Data Repository on a Distributed Mobile Platform

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Declaration of Authenticity

I hereby declare that the following thesis is the result of original, authentic, work by the author in which all relevant sources are properly cited and acknowledged. No sources, equipment or materials other than those mentioned have been used.

The material published here in has not been submitted elsewhere in part or whole with the aim of receiving credit towards a degree, or with the aim of publication prior to submitting this dissertation.

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i

Abstract

Distributed systems are found almost everywhere in today's computer environment and they are used for a wide variety of tasks ranging from routine office work done on typical personal computers to cutting-edge scientific research performed on high-end machines. They are becoming more and more sophisticated as time goes by as a result of the work carried out by a large number of researchers and the experience gained by professionals who use distributed systems. This trend is expected to continue in the foreseeable future, resulting in more and more advanced applications.

The rapid growth in the use of mobile phones and the increasing computing power of these devices has resulted in mobile platforms becoming increasingly important in the domain of information and communication technology. These platforms that barely existed a decade ago, have now become one of the most interesting research areas. At the same time, they are becoming more and more sophisticated with each new version of the platforms. The Symbian Operating System is one of the leading platforms among such operating systems for mobile devices.

This dissertation presents the results of a research work carried out to explore the interesting intersection between distributed computing and mobile computing paradigms and the use of distributed systems in mobile platforms, which would clearly be an important domain in tomorrow's computer environment. As the outcome, a distributed data repository was built on a mobile platform with devices running Symbian Operating System and the chosen communication technology was GPRS.

This research will serve as a basis for anyone interested in implementing a distributed mobile data repository (either for academic purposes or for commercial applications). Additionally it will also help to add a community aspect to the emerging technologies and applications in mobile computing.

Acknowledgement

This dissertation is the result of hard work of more than a year which would not have been possible without the support of many people.

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iii

Table of Contents

v

List of Figures

List of Tables

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Symbols, Notations, Abbreviations and Acronyms

OS	Operating System
GSM	Global System for Mobile Communications
GPRS	General Packet Radio Service
3G	Third Generation
TCP/IP	Transmission Control Protocol/Internet Protocol
SDK	Software Development Kit
DBMS	Database Management System
API	Application Programming Interface
SMS	Short Messaging Service
STL	Standard Template Library
SQL	Structured Query Language
DDL	Data Definition Language
DML	Data Modeling Language
RDBMS	Relational Database Management System
IDE	Integrated Development Environment
MVC	Model-View-Controller
SIM	Subscriber Identity Module
SMS	Short Messaging Service
TDMA	Time Division Multiple Access
FDMA	Frequency Division Multiple Access
DNS	Domain Name System
RMB	Right Menu Buttons