Mobile Web Applications
Unit 2

jQuery Mobile

Digital Skills Academy

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This Session

- Recap of jQuery
- You might not need jQuery…
- jQuery Mobile.
  - Anatomy of a page
  - Single and multi page sites
  - Page transitions
  - Dialog
  - Applying transitions to dialogs and forms
- Mobile Emulation
- jQuery Mobile Events

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Introduction to jQuery Mobile

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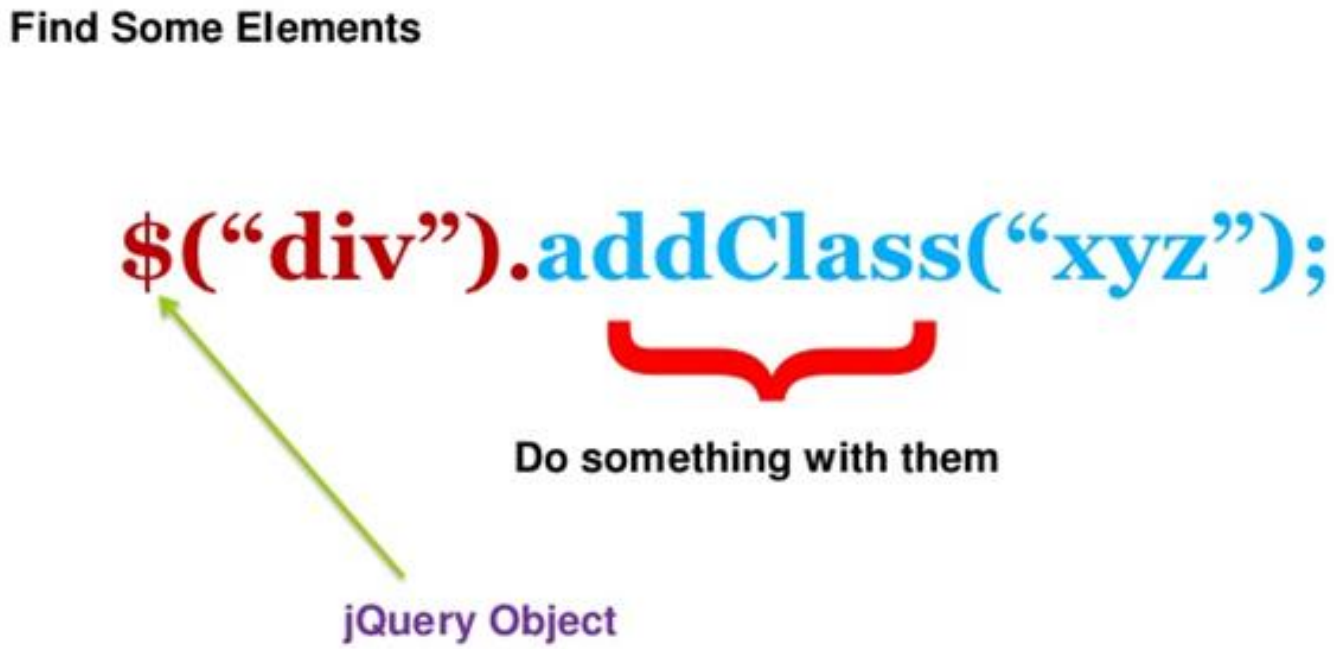
Recap of jQuery



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You Might not Need jQuery

- http://youmightnotneedjquery.com/
- We have been using jQuery to speed up our development time, but remember:
  - jQuery is just a JavaScript library
    - There is not anything we could not write ourselves
  - Using external libraries slows down your app
    - Both download and execution
  - Using libraries ties you to someone else's development ideology
    - Set ways of achieving common goals
- At the very least, make sure you know what jQuery is doing for you, and what it is not.

