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Oracle Application Express: Mobile User Interfaces

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Agenda

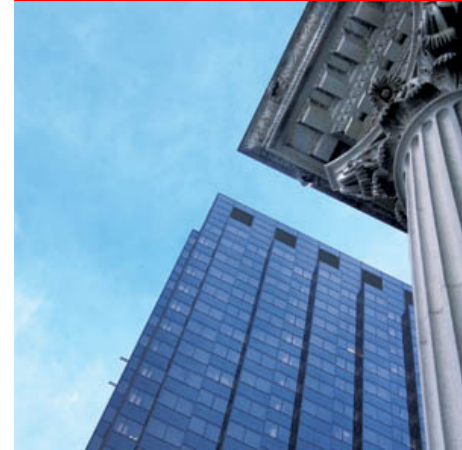
- **Overview**

- Mobile Applications in APEX
- jQuery Mobile Introduction

- **Infrastructure Changes**

- Table-less Forms
- Field Containers
- Mobile Page Templates
- Wizards to Create Mobile Components

- **Building a Mobile Application**

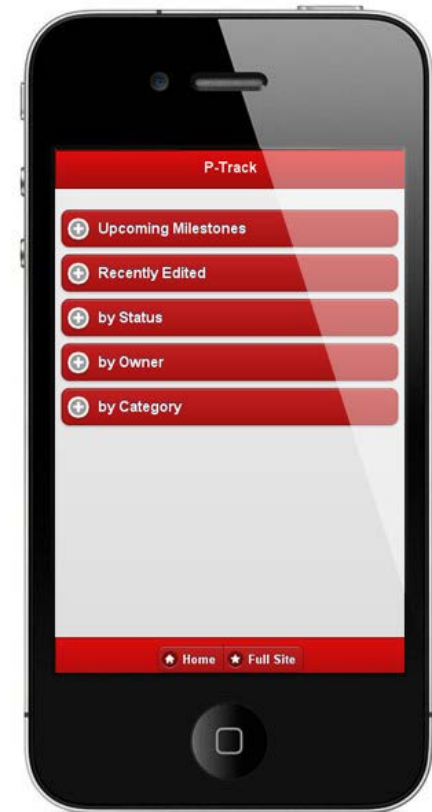


Mobile Applications in Oracle Application Express



Mobile Applications in APEX

- Any APEX application works on modern mobile devices, like iPhone, iPad, Android etc
- However standard applications may not be ideal for smaller screen size
- APEX will provide mobile enabled theme based on jQuery Mobile
- Mobile themes provide a more native user experience
- Optimized for mobile screens and touch interfaces



Mobile Applications in APEX

- APEX themes can be extended with mobile templates
- Allowing for applications to include a mix of mobile and full-size pages
- Dependent on browser type (standard / mobile), user can be redirected to full-size page or mobile page
- Subset of APEX components optimized for mobile use

jQuery Mobile

- Touch-Optimized web framework for smartphones & tablets
- Unified user interface system across all popular mobile device platform
- Built on jQuery and jQuery UI foundation
- Flexible, easily theme-able design

jQuery Mobile

- Wide variety of platforms targeted:
 - Apple iOS
 - Android
 - Blackberry
 - Palm WebOS
 - Windows Phone 7
 - Opera Mobile & Mini
 - Firefox Mobile

jQuery Mobile

- Build on foundation of clean, semantic HTML
- Use of HTML5 custom attributes: data-*
- HTML5 Markup-driven configuration of pages and behavior for fast development and minimal required scripting
- Accessibility features such as WAI-ARIA are tightly integrated

jQuery Mobile - Progressive enhancement

- Progressive enhancement
 - Brings core content and functionality to all mobile, tablet and desktop platforms
 - Rich, installed application-like experience on newer mobile platforms
 - Basic but functional experience on older and less capable devices

Slider:

Font styling:

b i u

Slider: 32

Font styling: b i u

jQuery Mobile

- Custom Events
 - tap
 - taphold
 - swipe (left/right)
 - scroll (start/stop)
 - orientationchange

jQuery Mobile – HTML5 Document

```
<!DOCTYPE html>  
  
<html>  
  <head>  
    <meta charset="utf-8" />  
    <title>jQuery Mobile Page</title>  
  </head>  
  <body>  
  </body>  
</html>
```

jQuery Mobile – CSS and JavaScript

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8" />
    <title>jQuery Mobile Page</title>
    <link rel="stylesheet" href="/jquery.mobile.min.css" />
    <script type="text/javascript" src="/jquery.js">
    <script type="text/javascript" src="/jquery.mobile.min.js" />
  </head>
```

jQuery Mobile – data-role="page"

