Validating Mobile Markup

Markup validation is the practice of machine-checking that a Web document complies with syntax rules and adheres to the dialect of the document format in use. As you develop your Mobile Web application, you can use validation to check whether your markup and style sheet documents are well-formed and valid. During the testing cycle, you should thoroughly validate every Mobile Web document in your project to ensure strict adherence to Web and Mobile Web standards.

You first learned about the merits of valid and well-formed mobile markup in Chapter 3. This chapter provides you with tools to validate your markup, diagnose validation errors, and ensure that, at least syntactically, your markup is appropriate for display in a mobile browser.

You perform markup validation by providing a document URL, an entire Web document, or a document fragment to a public validation service on the Web. Table 9-1 lists several markup and style sheet validation services on the public Internet. A validation service analyzes the document and reports validation results. If the document is invalid or not well-formed, the validation service might display several pieces of information for each syntax error, such as its markup snippet, file location, and clarifying details for resolving the problem. If the document is valid, the service reports the document’s validity and might even display congratulations.

In addition, many IDEs check whether your documents are well-formed and valid as you type, using cached copies of the document DTD or schema. Markup and style validation in IDEs and offline tools are not discussed further in this chapter.

The public markup validation services discussed in this chapter offer source code downloads or application programming interfaces (APIs) for local installation and/or offline use. Developers use offline validation to maintain the privacy of new Mobile Web services by avoiding uploading sensitive URLs to a public service. Local installation of markup validation services provide better performance for heavy usage than uploading content to the public Internet. Also, local installations of markup validation services are scriptable, which enables you to integrate validation into a software development or quality assurance (QA) tool chain.
All public Web validators check markup syntax. Some validators targeting Mobile Web documents might also measure the mobile-friendliness of Web documents by evaluating criteria such as page weight (the size of your markup document and all linked resources) and adherence to mobile industry best practices. These mobile validators evaluate your Mobile Web document for suitability for transmission across mobile networks, user cost to download, and expected usability in mobile browsers.

**Importance of Valid Markup on the Mobile Web**

On the desktop Web, only 4% of (X)HTML documents use valid markup and style sheet syntax, according to a 2008 study by Opera. Markup validation is encouraged; however, it isn’t mandated for desktop Web documents or required by Web browsers. The relaxed syntax rules of HTML permit lenient development practices. For many, it is simply not a Web development priority to produce syntactically compliant Web pages. Further, desktop browsers are often smart enough to identify invalid markup, determine author intent, and circumvent or correct the faulty markup.

On the Mobile Web, valid style sheet and markup syntax is essential. Developers must achieve 100% compliance with markup and style sheet standards in Mobile Web documents to ensure compatibility with a broad range of Mobile Web browsers. Of course, no standards organization has announced that Mobile Web pages must be valid at all costs, but the reality is that invalid or poorly-formed markup adversely impacts your document’s compatibility with mobile browsers in ways that are far more destructive than with desktop Web browsers. Mobile browsers are advancing rapidly, but generally are not designed to scour a Web document for invalid markup and to render the document as intended by the developer. The mobile browser displays the markup document as written. An invalid Mobile Web document might be incompletely or poorly displayed in the browser. Or, the mobile browser might waste cycles attempting to render the faulty document, causing the browser to perform poorly.

Vigilance in validating mobile markup has a direct effect on mobile traffic levels. The mobile user often pays a significant performance penalty for browsing an invalid Mobile Web document—a penalty that might deter the visitor from returning. Current and older mobile browsers that adhere only to WAP standards might crash, or worse, cause the phone to restart when encountering malformed markup. Mobile browsers supporting full Web standards provide a more forgiving user experience by incompletely rendering the invalid page. However, mobile users quickly learn to avoid Mobile Web sites that perform poorly, fail to display, or crash their phone’s browsers. Also, mobile search engines might penalize or exclude mobile sites with invalid markup.

Listing 9-1 shows an invalid XHTML-MP Mobile Web document. It contains three XHTML-MP and CSS syntax errors. Can you find them? Listing 9-2 is the validated and corrected version of the XHTML-MP document. Review the code in bold in Listing 9-2 to find the differences between the documents.

Figures 9-1 and 9-2 show the invalid and valid markup as displayed in the Android, Palm Pre, and iPhone emulators.