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Overview

- A touch optimized UI framework built with jQuery and HTML5
- Also includes functionality from jQuery UI
- Claimed to work well with jQuery 1.7.0 to 1.9.1
  - But seems to be fine in later versions too
- Feature rich but lightweight
- Built on progressive enhancement
- Flexible theming system and ThemeRoller tool

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Overview

- Built in Ajax support, animations, transitions, yadda, yadda, yadda
- An impressive feature set, yet remains cross-browser compatible
- Works well with packagers like PhoneGap/Cordova
- Custom events, methods, elements
- Can be applied with mark-up or via a rich API

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A jQuery Mobile Page

- A jQuery Mobile site must start with an HTML5 "doctype" to take full advantage of all of the frameworks features.
  - Older browser will safely ignore this

- References to the CSS, jQuery Mobile and jQuery libraries usually go in the head (but remember that your use case might better suit the foot of the page for some of these).

```
<!DOCTYPE html>
<html>
    <head>
        <meta name="viewport" content="width=device-width, initial-scale=1">
        <link rel="stylesheet" href="http://code.jquery.com/mobile/1.2.0/jquery.mobile-1.2.0.min.css" />
        <script src="http://code.jquery.com/jquery-1.8.2.min.js"></script>
        <script src="http://code.jquery.com/mobile/1.2.0/jquery.mobile-1.2.0.min.js"></script>
    </head>
```


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A jQuery Mobile Page

- Note the meta tag “viewport”, also in the head

```
<meta name="viewport" content="width=device-width, initial-scale=1">
```

- If this is not set, many mobile browsers will use a "virtual" page width of around 900 pixels to make it work well with existing desktop sites
- This can cause screens to appear zoomed out and too wide
- By setting the viewport attributes above, the width will be set to the pixel width of the device screen

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Single Page Sites

- The rest of the page is standard mark-up, but includes some unusual custom data attributes:

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

    /*  Just some content...   */

</div>
```

- The data-role attribute tells the browser how to think about this portion of the page. Setting the value to “page” tells it to think of this DIV as a complete page. We can add child elements like so:

```
<div data-role="page">
    <div data-role="header">...</div>
    <div data-role="content">...</div>
    <div data-role="footer">...</div>
</div>
```


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Multi-Page Sites

- By using multiple “page” sections, JQM allows us to have many virtual pages within one document
- Why might we want to do this?

```
<div data-role="page">
    <div data-role="header">...</div>
    <div data-role="content">...</div>
    <div data-role="footer">...</div>
</div>

<div data-role="page">
    <div data-role="header">...</div>
    <div data-role="content">...</div>
    <div data-role="footer">...</div>
</div>

<div data-role="page">
    <div data-role="header">...</div>
    <div data-role="content">...</div>
    <div data-role="footer">...</div>
</div>
```


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Multi-Page Sites

- Multiple "pages" that are **loaded together** by stacking multiple divs with a data-role of "page"
- A single download for the user, changing pages does not make any further HTTP request
  - Can browse offline
  - Faster page transitions
  - Better use of limited mobile bandwidth
- Each "page" block needs a unique id (id="foo") that will be used to link internally between "pages" (href="#foo")
- When a link is clicked, the framework will look for an internal "page" with the id and transition it into view

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Linking “Pages”

```
<div data-role="page" id="foo">
    Some content <br/>
    <a href ="#foo2"> Go to Page Foo 2 </a>
</div>

<div data-role="page" id="foo2">
    Some content <br/>
    <a href ="#foo"> Go to Page Foo </a>
</div>
```


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Transitioning Between Pages

- We can enable animated page transitions, both between virtual pages and external documents
- JQM will parse any links and silently turn the href value into an Ajax call (i.e. using JS to pull remote content)
- JQM adds a loading spinner while fetching the content
- We can disable this behaviour by setting the link properties:

  rel="external", data-ajax="false"

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Animated Transitions

- JQM provides six CSS-based transitions which we can apply to any page changes, or form submissions.

http://demos.jquerymobile.com/1.0/docs/pages/page-transitions.html

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Animated Transitions

- We can apply the transition with mark-up or via the API
- I'll pop
- Hitting the back button will cause the framework to apply the reverse CSS rule. For example, **slide.out** where **slide.in** has occurred.

