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Development of an Application for Storing and Retrieving Mobile Data

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Abstract

Recently Wireless Technologies became an interesting technology for companies, institutions and even for individuals because they provide information services with adequate bandwidth and performance without need for a wired network infrastructure. As a result, web wireless services have evolved up, and mobile application became a de facto

One of the major problems that face mobile users, they lose their phone data (phonebook, images, videos, and sounds) once they lose their phones. The Mobile Service Providers does not provide store and retrieve data service that solves this problem.

This research is focus on this problem by developed a web-mobile application for users to be able to save their mobile phone data (phonebook, photos, videos, and sounds) on a web database and to retrieve it back later. We developed the application using several technologies; we used J2ME to build the application that is running on the mobile phone, and MYSQL to create the database on the server and PHP to serve the mobile phone request and to deal with the database. The developed application was tested and, proved to perform properly.

المستخلص

في الآونة الأخيرة، أصبحت تقنيات الاتصالات اللاسلكية موضوع مثير للاهتمام بالنسبة للشركات والمؤسسات وحتى الأفراد، لأنها توفر خدمات تبادل المعلومات مع عرض النطاق الكافي لأداء خدمة جيدة دون الحاجة إلى وجود بنية تحتية للشبكة السلكية.

ونتيجة لذلك ، فان خدمات الاتصالات اللاسلكية على شبكة الإنترنت تطورت حتى على صعيد تطبيقات الهاتف المحمول التي اصبحت واقعا ملموسا الان.

من اهم المشاكل التي تواجه مستخدمي الهاتف المحمول هي فقدان بياناتهم(دليل الهاتف، الصور، مقاطع فيديو، مقاطع صوت) عند فقدان الهاتف المحمول. موفري خدمة الهاتف المحمول لا يوفرون خدمة تخرين واسترجاع البيانات التي تعالج هذه المشكلة.

في هذا البحث نركز علي هذه المشكلة بتطوير تطبيق يعمل على الهاتف المحمول والذي يمكن المستخدمين من حفظ البيانات (دليل الهاتف، الصور، مقاطع فيديو، مقاطع صوت) الخاص بهم في قاعدة بيانات منشاة على شبكة الإنترنت ، بحيث يمكن استعادة هذه البيانات اذا دعت الحاجة الى ذلك، وقد تم إستخدام J2ME لبناء التطبيق الذي يعمل على الهاتف و MYSQL لإنشاء قاعدة البيانات على المخدم PHP لخدمة الطلبات من الهاتف والتعامل مع قاعدة البيانات المنشأة، ولقد تم اختبار التطبيق واثبت فاعليته عمليا .

Introduction

1.1 Research Problem

One of the major problems that face mobile users in Sudan is that, they lose their phone data (phonebook, images, videos, and sounds) once they lose their phones. The Mobile Service Providers does not provide store and retrieve data service that solves this problem.

This research is focus on this problem by producing a Web-Mobile Application that provides a store and retrieve service to allow users to store their mobile phone data and to retrieve it back.

1.2 Research Objectives

The aim of this research is to achieve the following:

1) Enable the users to save phonebook, images, videos, and sounds in a secure database.

2) Enable the users to retrieve data from the database when they need it.

1.3 Research Tools

There were many tools used to achieve the objectives of the research, firstly we use Java 2 Micro Edition (J2ME) in developing the phone application that helps users to read, send and retrieve data. The developed application is running in Symbian mobile (Nokia) operating system.

Secondly on the server side we use PHP for receiving users' phones requests to store or retrieve data to/from MYSQL database and to respond to users' requests.

1.4 Research Results

After the implementation and testing, the application is efficient in reading mobile phone data and sending it to the server database, and reversely it performs well in retrieving back data and store it again in the mobile phone.

1.5 Research Limitations

The developed application has the following limitations:

1) Some types of mobile phones have slow-speed processors, so when the application extracting phone data from the mobile phone takes a long time.
2) The simulator needs to reconfigure the default size to be able to carry out a large size of data files, and this require big size of RAM, otherwise, The developed application can curry out data in maximum size of 500kb (small files) to be transferred to web server .
3) The developed application requires enough size of buffer to store and to retrieve data, therefore, when the phones have full memory or a small memory the application is running very slow.
4) This application supports only certain types of mobile operating system. Because J2ME is not supported for all environments.

1.6 Research Organization

This research consists of six chapters. Chapter two discusses the web services and their architecture entities and operations. Chapter three focus on Wireless Application Protocol (WAP) and its stack for providing Internet communications over digital mobile telephones, pagers, Personal Digital Assistants (PDAs) and other wireless terminals. Chapter four is dedicated for system design of Mobile Phone Application and its components. And the implementation and testing of the

application was discussed in chapter five. Chapter six includes conclusions and recommendations to improve the application in the future.