
- **flip** Flip the old page out and the new page in, like flipping a card.

Transitions

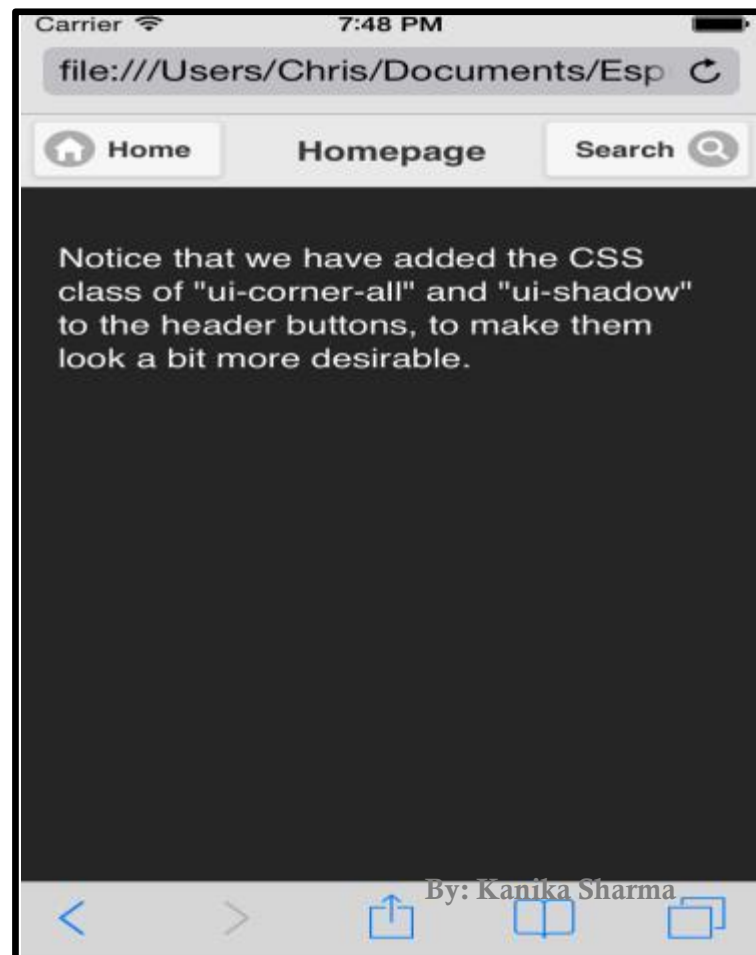
- 💧 We can link to an external page using a slide transition like this: ``
- 💧 The framework applies the right to left slide transition by default

Dialog Boxes & Pages

- 💧 To create a dialog window add **data-rel =“dialog”** to an anchor. `<#>`
- 💧 You may add transitions to dialog boxes or pages.
- 💧 ` Open dialog `

Headers and Footers

- Using the data-role = “header” and data-role = “footer” will make your header and footer links into ones that look like iphone or android mobile apps would use



