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Mobile Web Volet

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Abstract: ***We are into an era where mobile devices are to replace most of the known devices. Mobile phone, such a mobile device which is now capable of replacing Camera, Organizer, Diary,GPS, Play station and many others. There is no doubt that mobile phones have gained a tremendous development in its user friendliness though they need some security concerns about the stored facts of the mobile phones. If the phone is lost or dead there is no posibilty for the user to retrieve the sensitve data which are stored in the phone. Another fact is that mobile phones are devices with very limited resources such as space. This leads the user to face problems in storage. We take the above as our problem domain and develop a composite solution as a mobile application and a website. The website will act as an unlimited storage for the data in the mobile phone. The mobile application will enable the user to upload and download necessary data to and from the web storage. The system will be capable of storing contact information, mesages (SMS) and other user selected data such as images and videos. The user is capable of accessing the data not only by using the mobile aplication, but also by log in into the website using a browser.Therefore if the mobile phone is lost or dead the user can log in to his/her user account and access the stored items. This system was decided to be developed in java which enables this to be platform independent which makes this to be work on many smart phone platforms and to perform with utilizing minimum resources and work is currently being done.***

Keywords: mobile application, web volet, SMS, Web storage.

1. Introduction

It is widely accepted that the market of the mobile devices and applications are populating among the users in the past couple of years all around the world [1]. Though the mobile phones are user friendly, the stored facts are not secure enough for the owner. So we have understood this situation and tried to develop an aplication to secure the data that stored in mobile phones. We have developed a mobile aplication that can be easily installed in most of the mobile phones and using that aplication the user can store his sensitve data in a secure web server. Mobile phones are having limited storage facilities. In this case the user can store more data in the web without having such a memory problem.

Basically there are two parts in this aplication. They are mobile aplication and the web aplication. Mobile application handles all the things related with the mobile [2]. User can login to his acount by using his/her user name and password. Then he/she can store mesages, images, documents and contacts stored in the phone on web. User can browse folders for his data using this mobile aplication. Also the user can download his/her sensitve data stored on the web by using this aplication easily. Whenever the user buys a new phone he can download and store al the contacts and other data easily. Web aplication is the other part of this software. User can connect with the web aplication via his mobile or using a PC. When the user enters his user name & password he can login to his acount and se his stored data as well as download them easily [3]. If you don't have an existing acount you can sign up by creating a new acount. People can download the software using this web application.

Mobile phone has become an item that would be with us at any time. Its mobility and comprehensiveness have made it unavoidable. With all this facts, it has become everything, not just a phone. With all the technological advances the mobile phone has become the major telecommunication device. Yet there are some facts that concern the users of the mobile phones. With the rapid development of the mobile phone technology, it has become storage for sensitve data. Yet there is no proper security given for those sensitve data. Sensitve details stored in the mobile phones can be accessed by anyone other than the owner. Though some mobile phones have the option of locking the phone by giving a password, it is not much reliable enough because the phone can be stolen or dead. So, entire data wil be lost although it is safe [3]. Another problem is that phones don't have enough capacity to store all the important details. Most of the phones are having a limited space for store data except latest smart phones. Next problem is that if the phone is stolen or stopped working the owner doesn't have a way to retrieve his vital data. So the owner needs a way to backup his sensitve data in a secure manner. Phones can be damaged and stop working on any time and also can be stolen. SMS, another feature provided by the mobile phones has dominated the globe due to its cheapness and easiness. These SMS mesages are also user critical data [4]. As in the above scenarios, users must be facilitated with the security and reachable of these user critical SMS at any time.