```
.slide.in {
        -webkit-transform: translateX(0);
        -webkit-animation-name: slideinfromright;
    }

.slide.out {
        -webkit-transform: translateX(-100%);
        -webkit-animation-name: slideouttoleft;
    }
```


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Activity 1

YouTube: Introducing jQuery Mobile

- A video on JQM with DreamWeaver CS6

- http://www.youtube.com/watch?v=dY1-pz5TgIw

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Mobile Emulation & jQuery Mobile

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Dialogs

- Any page can be used as the content for a dialog box, simply by adding the custom data attribute:
  - **data-rel = “dialog”**

- Like so:
- **Open dialog**

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Dialog Transitions

- The default behaviour for a JQM dialog is to “pop” open
- But of course, we can override this by applying another data-transition:
  - data-transition=“slidedown”
  - data-transition=“flip”
  - etc.
- **Open dialog**

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Closing a Dialog

- Any clicked links will close the dialog, however we can explicitly add a close button by using the data attribute:
  - **data-rel="back“**
- Or we can call the dialogs close() method:
  - **$('.ui-dialog').dialog('close');**

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Mobile Emulation

- Testing your mobile app does not mean you need to buy several phones - many software emulators exist

- For examples, see this list:
- http://www.webdesignerdepot.com/2012/11/6-free-mobile-device-emulators-for-testing-your-site/
- Check out this web based emulator:
- http://www.mobilephoneemulator.com/

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jQuery Mobile Events

- jQuery Mobile offers several custom events that build upon native events to create useful hooks for development

- A full list can be found on the API documentation site:
  - http://api.jquerymobile.com/category/events/
- Let us examine a few of them…

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jQuery Mobile Events

- Swiping:

swipe

Triggered when a horizontal drag of 30px or more (and less than 75px vertically) occurs within 1 second duration.

swipeleft

Triggered when a swipe event occurs moving in the left direction.

swiperight

Triggered when a swipe event occurs moving in the right direction.

- Note that you can still test these events on a computer - just click and drag the mouse!

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Swipe Event

- Triggered when a horizontal drag of 30px or more (and less than 75px vertically) occurs within a 1 second duration
- These values can be overridden!
  - **$.event.special.swipe.verticalDistanceThreshold**
- We can trap the event and use it to trigger our own code:
  - **jQuery(window).on("swipe", function(event) { ... })**

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Swipe Event

- Use a swipe to change colour
- Imagine that we have a CSS class called red-hot
- Let us apply the red-hot class when our DIV is touched:

```
<div class="mySwipeZone"> Some text... </div>

<script>
$(function(){
  // Bind the swipeHandler callback function to the swipe event on div.box
  $( "div.mySwipeZone" ).on( "swipe", swipeHandler );

  // Callback function references the event target and adds the 'swipe' class to it
  function swipeHandler( event ){
    $( event.target ).addClass( "red-hot" );
  }
});
</script>
```


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Tap Events

- Tap events are the gestural equivalent of click events:

tap

Triggered after a quick, complete touch event.

taphold

Triggered after a sustained complete touch event.

```
<div class="myTapTarget"> Some text... </div>


<script>
$(function(){
  $( "div.myTapTarget" ).bind( "tap", tapHandler );

  function tapHandler( event ){
    $( event.target ).addClass( "red-hot" );
  }
});
</script>
```


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Activity 2

YouTube: The Future of Mobile Technology

The Future of Mobile Technology

- http://www.youtube.com/watch?v=NsAKzTvrMW4

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Summary

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Summary

What We Covered

- jQuery Mobile
  - Anatomy of a page
  - Single page sites
  - Page transitions
  - Dialog
  - Applying transitions to dialogs and forms
- Mobile Emulation
  - Useful for testing
- jQuery Mobile Events
  - Swipe/SwipeLeft/SwipeRight
  - Tap/TapHold

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