Headers

```
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="http://code.jquery.com/mobile/1.4.2/jquery.mobile-1.4.2.min.css">
<script src="http://code.jquery.com/jquery-1.10.2.min.js"></script>
<script src="http://code.jquery.com/mobile/1.4.2/jquery.mobile-1.4.2.min.js"></script>
</head>
<body>

<div data-role="page" data-theme="b">
  <div data-role="header" data-theme="a">
    <a href="#" class="ui-btn ui-corner-all ui-shadow ui-icon-home ui-btn-icon-left">Home</a>
    <h1>Homepage</h1>
    <a href="#" class="ui-btn ui-corner-all ui-shadow ui-icon-search ui-btn-icon-right">Search</a>
  </div>

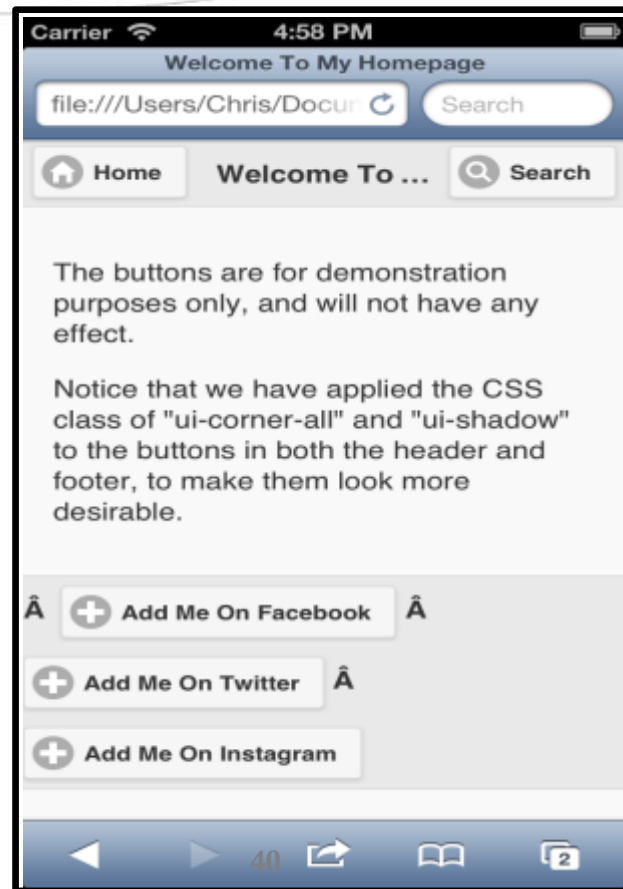
  <div data-role="main" class="ui-content">
    <p>Notice that we have added the CSS class of "ui-corner-all" and "ui-shadow" to the header buttons, to make them look a bit more desirable.</p>
  </div>
</div>

</body>
</html>
```

Footers

```
1 <div data-role="footer">
2   <a href="#" class="ui-btn ui-corner-all ui-shadow ui-icon-plus ui-btn-
   icon-left">Add Me On Facebook</a>
3   <a href="#" class="ui-btn ui-corner-all ui-shadow ui-icon-plus ui-btn-
   icon-left">Add Me On Twitter</a>
4   <a href="#" class="ui-btn ui-corner-all ui-shadow ui-icon-plus ui-btn-
   icon-left">Add Me On Instagram</a>
5 </div>|
```

Footers



Buttons



Buttons

- 💧 A button in jQuery Mobile can be created in the three ways:
- 💧 Using the `<input>` element
- 💧 Using the `<button>` element with class = “ui-btn”
- 💧 Using the `<a>` element with class = “ui-btn”

Buttons

- Buttons in JQM are automatically styled, making them look more attractive and similar to a mobile device
- It has been recommended that you use the `<a>` element with class = “ui-btn” to link between pages, and `<input>` or `<button>` elements for form submission
- Buttons can be grouped in sets both vertically and horizontally using **data-type = “vertical(or horizontal)”** in the `<div>` section

