

CS 696 Emerging Web and Mobile Technologies
Spring Semester, 2011
Doc 8 Location, Web Workers, Mobile App Start
Feb 8, 2011

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References

jQuery Mobile Documentation, <http://jquerymobile.com/test/>

HTML5 & CSS3 Develop with Tomorrow's Standards Today, Hogan, Pragmatic Programmers

Building iPhone Apps with HTML, CSS, and JavaScript, Jonathan Stark

Building Android Apps with HTML, CSS, and JavaScript, Jonathan Stark

Location

```
<html lang="en">
<head>
  <meta charset="utf-8" />
  <title>Untitled</title>
</head>
<body onload="navigator.geolocation.getCurrentPosition(function(position) {
  alert(position.coords.latitude);
  alert(position.coords.longitude);
});">

</body>
</html>
```

Location on Desktop browsers

Google street view cars record location of all wi-fi spots

Web Workers

JavaScript threads in browser

Heavy-weight threads

High start-up cost

High per-instance memory

Supported in

Firefox 3.5+

Chrome 3+

Safari 4+

Opera 10.6+

Not supported in

Internet Explorer

iOS

Android

Web Workers

Web workers don't have access to DOM
Except for XMLHttpRequest

Can have multiple workers
Workers can communicate with each other

Example

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>Worker example: One-core computation</title>
  </head>
  <body>
    <p>The highest prime number discovered so far is:
<output id="result"></output></p>
    <script>
      var worker = new Worker('worker.js');
      worker.onmessage = function (event) {
        document.getElementById('result').textContent = event.data;
      };
    </script>
  </body>
</html>
```

worker.js

```
var n = 1;
search: while (true) {
  n += 1;
  for (var i = 2; i <= Math.sqrt(n); i += 1)
    if (n % i == 0)
      continue search;
  // found a prime!
  postMessage(n);
}
```


worker.onmessage

Callback method for messages from thread

```
var worker = new Worker('worker.js');  
  worker.onmessage = function (event) {  
    document.getElementById('result').textContent = event.data;  
  };
```

postMessage

How thread sends message to main thread