```
<body>  
  <div data-role="page">  
    <!-- jQuery Mobile page content goes here -->  
  </div><!-- /page -->  
</body>
```

jQuery Mobile – Page data-roles

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


jQuery Mobile Template

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
    <link rel="stylesheet" href="../jquery.mobile.css" />
    <script type="text/javascript" src="../jquery.js"></script>
    <script type="text/javascript" src="../jquery.mobile.js"></script>
  </head>
  <body>

    <div data-role="page">
      <div data-role="header">
        <h1>Page Title</h1>
      </div><!-- /header -->
      <div data-role="content">
        <p>Page content goes here.</p>
      </div><!-- /content -->
      <div data-role="footer">
        <h4>Page Footer</h4>
      </div><!-- /footer -->
    </div><!-- /page -->

  </body>
</html>
```

jQuery Mobile – Multi-Page Documents

```
<body>
<div data-role="page" id="home">
</div><!-- /home page -->
<div data-role="page" id="products">
</div><!-- /products page -->
<div data-role="page" id="services">
</div><!-- /home page -->
<div data-role="page" id="about">
</div><!-- /home page -->
<div data-role="page" id="contact">
</div><!-- /home page -->
</body>
```

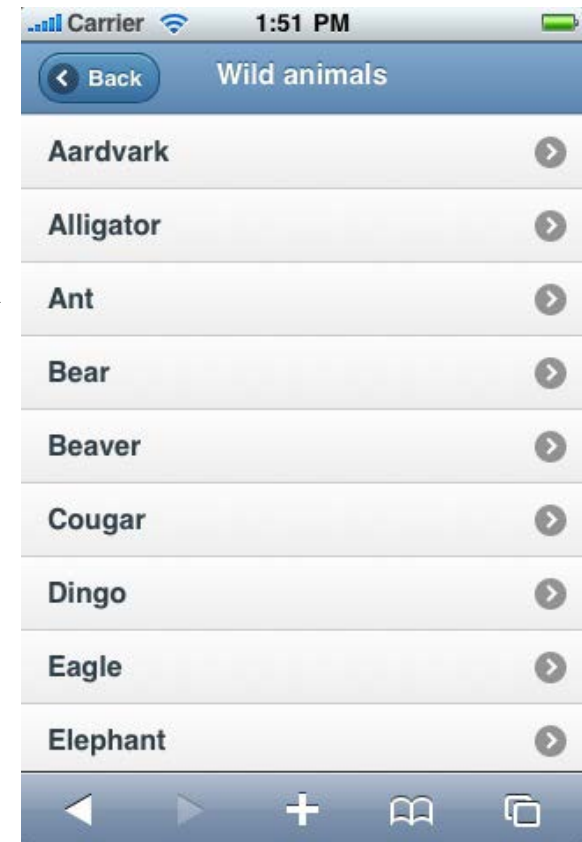
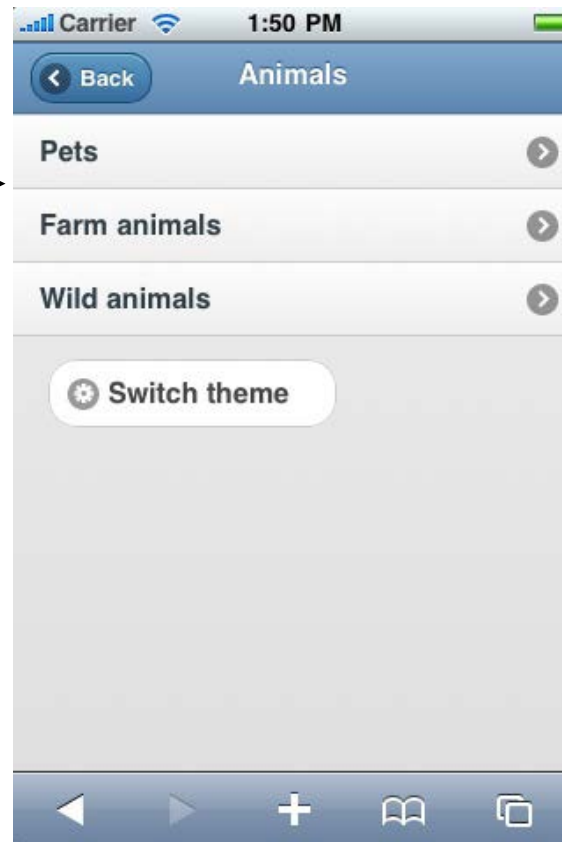
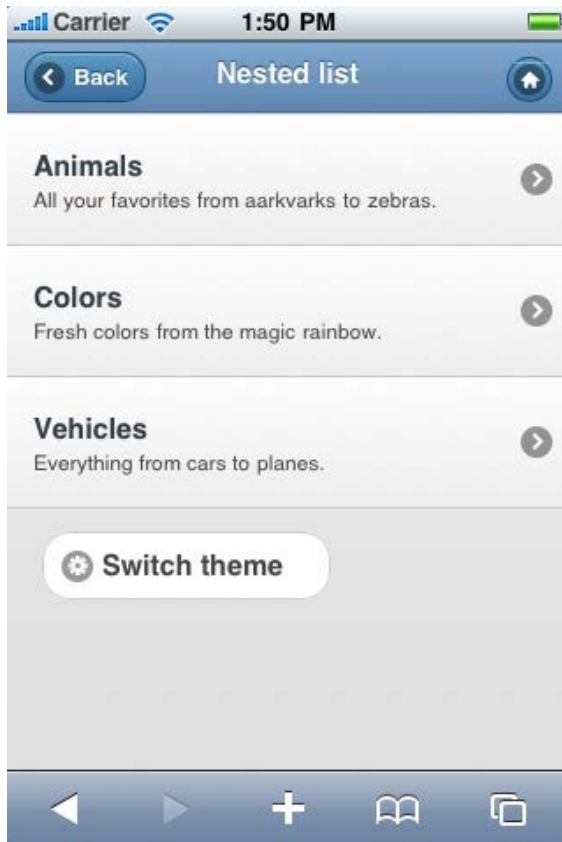
jQuery Mobile