Buttons

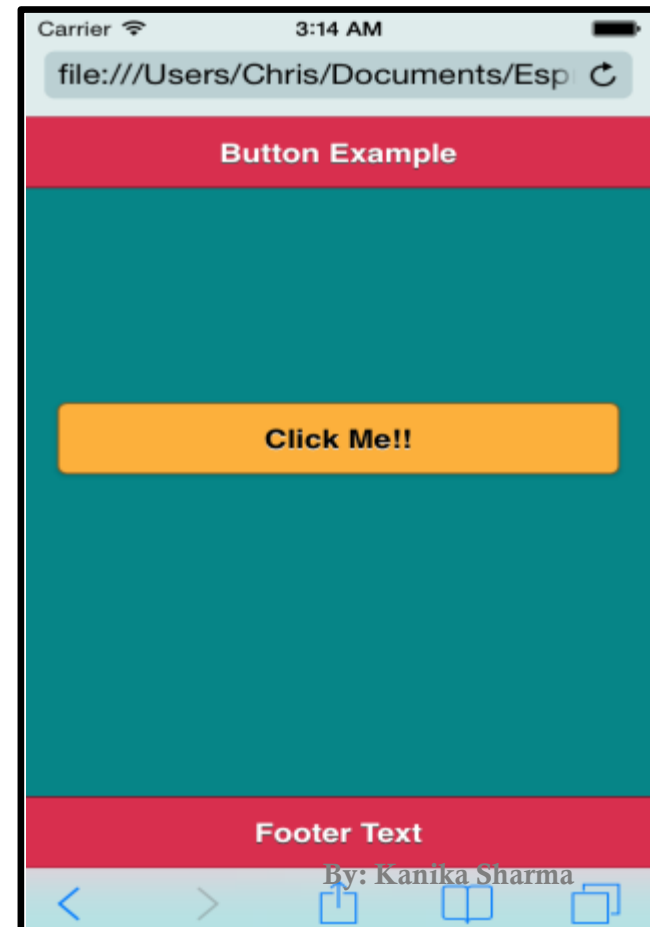
```
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="http://code.jquery.com/mobile/1.4.2/jquery.mobile-1.4.2.min.css">
<link rel="stylesheet" href="/Users/Chris/Documents/jquery-mobile-theme-233845-0/themes/themington2.css" />
<link rel="stylesheet" href="/Users/Chris/Documents/jquery-mobile-theme/themes/jquery.mobile.icons.min.css" />
<link rel="stylesheet" href="http://code.jquery.com/mobile/1.4.3/jquery.mobile.structure-1.4.3.min.css" />
<script src="http://code.jquery.com/jquery-1.10.2.min.js"></script>
<script src="http://code.jquery.com/mobile/1.4.2/jquery.mobile-1.4.2.min.js"></script>
</head>
<body>

<div data-role="page" id="pageone">
  <div data-role="header" data-theme="b" data-position="fixed">
    <h1>Button Example</h1>
  </div>

  <div data-role="main" class="ui-content">

    <a href="#" class="ui-btn ui-corner-all ui-shadow">Click Me!!</a>
  </div>

  <div data-role="footer" data-theme="b" data-position="fixed">
    <h1>Footer Text</h1>
  </div>
</div>
</body>
</html>
```