2. Background and Context

The term Mobile Web refers to the use of Internet-connected applications, or browser-based aces to the Internet from a mobile device - such as a Smartphone or tablet PC – connected to a wireless network. Traditionally, access to the Web has been via fixed-line services. However the Web is becoming more accessible by portable and wireless devices. In 2008 an important milestone in the transition from fixed to mobile Web use was reached when mobile access to the internet exceeded desktop computer-based access for the first time. In fact, the shift to mobile Web access has been accelerating since 2007, with the rise of larger form factor multi touch smart phones, and more recently from 2010 with

the emergence of multi touch tablet computers, both platforms are more conducive to internet access and better browser- or aplication-based user Web experiences than have been afforded by previous generations of mobile devices. The distinction between mobile Web applications and native applications is anticipated to become increasingly blurred, as mobile browsers gain direct access to the hardware of mobile devices, and the performance of browser based applications improve (speed- and capability-wise). Persistent storage and access to sophisticated user interface graphics functions may further reduce the need for the development of platform- specific native applications. Once users are unable to differentiate between native and mobile web applications, the Mobile Web wil refer generically to web aces or use of Internet-connected apps from a mobile device. Mobile Web access today still suffers from interoperability and usability problems [4]. Interoperability issues stem from the platform fragmentation of mobile devices, mobile operating systems, and browsers. Usability problems are centered on the small physical size of the mobile phone form factors (limited resolution screens and user input/operating limitations).

3. Methodology

3.1 Proposed Technique

One of the most important decisions when developing software is selecting an appropriate software development methodology. Since there are many software development methodologies, it is very important to perform a research on all the available methodologies prior to starting the development process and make a decision regarding what methodology to select. One software development methodology framework is not necessarily suitable for use by al projects. Each of the available methodology frameworks are best suited to specific kinds of projects, based on various technical, organizational, project and team considerations.

Selecting the appropriate methodology can increase the probability of the project success. By taking into acount he limited knowledge and the experience of us in developing mobile applications, after considering al the existing methodologies, Incremental Development Model is chosen as the most suitable model to develop this aplication. The main reasons to choose Incremental Development Model are;

- Generates working software quickly and early during the software life cycle.
- Easier to test and debug during a smaller iteration.
- Easier to manage risk because risky pieces are identified and handled during its iteration.

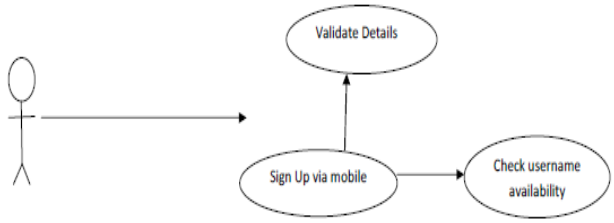
J2ME is highly optimized java run time environment targeting a wide range of consumer products. J2ME is formerly known as Java 2 Platform, Micro Edition. Hence, J2ME provides necesary tools for programmers to develop applications for mobile information devices such as mobile phones and PDA's. Because of these reasons we decided to go on with J2ME as our programming language which of course is a platform independent language. For the development we used Net Beans IDE 7.1, a Java IDE (Integrated Development Environment). MySQL is selected as the Database management System..

3.2 Use Case Diagram

Because this service is intended for mobile users, users can sign up for the service only through a mobile phone. When signing up, user has to enter the full name, username, password, email address and contact number. All the user inputs are validated for the correct format and if the inputs are given in the invalid format, an error message will be displayed and user will be asked to re-enter details. Once the sign up process is completed successfully, a message will be shown to the user.