```
var n = 1;
search: while (true) {
    n += 1;
    for (var i = 2; i <= Math.sqrt(n); i += 1)
        if (n % i == 0)
            continue search;
    // found a prime!
    postMessage(n);
}
```

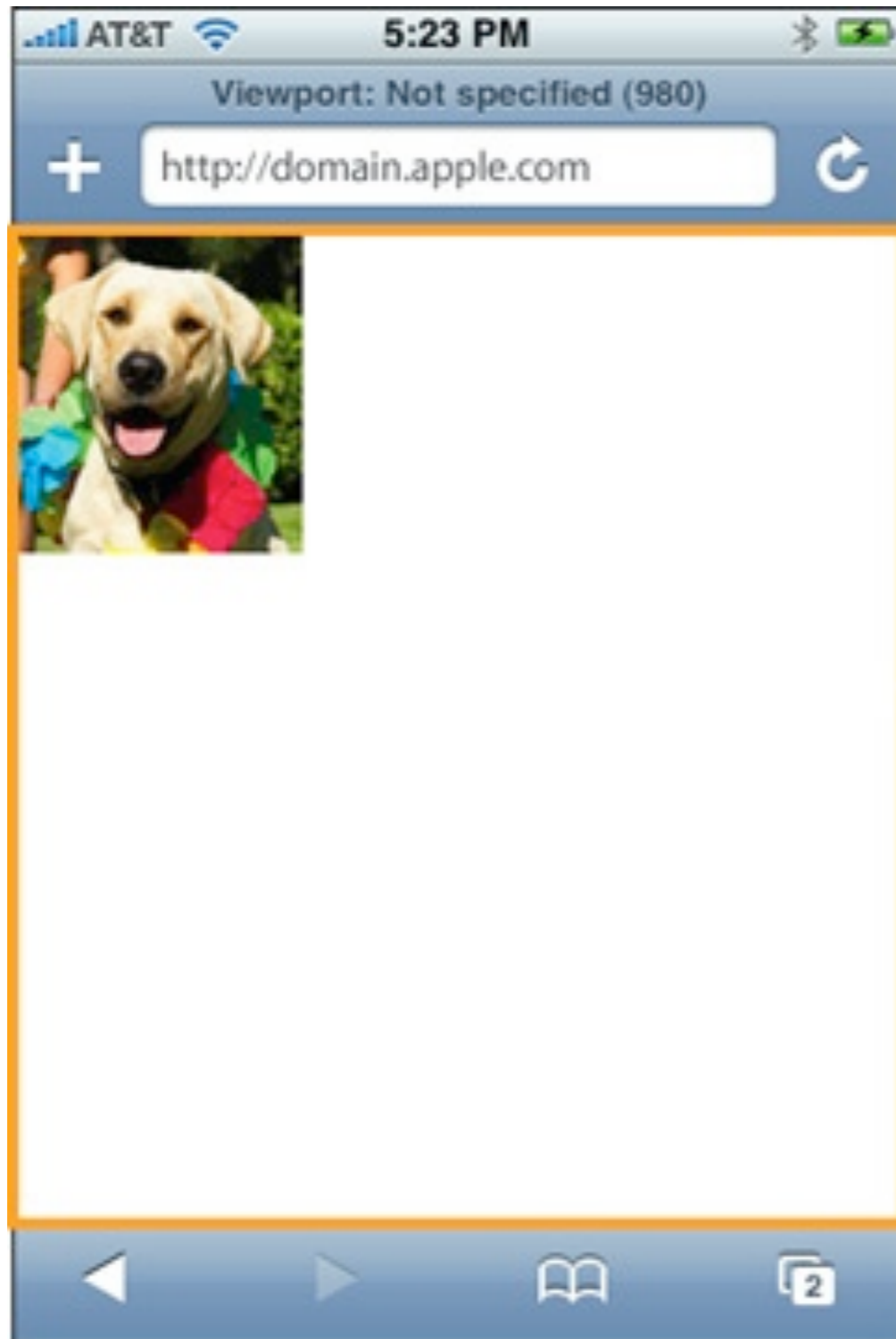
Mobile Web Apps

iPhone Browser Sizes



Viewport

Region of the screen used to display part of image



Mobile viewport

Fixed size

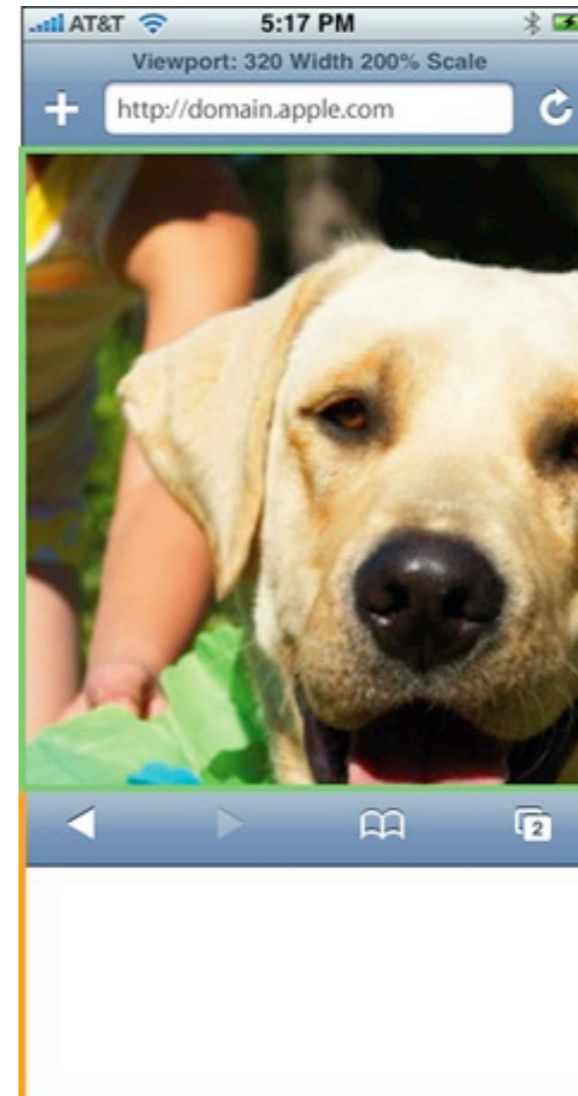
Can change scale

— Viewport
default width = 980 pixels

Viewport & Scale



Viewport width = 320 pixels scale = 1.0



Visible area

Viewport width = 320 pixels scale = 1.5