The Back Button

```
<script src="http://code.jquery.com/jquery-1.10.2.min.js"></script>
<script src="http://code.jquery.com/mobile/1.4.2/jquery.mobile-1.4.2.min.js"></script>
</head>
<body>

<div data-role="page" id="pageone">
  <div data-role="header" data-theme="b" data-position="fixed">
    <h1>Button Example</h1>
  </div>

  <div data-role="main" class="ui-content">
    <a href="#B" class="ui-btn ui-corner-all ui-shadow">Go to Page Two</a>
  </div>

  <div data-role="footer" data-theme="b" data-position="fixed">
    <h1>Footer Text</h1>
  </div>
</div>

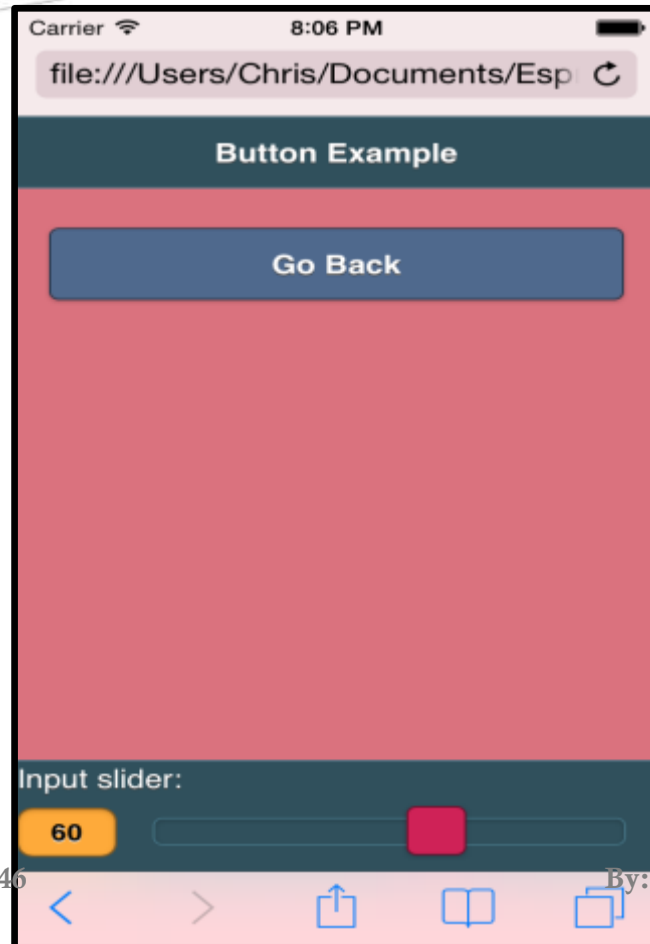
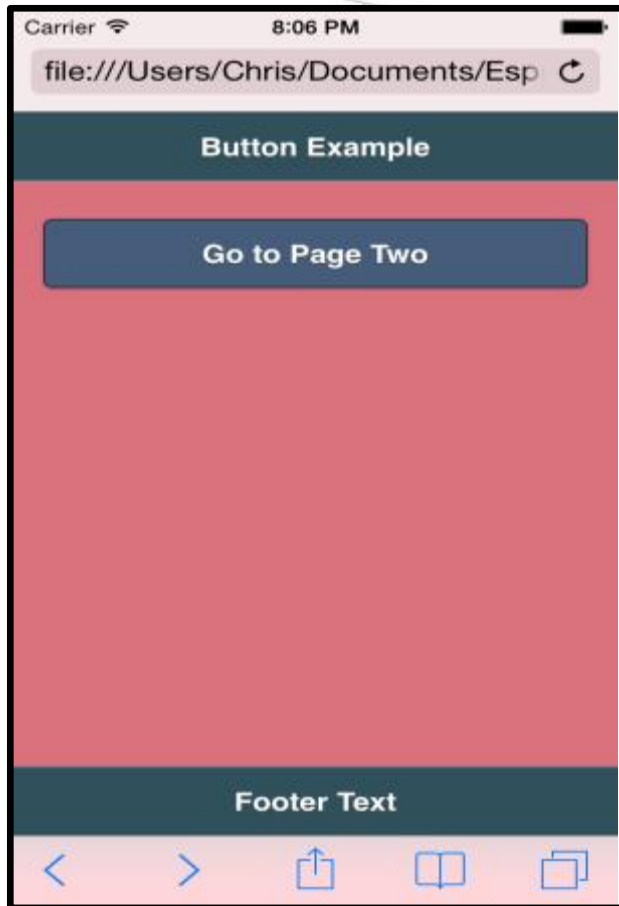
<div data-role="page" id="B">
  <div data-role="header" data-theme="b">
    <h1>Button Example</h1>
  </div>

  <div data-role="main" class="ui-content">
    <a href="#" class="ui-btn ui-corner-all ui-shadow" data-rel="back">Go Back</a>
  </div>

  <div data-role="footer" data-theme="b" data-position="fixed" data-mini="true">
    <label for="slider-1">Input slider:</label>
    <input type="range" name="slider-1" id="slider-1" value="60" min="0" max="100" />
  </div>
</div>

</body>
</html>
```

The Back Button



Toolbars

- 💧 In jQuerymobile there are two basic types of toolbars: Header bars and Footer bars
- 💧 The Header bar serves as the page title, Usually contains a page title and up to two buttons
- 💧 The Footer bar is usually the last element on a page, usually contains a combination of text and buttons
- 💧 jQuerymobile includes a **navbar** widget that turns an unordered list into a horizontal button bar, which works well as a footer bar

