Design and Implementation Web Site for UOT Using Mobile Devices

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Abstract

A mobile phone allows its user to make and receive telephone calls to and from the public telephone network which includes other mobiles and fixed-line phones across the world. In addition to being a telephone modern mobile phones also support many additional services, and accessories. such as SMS (or text) messages, e-mail, Web access, gaming, Bluetooth and infrared short range wireless communication, camera.

The Mobile Web refers to the use of Internet-connected applications, or browser-based access to the Internet from a mobile device - such as a Smartphone or tablet PC - connected to a wireless network. In this paper, we design and build an web application on the mobile devices and access to the web services to display the university of technology website.

Keywords: Mobile device, UOT , SQL , database ,sdf

الموقع الالكتروني للجامعة التكنولوجيه بأستخدام الاجهزة المحمولة

الخلاصة

أن الهاتف النقال يسمح تقديم وتلقي المكالمات الهاتفية من وإلى شبكة الهاتف العامة التي تشمل أجهزة أخرى والهواتف الثابتة في جميع أنحاء العالم. بالإضافة إلى كون الهواتف النقالة الحديثة أيضا تدعم العديد من الخدمات الإضافية. مثل الرسائل (أو النص) الرسائل القصيرة والبريد الإلكتروني، والوصول إلى الويب، والألعاب، وتقنية بلوتوث والأشعة تحت الحمراء قصيرة المدى الاتصالات اللاسلكية، وكاميرا.أن موبايل الويب يشير إلى استخدام التطبيقات المتصلة بالإنترنت ، أو الوصول استنادا إلى مستعرض للإنترنت من جهاز محمول مثل(الهاتف الذكي أو جهاز الكمبيوتر أللوحي) متصلا بشبكة لاسلكية.إن في هذا البحث،تم تصميم وبناء تطبيق ويب على الأجهزة المحمولة الهواتف النقالة واستخدامها للوصول إلى خدمات والويب لعرض موقع جامعة التكنولوجيا على أجهزة الموبايل.

Introduction

Mobile and compact devices become more and more popular in our society. Each of us faces with them every day. Certainly each of us has mobile phone, hand-held computers or other hi-tech devices. All of these devices have different mobile platforms. There are such known platforms as Windows Mobile M, iPhone, BlackBerry, Symbian OS, Android, Maemo, OpenMoko etc. All of them have

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different history and advantages and failings.

2. Communication

Communication is a process of transferring information from one entity to another.communication processes is sign-mediated interactions between at least two agents which share a repertoire of signs and semiotic rules. Communication is commonly defined as "the imparting or interchange of thoughts, opinions, or information by speech, writing, or signs". Although there is such a thing as one-way communication, communication can be perceived better as a two-way process in which there is an exchange and progression of thoughts or ideas(energy) towards a mutually accepted goal or direction (information).

3. Smart Device

Is any smart phone or PDA with an open OS platform, meaning that you can add new applications to it and aren't restricted to the programs it comes with. In some ways, smart devices do more than those five-year-old computers. Some of today's handhelds can play protected music files you purchased online. They can display videos and stream live television. Most importantly, since many of them double as cell phones, you can make and receive calls without having to carry a second gadget. Smart device applications support many remote concept applications. It connect the databases in various ways normally it contain local databases stored in Temp folder. It maintain temp database. Smart device applications are of two type:
-Pocket PC

-Windows CE

Moreover, with mobile devices appearing in all shapes and forms, and with a growing variety of features like location technology, cameras, voice recognition, touch screens etc, the Web can reach a much wider audience, and at all times in all situations. It has the opportunity to reach into places where wires cannot go, to places previously unthinkable and to accompany everyone as easily as they carry the time on their wristwatches. Finally, today, many more people have access to mobile devices than access to a desktop computer. This is likely to be very significant in developing countries, where Web-capable mobile devices may play as similar a role in deploying wide-spread Web access as the mobile phone has played for providing "plain old telephone service.