- Responsive Layout
 - Orientation Classes: HTML elements provide class of “portrait” and “landscape”, depending on orientation of device
 - Min/Max Width Breakpoint Classes: 320, 480, 768, 1024
 - Used by many components, e.g. in case of form elements, used to float labels besides or above elements
 - Customizable via API: `$.mobile.addResolutionBreakpoints`
 - Media Queries using CSS
 - Test for screen media type, min/width, iOS retina, etc

jQuery Mobile - Transitions

- Page Transitions
 - CSS-based transition effects (from jQtouch)
 - slide, slideup, slidedown, pop, fade, flip
 - Used when navigating to new page
 - Reverse transition for back button
 - Content loaded via AJAX into DOM of current page

jQuery Mobile - Nested Lists – Drillable Pages



jQuery Mobile

- Rich theming system
- Full control over page style
- data-theme attribute to select lettered theme color swatches (A-E)

Bars

The default theme contains the following five Bar styles:

Bar A

Bar B

Bar C

Bar D

Bar E

Lists & Buttons

Each swatch also includes default styles for interactive elements like list items and buttons.

List item



List item



List item



List item



List item



List item



List item



List item



List item



List item



Infrastructure Changes in Oracle Application Express

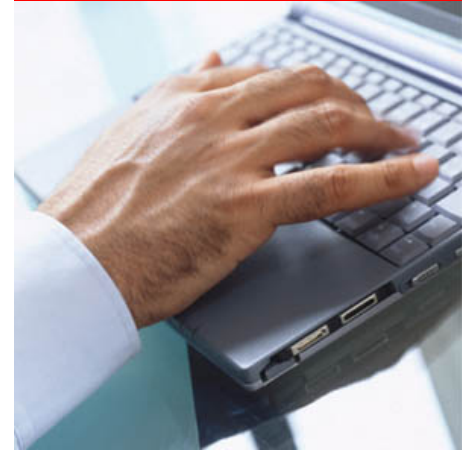


Table-less Forms

- Form regions in APEX are typically rendered in a HTML table grid to allow for a flexible form layout
- Many frameworks, such as jQuery Mobile require a specific HTML structure when rendering form elements
- APEX 4.1 allows for rendering form regions without an HTML table
- The table-less form layout is triggered by using a mobile page templates
- Non-mobile applications can also take advantage of this feature on a per region basis, controlled by the region template

Field Containers

- APEX form items generally include a label
- Customizable via label templates
- Label templates now support field containers, i.e. HTML that encloses label and item
- Added support for label templates to tabular forms
- Use label templates to generate jQuery Mobile-compliant form element syntax:

```
<div data-role="fieldcontain">  
  <label for="name">Text Input:</label>  
  <input type="text" name="name" id="name" value="" />  
</div>
```

Mobile Page Templates

- Page templates provide page mode selector:
 - Standard Browser
 - Mobile Browser
- Mobile-enabled page templates include jQuery Mobile Java Script and CSS
- Omit Java Script and CSS not needed for mobile
- When creating pages and components for page using mobile templates, only mobile-enabled options are shown

Wizards to Create Mobile Components

- Create page wizard shows mobile option for applications that have a mobile page template defined
- Region wizard automatically shows mobile option when used on page using mobile template
- Selecting mobile reduces available components to those that are optimized for mobile experience
- Wizard selects default mobile templates for regions, reports, etc based on mobile defaults in theme attributes



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D E M O N S T R A T I O N

Building a Mobile Application



ORA



Information:

<http://otn.oracle.com/apex>

Hosted Development:

<http://apex.oracle.com>

Hardware and Software Engineered to Work Together

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