Header Bars

- The header is a toolbar at the top of the page that usually contains the page title text and optional buttons positioned to the left and/or right of the title for navigation or actions
- The header toolbar is themed with the “a” swatch by default(black) but it is easy to change the theme color

Creating a Header Bar

```
<div data-role="header" data-position="inline">  
  <a href="index.html" data-icon="delete">Cancel</a>  
  <h1>Edit Contact</h1>  
  <a href="index.html" data-icon="check">Save</a>  
</div>
```



Footer Bars

- The footer bar has the same basic structure as the header except it uses the data-role = “footer” attribute
- The primary difference between the header and footer bars are that the footer is designed to be less structured than the header to allow for more flexibility
- The footer toolbar will be themed with the “a” swatch by default(black)

Creating a Footer Bar & Adding Buttons

- Any link added to the footer will automatically be turned into a button. Buttons in toolbars are set to inline styling so the button is only as wide as the text and icons it contains

```
<div data-role="footer" class="ui-bar">
  <a href="index.html" data-role="button" data-icon="delete">Remove</a>
  <a href="index.html" data-role="button" data-icon="plus">Add</a>
  <a href="index.html" data-role="button" data-icon="arrow-u">Up</a>
  <a href="index.html" data-role="button" data-icon="arrow-d">Down</a>
</div>
```

This creates this toolbar with buttons sitting in a row



List Views

```
<div data-role="page" id="home">

  <div data-role="header">
    <h1>Lists Demo</h1>
  </div>

  <div data-role="content">

    <h2 style="padding: 1em 0;">A list view</h2>

    <ul data-role="listview" data-inset="true">
      <li>Cat</li>
      <li>Dog</li>
      <li>Mouse</li>
      <li>Squirrel</li>
    </ul>

    <h2 style="padding: 1em 0;">A list of links</h2>

    <ul data-role="listview" data-inset="true">
      <li><a href="#">About this app</a></li>
      <li><a href="#">Buy ice cream</a></li>
      <li><a href="#">Find a store</a></li>
    </ul>

    <h2 style="padding: 1em 0;">Nested lists</h2>

    <ul data-role="listview" data-inset="true">
      <li>Play
        <ul>
          <li><a href="#">Easy</a></li>
          <li><a href="#">Medium</a></li>
          <li><a href="#">Hard</a></li>
        </ul>
      </li>
      <li>Settings
        <ul>
          <li><a href="#">Graphics</a></li>
          <li><a href="#">Sound</a></li>
        </ul>
      </li>
    </ul>
```

```
      <li><a href="#">Device</a></li>
    </ul>
  </li>
  <li>Highscores
    <ul>
      <li><a href="#">View</a></li>
      <li><a href="#">Submit</a></li>
      <li><a href="#">Reset</a></li>
    </ul>
  </li>
</ul>
```

```
<h2 style="padding: 1em 0;">A split button list with filter</h2>
```

```
<ul data-role="listview" data-inset="true" data-filter="true">
  <li>
    <a href="#">The Grapes of Wrath</a>
    <a href="#">Buy This Book</a>
  </li>
  <li>
    <a href="#">The Trial</a>
    <a href="#">Buy This Book</a>
  </li>
  <li>
    <a href="#">A Tale of Two Cities</a>
    <a href="#">Buy This Book</a>
  </li>
</ul>
```

```
<h2 style="padding: 1em 0;">A list with count bubbles</h2>
```

```
<ul data-role="listview" data-inset="true">
  <li><a href="#">Superwidgets</a> <span>14</span></li>
  <li><a href="#">Megawidgets</a> <span>0</span></li>
  <li><a href="#">Wonderwidgets</a> <span>327</span></li>
</ul>

</div>

</div>
```


List Views

Lists Demo

A list view

Cat
Dog
Mouse
Squirrel

A list of links

About this app	>
Buy ice cream	>
Find a store	>

Nested lists

Play	>
Settings	>
Highscores	>

A split button list with filter

Filter results...