```
<meta name="viewport"  
content="user-scalable=no,  
width=device-width" />
```

width=device-width

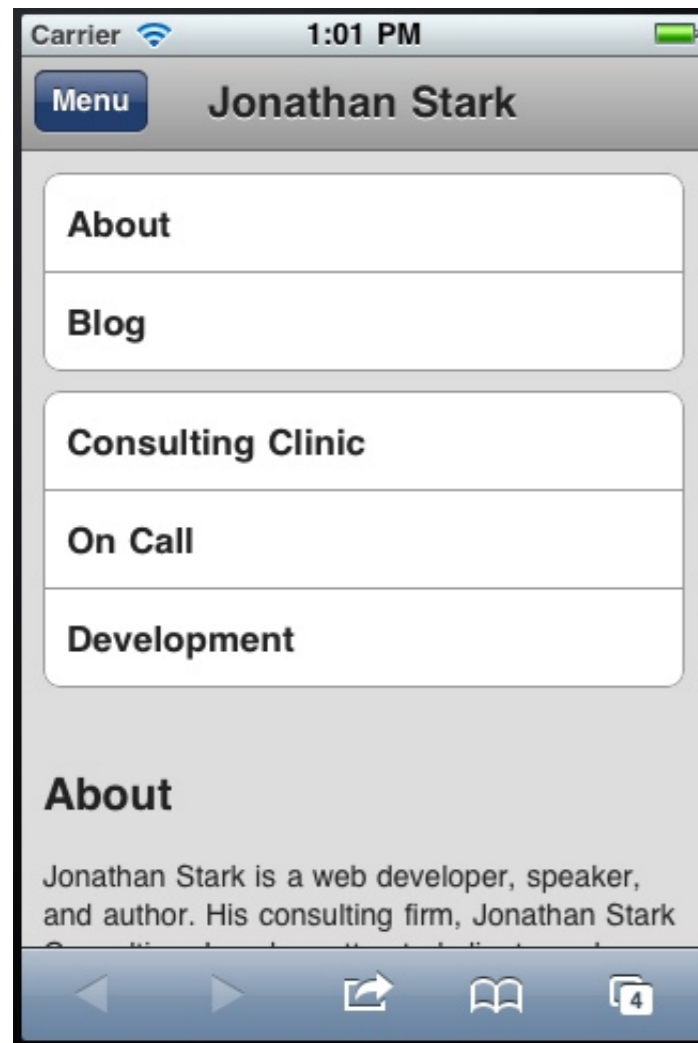
make the view port same size as the device

user-scalable=no

Don't let user zoom in or out

Common settings for web app to look like iPhone app

The iPhone Look



