Chapter 3

Java 2 Micro Edition for Wireless Enterprise Applications

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ABSTRACT

Advancements in wireless technologies have made it possible to build wireless enterprise applications. An enterprise application calls for challenging requirements such as two-way data transfer, complex business logic, and multiple system users. These applications will make great impact to the operations of a company that will result in the increase of the company’s revenue. This chapter examines and develops one enterprise scenario, a customer support system, using Java 2 Micro Edition (J2ME). J2ME allows applications to be executed locally using a mobile device’s processing capacity and resources. We outline the design of a relational database to store frequently accessed data and describe the usage of XML for data exchange for better interoperability with back-end systems. Extensions to mobile commerce (m-commerce) are also considered. Bank account information and financial transaction instructions are treated as data to be sent over the wireless network. However, as in the case of e-commerce, the security of the transaction is the primary concern and some cryptography techniques need to be used.
INTRODUCTION

For the last couple of years, the wireless industry has been experiencing tremendous growth. Wireless devices have become more intelligent and are providing a new notion of communication. It is now possible to conduct business using a wireless network that will greatly improve the speed and quality of the business. This gives rise to mobile commerce (m-commerce), a transaction with a monetary value that is conducted via a mobile telecommunications network.

Wireless enterprise applications will bring great impact in the workflow, work efficiency, and user convenience, which will result in increasing a company’s revenue. Examples of business decisions across the wireless Internet are:

- A sales manager will be able to browse and download the latest price and stock availability of products during the journey to the client meeting.
- Doctors and medical workers will be able to view a patient’s history of illness, medication, and allergies using their handheld device.
- Support engineers, couriers, and delivery services will be able to manage their schedule better by organizing their orders on their cell phones. The headquarters will also be able to monitor their workers in the field.

The purpose of this chapter is to discuss the issues concerning the development of wireless enterprise applications using Java 2 Micro Edition (J2ME), a platform that allows applications to be executed locally using a mobile device’s processing power and resources. This chapter will explain what J2ME is and discuss the guidelines and technical aspects to implement wireless enterprise applications using J2ME. For illustration, one case study, a customer support management system, will be described in detail.

BACKGROUND

Introduction to Java 2 Micro Edition

After introducing Java 2 Standard Edition (J2SE) and Java 2 Enterprise Edition (J2EE), Sun recently added the Java 2 Micro Edition (J2ME) (Sun Microsystems, 2002). J2ME is designed to run on consumer devices and electronic appliances, including wireless devices such as cell phones and Palm PDAs (Raju, 2000). J2ME provides a way to exploit the processing power on the mobile device better by running the code on the device itself. Therefore, it provides better network implementation, better graphical user interface, and local database management.

The J2ME defines the following set of tools and APIs that can be used with consumer devices:
E-Marketplace Regression of National Trucking Exchange
www.igi-global.com/chapter/marketplace-regression-national-trucking-exchange/9537?camid=4v1a