The Grapes of Wrath	>
The Trial	>
A Tale of Two Cities	>

By: Kanika Sharma

List Views

A list with count bubbles

SuperWidgets 14



MegaWidgets 0



WonderWidgets 327



jQuery Mobile Events

Touch, Orientation, Page



Events in jQuery Mobile

- 💧 jQuery mobile offers several custom events
- 💧 Touch, mouse, and window events
- 💧 They can be bound to for use in both handheld and desktop environments
- 💧 Can be bound to using **live()** or **bind()**

Touch Events

- 💧 Tap: After a quick, complete touch event
- 💧 Taphold: after a held complete touch event
- 💧 Swipe: Horizontal drag of 30px or more, within 1 second
- 💧 Swipeleft: When a swipe event occurred moving in the left
- 💧 Swiperight: When a swipe event occurred moving in the right

Orientation Change Event

- 💧 **Orientationchange**: triggers when a device orientation changes (by turning it vertically or horizontally).
- 💧 Holds a 2nd argument, which contains an orientation property of either “**portrait**” or “**landscape**”
- 💧 Also adds classes to the HTML element to allow for leveraging in your CSS.
- 💧 Binds to the resize event when orientationchange is not natively supported.

Scroll Events

- 💧 Scrollstart:
 - 💧 Triggers when a scroll begins
- 💧 Scrollstop:
 - 💧 Triggers when a scroll finishes

Themes

- Theme is the term used to describe the styling of elements in JQuery Mobile.
- A theme includes settings for including font family, drop shadows for overlays, and corner radius values for buttons and boxes, etc.
- In addition, the theme can include multiple color *swatches*, each with color values for bars, content blocks, buttons and list items, and font

Swatches

- 💧 5 Basic swatches
- 💧 Black, Blue, Light Grey, Dark Gray and Yellow

Bar A - [Link](#)

Bar B - [Link](#)

Bar C - [Link](#)

Bar D - [Link](#)

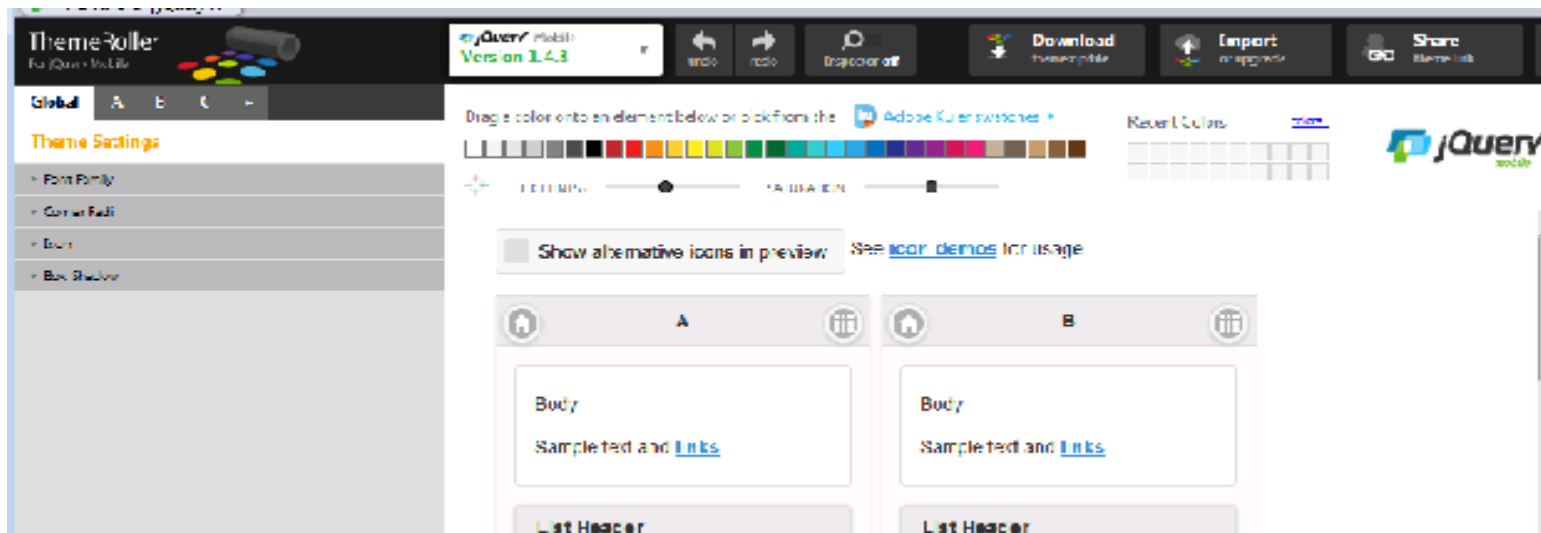
Bar E - [Link](#)