```
<body>
```

```
<div id="container">
```

```
<div id="header">
```

```
<h1><a href=".">Jonathan Stark</a></h1>
```

```
<div id="utility">
```

```
<ul>
```

```
<li><a href="about.html">About</a></li>
```

```
<li><a href="blog.html">Blog</a></li>
```

```
</ul>
```

```
</div>
```

```
<div id="nav">
```

```
<ul>
```

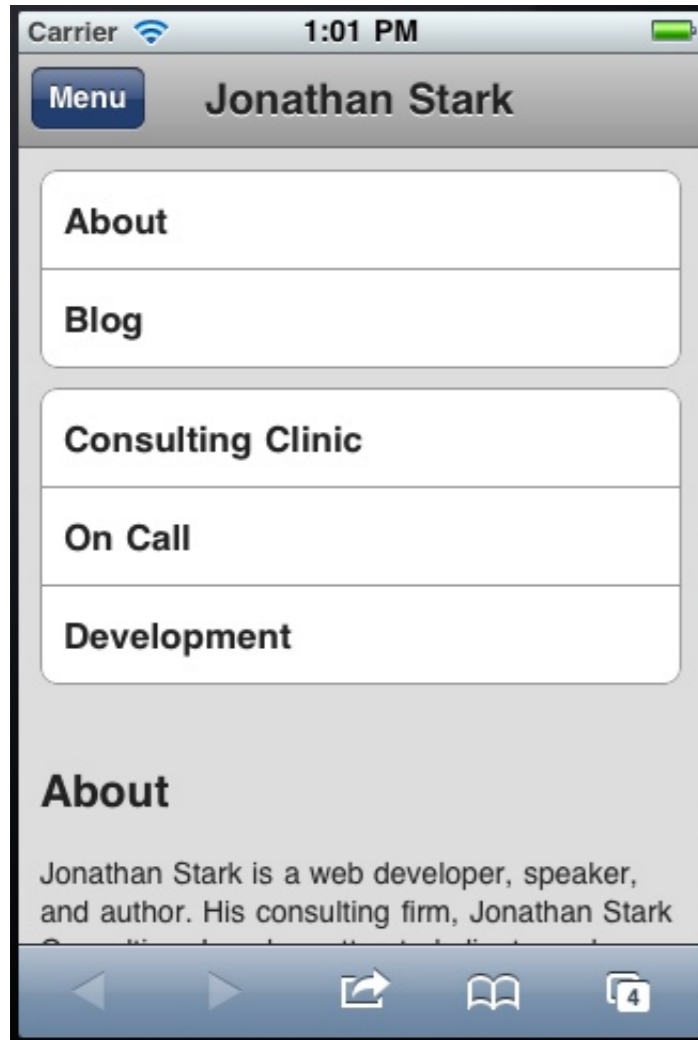
```
<li><a href="consulting-clinic.html">Consulting Clinic</a></li>
```

```
<li><a href="on-call.html">On Call</a></li>
```

```
<li><a href="development.html">Development</a></li>
```

```
</ul>
```


The iPhone Look (same on Android)



```
#header ul li a {
    background-color: #FFFFFF;
    border: 1px solid #999999;
    color: #222222;
    display: block;
    font-size: 17px;
    font-weight: bold;
    margin-bottom: -1px;
    padding: 12px 10px;
    text-decoration: none;
}

#header ul li:first-child a {
    -webkit-border-top-left-radius: 8px;
    -webkit-border-top-right-radius: 8px;
}

