Best Practices for Web Apps

See also

- Pixel-Perfect UI in the WebView
- Creating a Mobile-First Responsive Web Design
- High DPI Images for Variable Pixel Densities

Developing web pages and web applications for mobile devices presents a different set of challenges compared to developing a web page for the typical desktop web browser. To help you get started, the following is a list of practices you should follow in order to provide the most effective web application for Android and other mobile devices.

1. **Redirect mobile devices to a dedicated mobile version of your web site**

   There are several ways you can redirect requests to the mobile version of your web site, using server-side redirects. Most often, this is done by "sniffing" the User Agent string provided by the web browser. To determine whether to serve a mobile version of your site, you should simply look for the "mobile" string in the User Agent, which matches a wide variety of mobile devices. If necessary, you can also identify the specific operating system in the User Agent string (such as "Android 2.1").

   > Note: Large screen Android-powered devices that should be served full-size web sites (such as tablets) do *not* include the "mobile" string in the user agent, while the rest of the user agent string is mostly the same. As such, it's important that you deliver the mobile version of your web site based on whether the "mobile" string exists in the user agent.

2. **Use a valid markup DOCTYPE that's appropriate for mobile devices**

   The most common markup language used for mobile web sites is XHTML Basic. This standard ensures specific markup for your web site that works best on mobile devices. For instance, it does not allow HTML frames or nested tables, which perform poorly on mobile devices. Along with the DOCTYPE, be sure to declare the appropriate character encoding for the document (such as UTF-8).

   For example:

   ```
   <?xml version="1.0" encoding="UTF-8"?>
   <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML Basic 1.1//EN"
       "http://www.w3.org/TR/xhtml-basic/xhtml-basic11.dtd">
   ```

   Also be sure that your web page markup is valid against the declared DOCTYPE. Use a validator, such as the one available at http://validator.w3.org.

3. **Use viewport meta data to properly resize your web page**

   In your document `<head>`, you should provide meta data that specifies how you want the browser's viewport to render your web page. For example, your viewport meta data can specify the height and width for the browser's viewport, the initial web page scale and even the target screen density.

   For example:

   ```
   <meta name="viewport" content="width=device-width, initial-scale=1.0, user-scalable=no">
   ```

   For more information about how to use viewport meta data for Android-powered devices, read Targeting Screens from Web Apps.

4. **Avoid multiple file requests**

   Because mobile devices typically have a connection speed far slower than a desktop computer, you should make your web pages load as fast as possible. One way to speed it up is to avoid loading extra files such as stylesheets and script files in the `<head>`. Instead, provide your CSS and JavaScript directly in the <head> (or at the end of the <body>, for scripts that you don't need until the page is loaded). Alternatively, you should optimize the size and speed of your files by compressing them with tools like Minify.

5. **Use a vertical linear layout**

   Avoid the need for the user to scroll left and right while navigating your web page. Scrolling up and down is easier for the user and makes your web page simpler.

For a more thorough guide to creating great mobile web applications, see the W3C's Mobile Web Best Practices. For other guidance on improving the speed of your web site (for mobile and desktop), see Yahoo!'s guide to Exceptional Performance and Google's speed tutorials in Let's make the web faster.