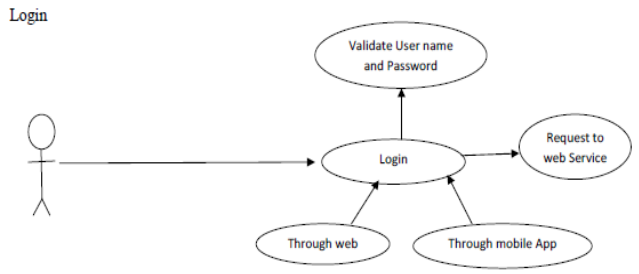
Use case for entire system

Sign Up

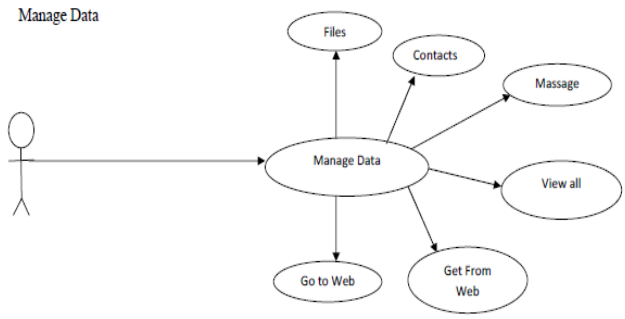


User can log in to the system either through mobile application or web application. When logging in through the mobile application, user has to enter username and password. The system will validate the inputs and if the

inputs are correct, system will send a request to web service. If the inputs are invalid, an error message will be displayed. After logging in, user is directed to the main menu of the application. When logging in through the web application, user has to enter username and the password. The system will validate the inputs and will log the user in if the given inputs are correct. If the inputs are wrong, an error message will be displayed. After logging in, user will be directed to the home page where he or she can navigate through the system.

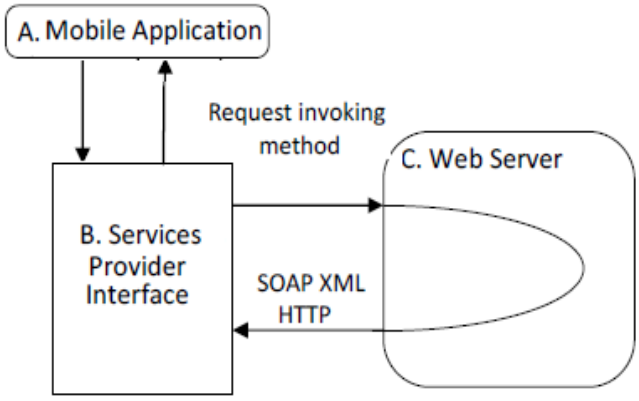


User can manage data either through mobile application or web application. In both scenarios, user must be logged in to the system. When managing data through mobile application, user can select My Stuff, Contacts or Messages to manage. With "Manage My Stuff" selected, user can navigate through folders and select files to be synchronized, send those selected files to the web application or get files from the web application that are already sent. When sending files to the web site, system has to calculate the total size of the selected files and compare it with the maximum size that can be synchronized per session. If the total size exceeds the maximum size, an error message will be displayed. With "Manage Contacts" selected, user can navigate through the contacts list and select contacts to be synchronized, send selected contacts to the web application or get contacts from the web that are already sent. If the username is invalid, an error message will be displayed. When retrieving data from the web application, system has to check whether the memory is enough to store the retrieving data.



3.3 Acquiring, installing and available functionality of the application

To get the service of the Mobile Web software initially, the mobile application must be stored in the mobile memory. Website can be accessed via the PC by having internet connection [6]. Once the application is installed, the user has to go through some initial settings.



a) Mobile Application is the place that lets the user to choose items to be stored in the web. The data which user needs from the mobile device can be got using SOAP requests and responds vice versa.
b) Service provider is an interface between mobile application and web server. Creating web services makes the communication secure and platform independent.
c) Web server which has the user data to serve according to the client needs.

4. Conclusion

Our aim is to develop a mobile application with a website to address one of the most critical problems face by mobile phone users, the security of their mobile data. This application will provide the user the facilities of uploading and downloading their sensitive data in the phone to a dedicated storage on the web as they select. The user is to be signed in to the system using the mobile application and then to login either using the mobile application or using the website on a browser. The mobile application is password protected as well as their web account. So the user accounts have been given a good protection. Although we found that there are some applications developed to address these issues, there were limitations such as platform dependence (Ovi by Nokia, MobileME by iPhones). By using J2ME, we were able to utilize the mobile's resources in an efficient manner. We found that using J2ME is a major advantage in addressing the problems of compatibility with different mobile phone brands.

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