More on Swatches

- 💧 Applying a swatch is achieved by specifying the ‘**data-theme**’ tag on an element.
- 💧 The default theme is “a”, which is Black, and is used when **data-theme** is not specified.
- 💧 ‘**data-theme**’ can be specified at the ‘role=page’ level.
- 💧 A swatch can be applied to individual elements in the page that is different from the default for the page.

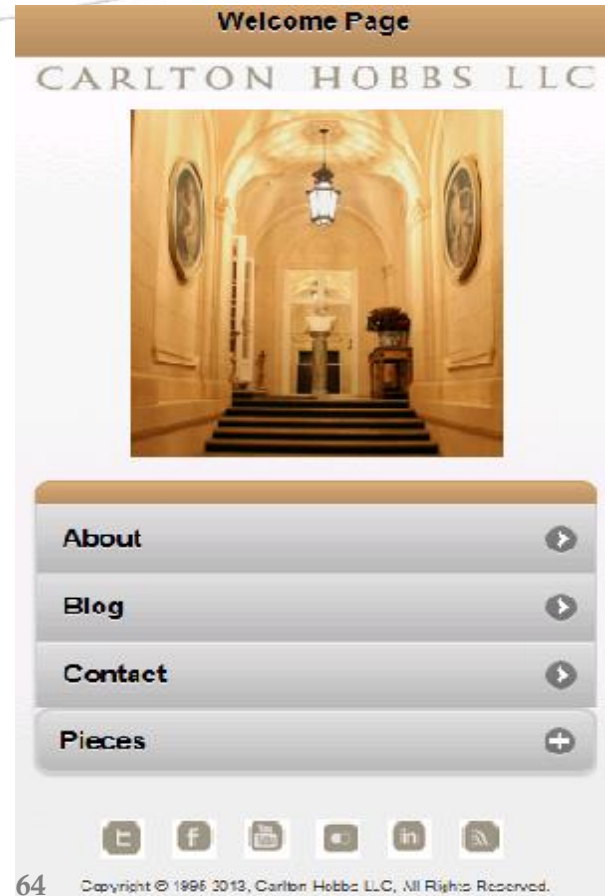
The Theme Roller

- jQuery Mobile has a utility call the ‘Theme Roller’ where you can create your own swatch and apply a data=theme letter “F”, ”G”, ”H” etc.



Theme Roller

- Themes can be saved as .CSS files which in turn can be included into your site.



Summary

- 💧 JQuery Mobile is easy to learn and use.
- 💧 Offers a consistent rendering across all browsers.
- 💧 Aesthetically pleasing page layout and element styling.
- 💧 No Javascript and CSS knowledge required.
- 💧 Leaves the IBM/I programmer to focus on the substance of the page and not the style.