Wireless Software Design for Handheld Devices

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Abstract

Most Internet technologies are designed for desktop and large computers running on reliable networks with relatively high bandwidth. Hand-held wireless devices, on the other hand, have a more constrained computing environment. They tend to have less memory, less powerful CPUs, different input devices, and smaller displays. The Wireless Application Protocol (or WAP), which is a specification developed by the WAP Forum (www.wapforum.org), takes advantage of the several data-handling approaches already in use. Developing wireless software using WAP technologies is similar to developing web pages with a markup language, such as HTML, since WAP is browser based. Another approach to developing more interactive wireless software is to use the Java-based Mobile Information Device Profile or MIDP (java.sun.com/products/midp).

With either WAP or MIDP, the Java programming language plays an important role. In WAP, Java Servlets and Java Server Pages (JSPs) can be used to generate Wireless Markup Language (WML) pages dynamically, and in MIDP, applications (also called MIDlets) are written in Java.

The tutorial will help participants understand the different technologies that can be used to develop wireless software for hand-held devices.

The list of major topics to be covered in this tutorial includes:

- Handheld Device Markup Language (HDML)
- Compact HTML (cHTML)
- Wireless Application Protocol (WAP)
- Java 2 Micro Edition (J2ME)
- Kilo Virtual Machine (KVM)
- Connected Limited Device Configuration (CLDC)
- Mobile Information Device profile (MIDP)
- Other configurations and profiles
- Palm Application Programming with Java
- Optimization Techniques
- Security Issues
- Useful Resources

Qusay H. Mahmoud provides Java consulting and training services. He has published dozens of articles on the Java programming language, including the MIDP and Palm programming articles for Sun Microsystems' Java Developer Connection. Qusay is the author of Distributed Programming with Java (Manning Publications, 1999).