4. WWW (World Wide Web)

The World Wide Web, abbreviated as WWW and commonly known as The Web, is a system of interlinked hypertext documents contained on the internet .With a web browser, one can view web pages that may contain text , images ,videos, and other multimedia and navigate between them by using hyperlinks. Using concepts from earlier hypertext systems, British engineer and computer scientist Sir Tim Berners Lee now the director of the World Wide Web Consortium ,wrote a personal in March 1989 for what would eventually become the World Wide Web[1]. He was later joined by Beligian computer scientist Robert Cailliau while both were working at CERN in Geneva, Switzerland. In 1990, they proposed using "HyperText [...] to link and access information of various kinds as

a web of nodes in which the user can browse at will" and released that web in December **[2].**

5. Mobile Devices and Mobile Communications

Mobile device users are demanding fast and efficient connections that support data applications. Wireless connection has to be provided by the networks and protocols, mobile networks must function efficiently by using their protocol, performing routing and management for mobile device users **[4].**Mobile communication systems are characterized by a variety of features. The attributes of all mobile communication systems are the mobility of at least one of the connection users and the lack of wire line connection of this user's terminal with remaining part of the system. One of the classification criteria of the mobile systems is their degree of complexity, the range of the offered services and operation cost. From this point of view, the mobile communication system can be divided into the following categories [4,5]:

Paging System: Paging systems are an example of broadcasting systems. In classical paging system the communication is unidirectional. The signal is transmitted from the base station connected with the call center to a selected pager (receiver). All receivers listen to the broadcast signals, detecting that particular one which is addressed directly to it.

Wireless Telephony: Wireless telephony systems appeared in the late seventies. They can be characterized as a low power wireless communication means intended for a user moving slowly and located a short distance from the base station. The basic aim of introducing a wireless telephone is to replace a wire line one.

Trunking System: Trunking systems are mobile communication systems specializing in communications within large enterprises, which manage resources, dispersed in space, such as a fleet of truck or service vehicles. Cellular Telephony: Cellular telephony is the next and perhaps the most representative example of mobile communication systems. The cellular phone system is characterized as a system ensuring bidirectional wireless communication with mobile stations moving even at high speed in a large area covered by a system of base stations. The cellular system can cover whole country. Moreover, a family of systems of the same kind can cover the area of many countries. Initially, the main task of a cellular system was to ensure the connections with vehicles moving within a city and along highways. The power used by cellular mobile stations is higher than that used by the wireless telephony and reaches the values of single watts. Personal Satellite Communication Systems: Satellite mobile communication systems already do exist. The characteristic feature of currently existing satellite systems is uni-or bidirectional voice and/or data communication at a limited quality in very large areas. Their main advantage is their wide range. Wireless Access to the Local Area Network: A new category of mobile systems has appeared in recent years. The wireless technology has been used to realize a wireless access to computer networks.

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With the trend toward a highly mobile workforce, the use of handheld devices such as Personal Digital Assistants (PDAs) is growing at an ever-increasing rate. These devices are relatively inexpensive productivity tools that are quickly becoming a necessity in government and industry. Most handheld devices can be configured to send and receive electronic mail and browse the Internet using wireless communications. While such devices have their limitations, they are nonetheless extremely useful in managing appointments and contact information, reviewing documents and spreadsheets, corresponding via electronic mail and instant messaging, delivering presentations, and accessing remote corporate data. Manufacturers produce handheld devices using a broad range of hardware and software. Unlike desktops and notebook computers, handheld devices typically support a set of interfaces that are oriented toward user mobility. Handheld devices are characterized by their small physical size, limited storage and processing power, and battery-powered operation. Most Personal Digital Assistant (PDA) devices provide adequate memory (at least 32MB Flash ROM and 64MB RAM) and processing speed (200Mhz or higher) for basic organizational use. Such devices come equipped with a LCD touch screen (one-quarter VGA or higher) and a microphone/ soundcard/ speaker, but usually lack a QWERTY keypad. One or more wireless interfaces, such as infrared or radio (e.g., Bluetooth and WiFi) are also built-in for communication over limited distances to other devices and network access points; so too are wired interfaces (e.g., serial and USB) for synchronizing data with a desktop computer. Many high-end PDA devices also support Secure Digital (SD) and Compact Flash (CF) card slots for feature expansion. Over their course of use, such handheld devices can accumulate significant amounts of sensitive corporate information (e.g., medical or law enforcement data) and be configured for access to corporate resources via wireless and wired communications[6].