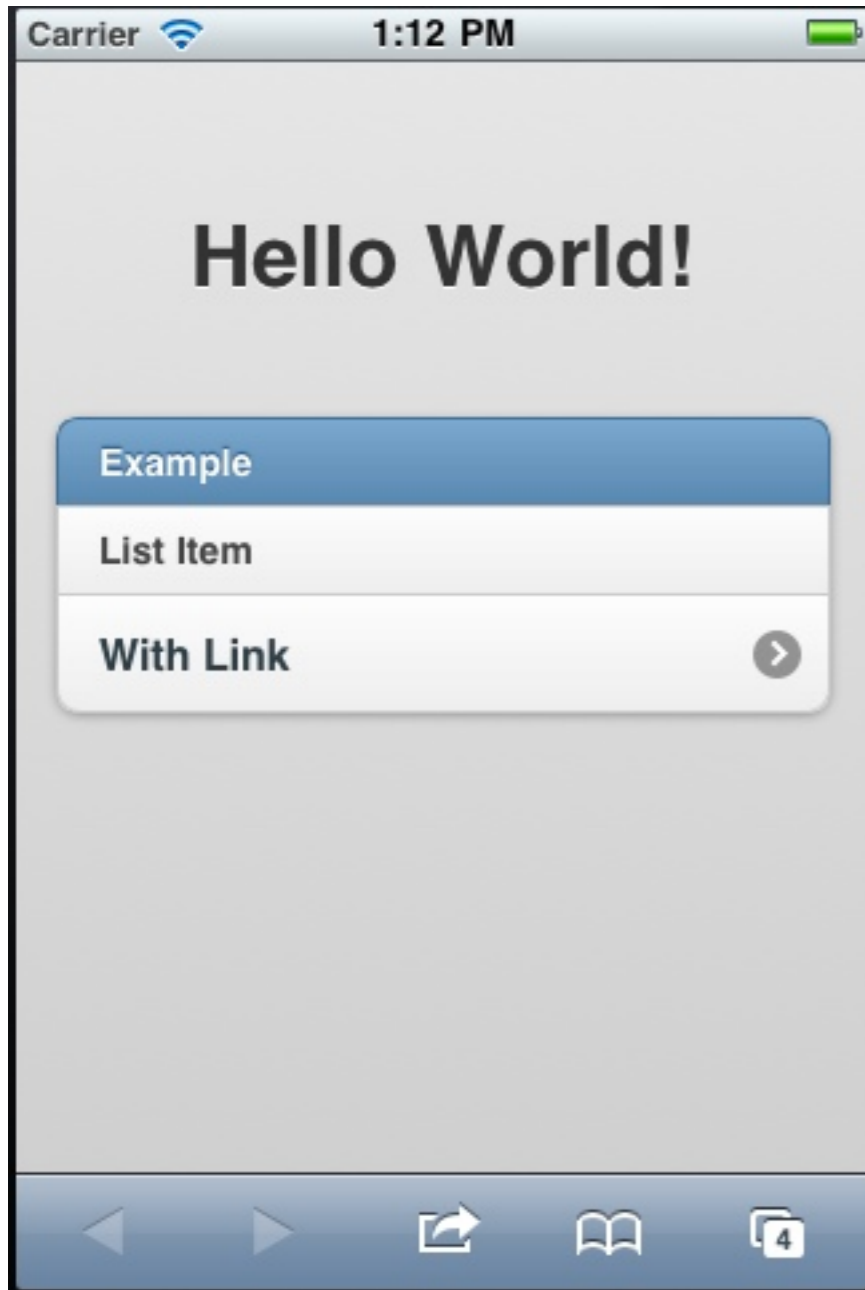
#header ul li:last-child a {
    -webkit-border-bottom-left-radius: 8px;
    -webkit-border-bottom-right-radius: 8px;
}
```

jQuery Mobile

Touch-Optimized Web Framework for Smartphones & Tablets

Alpha 3 release Feb, 2011

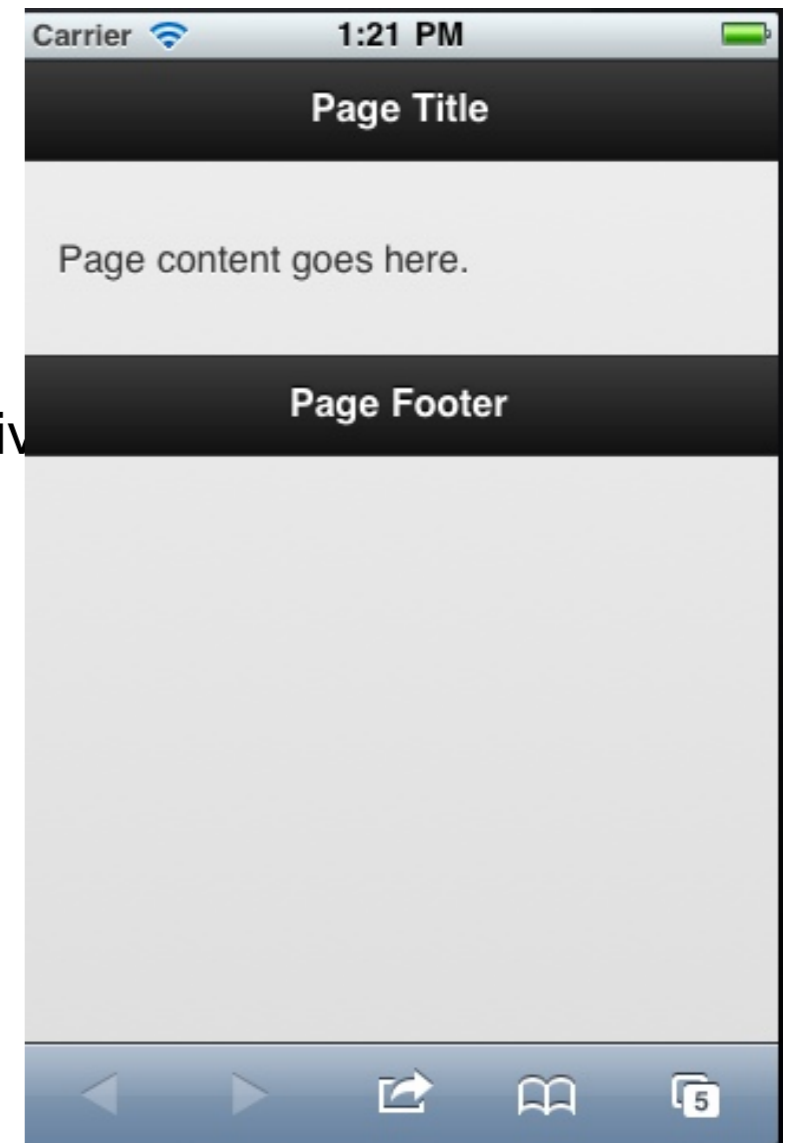
jQuery Mobile Example



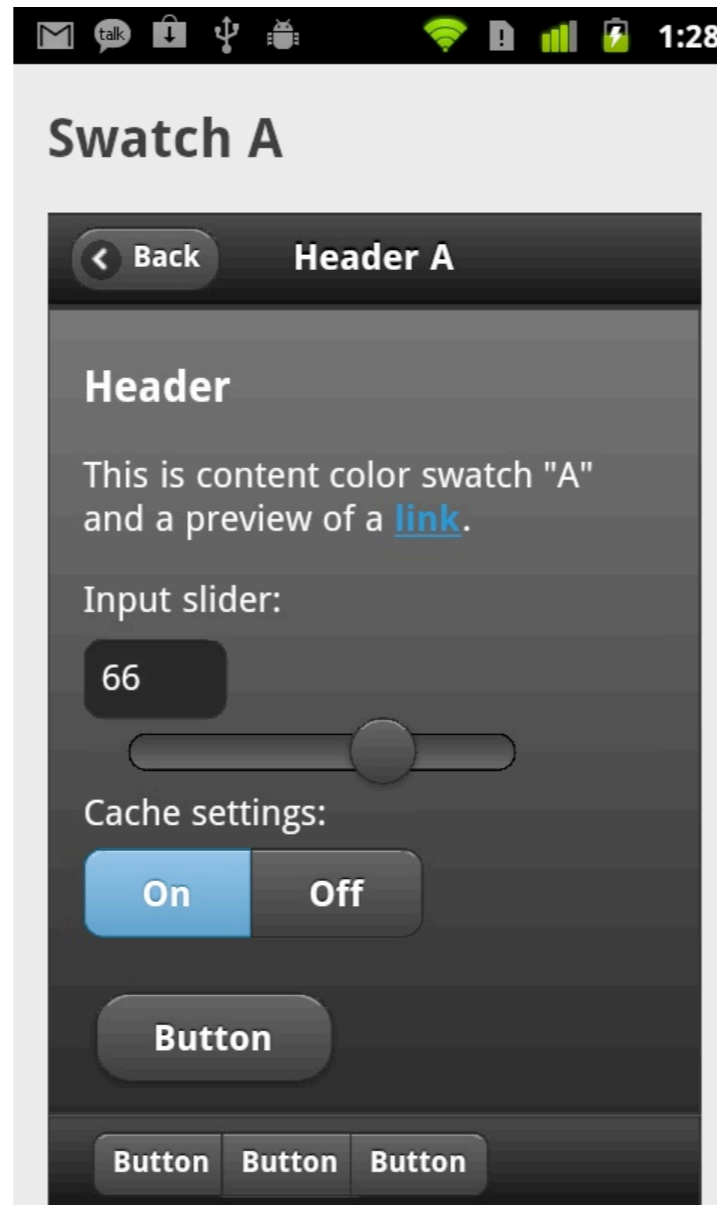
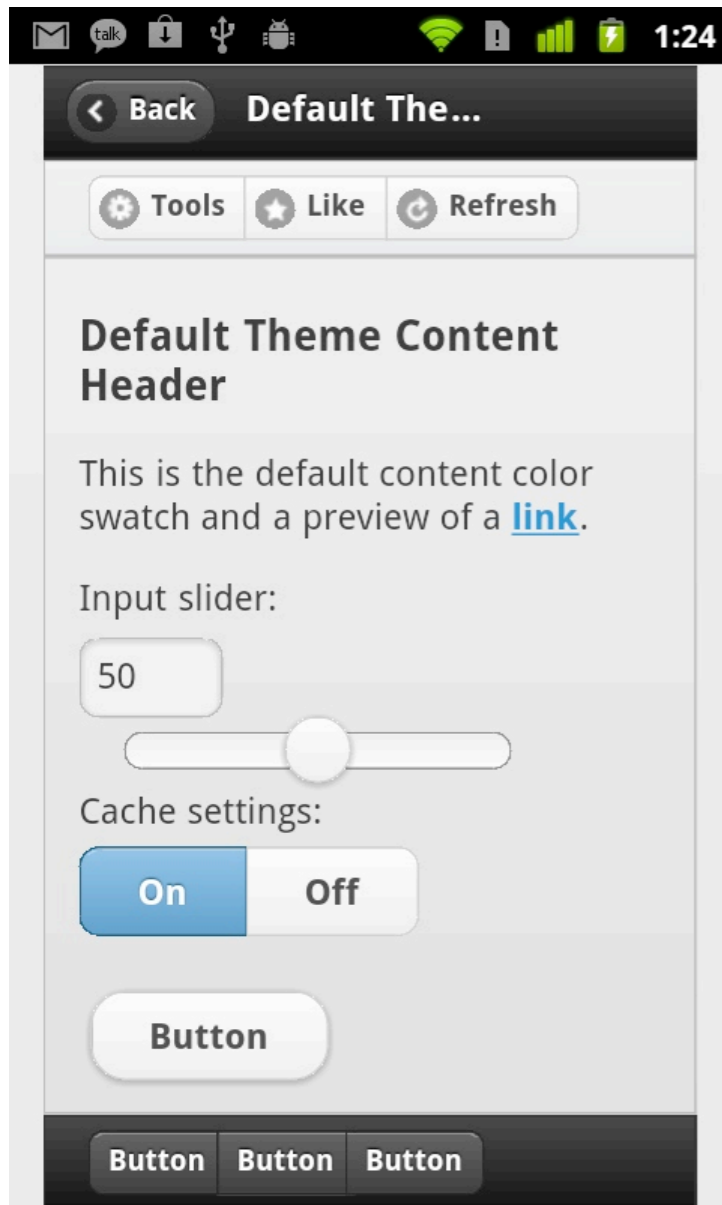
```
<body>
<div data-role="page" data-theme="b">
  <div id="jqm-homeheader">
    <h1>
      Hello World!
    </h1>
  </div>
  <div data-role="content">
    <ul data-role="listview" data-inset="true"
data-theme="c" data-dividertheme="b">
      <li data-role="list-divider">Example</
li>
      <li>List Item</li>
      <li><a href="page.html">With Link</
a></li>
    </ul>
  </div>
</div>
</body>
```

Single Page Structure

```
<!DOCTYPE html>
<html><head>
  <title>Page Title</title>
  <link rel="stylesheet" href="http://code.jquery.com/mobile/1.0a3/jquery.mobile-1.0a3.min.css" />
  <script type="text/javascript" src="http://code.jquery.com/jquery-1.4.3.min.js"></script>
  <script type="text/javascript" src="http://code.jquery.com/mobile/1.0a3/
jquery.mobile-1.0a3.min.js"></script>
</head>
<body>
<div data-role="page">
  <div data-role="header"> <h1>Page Title</h1></div>
  <div data-role="content"><p>Page content goes here.</p> </div>
  <div data-role="footer">
    <h4>Page Footer</h4>
  </div>
</div>
</body>
</html>
```



Themes



Themes