One of the most serious security threats to any computing device is unauthorized use. User authentication is the first line of defense against this threat. Unfortunately, management oversight of user authentication is a persistent problem, particularly with handheld devices, which tend to be at the fringes of an organization's influence. Other security issues related to authentication that loom over their use include the following items[6]:

Because of their small size, handheld devices are easily lost or stolen.

• User authentication may be disabled, a common default mode, divulging the contents of the device to anyone who possesses it.

• Even if user authentication is enabled, the authentication mechanism may be weak or easily circumvented.

• Once authentication is enabled, changing the authentication information regularly is seldom done.

• Limit processing power of the device, may preclude the use of computationally intensive authentication techniques or cryptographic algorithms. [6]

6. The Proposed of UOT Web Site Using Mobile Device

In this research, it's used Microsoft Visual Studio 2008 as environment to implement our application. Microsoft Visual Studio 2008 is an Integrated Development Environment (IDE) from Microsoft Office. This environment supports languages, in our project the language is visual basic; an object oriented computer programming language, which is generally implemented on the Microsoft .NET framework. The project type is Smart device project with Pocket PC 2003 platform and .NET compact framework version 3.5 .The .NET compact framework version 3.5 is an integral windows component that supports building and \running the next generation of applications and web services. .The .NET compact framework version 3.5 expands support for distributed mobile application by including the windows communication foundation (WCF) technology.

In this paper, is design and implement UOT site and running this site on mobile device. Our software has more than one page. The user must has a specific information (unique user name with any password he choose when he make new account) to enter the site. The site has pages for all the university departments, library, university activities and important webs.   When we design this project we take into account the features of the mobile device and the size and the resolution of the screen and the nature of the operating system that the device operate in it, if it has touch screen feature or not, this affects in the implementation of buttons.

6.1 Architecture of UOT Approach

In this section we explain the main steps of propose UOT system be using multi page for main system and last page ,when the costumer enter to system can go from page to another if he register in system or not can new count be administer, administer can apply multi operation (add, del,edit ,..).

6.2. Implementation of System in Mobile Device

6.2.1 Login Page

In this page we have two buttons with two textbox if the user chose "Login" button the page will redirect him to Home Page according to the correct user name and password; if he previously has an account. If he want to enter the site he, but he don't have an account he select the "Sign Up" button to go to Registration Page to create new account by entering personal information as show in Figure(15), otherwise he chose "Exit" button to end the application. The Administrator of the site can enter his user name and his password that are stored in specific field within the info table in the database. If the Administrator enters correct information the Administration Page related to users information will be viewed Figure (3).

6.2.2 Home Page

UOT home page has a summary for UOT university and we have multi options the user can select to brows the site.

6.2.3 UOT Departments Page

Departments Page has thirteen departments that are the university departments. If the user selects one of the thirteen buttons he will get the page of the department. And he has "Home Page' button to back to Home Page.

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6.2.4 The Department Page

This page has a summary about the selected department and has two buttons "back" for back to the Home Page and the "details" for viewing details Page in this department as shown in Figure (6), Figure (7). Details Page has an explanation about the nature of the department and the specification in this department.

6.2.5 Library Page

The Library Page views result according to the keyword the user wants to retrieve information about it. In this page we have a textbox as input to make search and one button "search" button to view the result that are stored in database file like his treatise ,URL of the folder ,year with the type if it is master or Ph.D. The keyword must be like "msc-2008" or "phd-2007" to view the result to the list box and to view the details about the related results , we have two menu items ,"details" view details in the text boxes ; and if the keyword is wrong or not stored in the database file the application will give a message box to tell him about his error ,and the other menu item "administration" is related to the administrator of the library by entering a password in the input box and then click OK, the Page of Administration will be viewed Figure (9), no one else can enter the administrations pages without knowing the specific user name like in Library or user name and password in the administration on the information related to users.

By selecting the edit item Figure (10) the Administrator will get another page (View Dialog Page) that enables him to make modification on the selected record and then click Ok to save changes Figure (11).

6.2.6 Activities Page

This page has three buttons," Homepage" button to back to the Home Page ,and the "scientific promotion" button to view the Promotion Page Figure(13), and the Deputations and invitations will viewing the Invitation Page Figure (14).

6.2.7 Registration Page

When the user want to create new account when he selected a "Sign Up" button in the Login Page, he must enter his information like (his first name, his last name, his birthday, e-mail, user name and password).If the user name is already valid in the database the application will reject the registration by giving a message box to re-enter another user name.

6.2.8 Administration on Users Information Page

When the administrator enter the correct user name and password in the Login Page he redirected to this page, This page has all records that belong to all registered users the

Administrator can make modifications and add new records or delete a specific record as we shown in the Library Administration Page.

7. Conclusions

Several conclusions are reached through the work in the system. The following items represent the important conclusion which is drawn from the proposed system:

- That intelligent design is one of the basic components in the design of websites offering to mobile devices, so you should be commensurate

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with the design capacity and the
potential of the devices used

- The use of technology Wi-Fi is
faster than using the Internet to
download Web sites when the target
use these sites Intranet University of
Technology.

-
SQL Connection for database under
(WM version 6.5) is available for
only C# applications,VB.Net not
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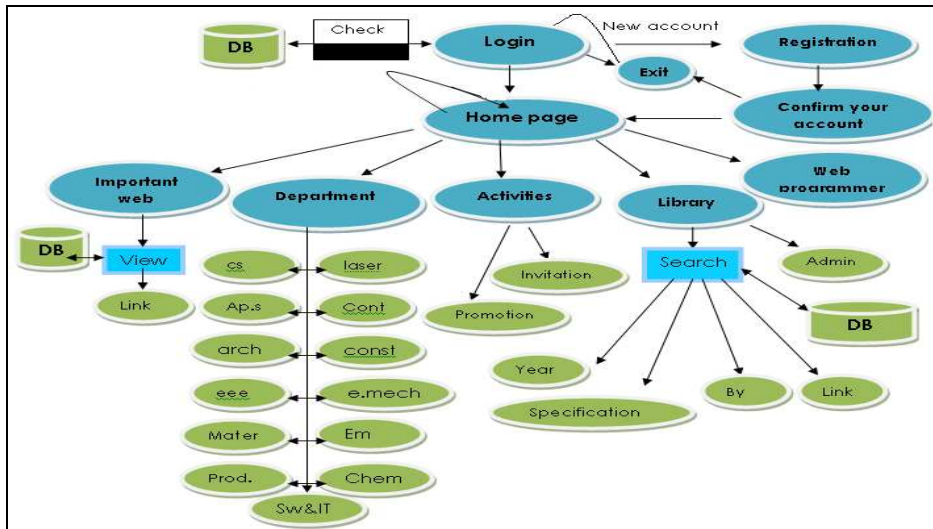Gaithersburg, MD 20988-8930 July
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Figure (1) Architecture of UOT site approach
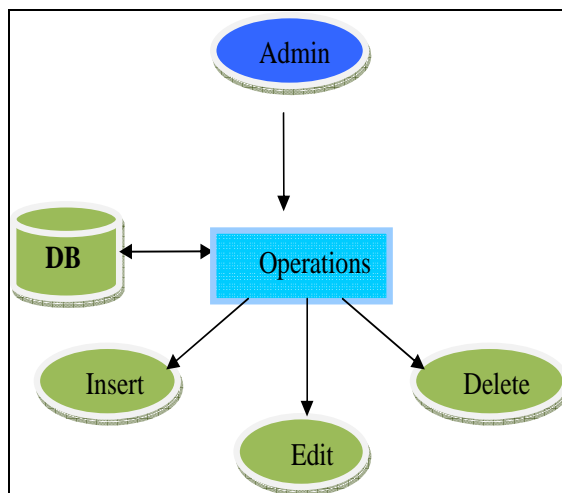
Figure (2) Administer of UOT site approach

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Figure (3) Login Page

Figure (4) Home Page

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Figure (5) UOT Departments Page

Figure (6) the Selected Department Page

Figure (7) Details Page

Figure (8) Library Page

Figure (9) Administration Page

Figure (10) Summary View Dialog Page

Figure (11) Activities Page

**Figure (13) Scientific   Promotion
Page**

**Figure (14). Deputations and
invitations**

Figure (12) Confirm Your Account Page

Figure (15) Registration Page

Figure (16)

Figure (17) Administration

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Figure (18) search by user name Page