PSM & PTA EVALUATION SYSTEM USING PDA (PPESUP)

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ABSTRACT

Today almost all the evaluation system is using form to perform the evaluation process. Nowadays, with the technology era is expanding, this method appeared to be no longer suitable and systematic. There are many weaknesses in today system for example the loss of form, unreadable or misread of evaluator handwriting and most of all record are stored manually. Thus, this system is build to override the manual system to become a computerized system. PSM & PTA EVALUATION SYSTEM USING PDA (PPESUP) is focused on building a system where evaluator can evaluate by using PDA and this project also focused in computerizing the method of evaluation to become more systematic. The new system can reduce the problems that occur on the old method and can ease the workload of the manager in storing all the purchase record. Web based technique are used during the implementation of the system to enable access to the system through web surfer. In addition, PHP languages and MySQL database are used appropriate with the system functionality.

ABSTRAK

Pada masa kini, semua proses penilaian hanya menggunakan sekeping kertas dan pen untuk melakukan proses penilaian. Kaedah ini tidak lagi sistematik di era teknologi kini. Banyak kelemahahn pada sistem sekarang sebagai contoh, kehilangan kertas penilaian, tulisan para penilai yang sukar dibaca dan juga setiap data dihantar secara manual. Oleh itu sistem ini diwujudkan bagi mengubal manual sistem kepada sistem berkomputer. PSM & PTA EVALUATION SYSTEM USING PDA (PPESUP) adalah mengfokuskan dimana para penilai perlu mengunakan PDA dan juga mengkomputerkan system penilaian supaya dapat memudahkan lagi proses penilaian dan juga lebih sistematik. Sistem ini juga dapat mengurangkan masalah-masalah yang berlaku kini dan dapat mengurangkan bebanan pengendali data ketika merekodkan semua keputusan markah. Bagi membolehkan sistem ini di akses melalui pelayar laman web, teknik "web based" telah digunakan sepanjang aktiviti pembangunan sistem. Selain itu bahasa pengaturcaraan PHP dan pangkalan data MySQL telah digunakan bersesuaian dengan system ini..

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LIST OF ABBREVIATIONS

CASE	Computer Assisted Software Engineering
DFD	Data Flow Diagram
HTML	Hypertext Markup Languages
JAD	Joint Application Development
J2ME	Java 2 Micro Edition
PDA	Personal Digital Assistance
RAD	Rapid Application Development
RESTUP	Restaurant Service System Using PDA
WAP	Wireless Application Protocol
WAE	Wireless Application Environment
WDP	Wireless Datagram Protocol
WML	Wireless Markup Languages
WSP	Wireless Session Protocol
WTLS	Wireless Transport Layer Security

CHAPTER 1

INTRODUCTION

1.1 Introduction

PSM and PTA is the final project for the last year students in University Malaysia Pahang. From the first generation to my generation the lecturer of Fakulti Sistem Komputer & Kejuruteraan Perisian Universiti Malaysia Pahang used a form which is a piece of paper to final year student project presentation. Because of that, I need to enhance the system by using a PDA as a platform to evaluate the final year student's project and send the data using wireless function (WAP).Furthermore, PDA is an electronic organizer and it does not need to handle bloated spreadsheets, databases, or text documents. That work is best left to a desktop computer or laptop. Because of that the PDA is called "Personal Computer Assistant" which the main function is to synchronize the data with the PC. Otherwise, transferring data from PDA to database is quicker than having manually to input all the evaluation in the evaluation form.

1.2 Problem Statement

From the observation, the current system that has been used which is by using evaluation form where the entire lecturer evaluate the students projects which using a piece of paper. In this case, I developed the system to encouraged lecturer to use PDA's as a platform to evaluate all the students' projects. This system make the evaluation systems more effective, systematic and to easier to used by the lecturer.

Otherwise, we need to replace the PSM and PTA form by using PDA's as a prototype. We can send the data from PDA's to faculty system data. Furthermore, this system decreases the time and easy to produce result.

1.3 Objective

The main objectives of this project are:

(i) To develop a prototype system by using PDA's to replace evaluation form.

(ii) To help the lecturer to send the data by using PDA's direct to faculty data system.

(iii) To make the data transfer more quick and efficient.

(iv) To implement wireless application protocol (WAP) into this system application.

1.4 Scope

The scopes of the project that have been identified are:

i. A prototype system that will be used by PSM Committee Members and administrator.

ii. WAP systems that enable evaluator to evaluate their student by using wireless communication such as mobile phone and PDA (Personal Digital Assistance).

1.5 Thesis Organization

Overall this thesis consists of six (6) main chapters. Chapter 1 will discuss on introduction. It discuss on introduction to the system, problem statement, objective of the system, scope of project and organization thesis.

Chapter 2 discuss on literature review that consist of review of conventional system, problem of manual system or conventional system and ways to solve the problems.

Chapter 3 will explain more on system specification, techniques and overview of tasks that will be taken through the development of this project.

Chapter 4 will document all project development processes which include the explanation of the designed project, system interface, menu design, fail structure and explanation on database.

Chapter 5 will explain on result from analyze collected data. There will be also discussing on obstacle that is faced during project development and suggestion on how to improve the quality. The last chapter which is chapter 6 discuss on overall development of PSM/PTA Evaluation Using PDA's and the conclusion.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter presents a literature review based on the understanding and research of the project. This chapter is important to explain and carried out the system which wanted to develop. Furthermore, in this chapter we need to describe three existing system and methodologist related to the system we developed to make a comparison to come out the differences about the advantage and disadvantage.

Nowadays, ours faculty used form to evaluate student PSM and PTA. So, we need the improvement to change the form into PDA's application which we need to easier the evaluator without sending the form into faculty database but through ours PDA's application. This application used Java as their tools for development. This system implemented the technique learned from ours lecturer.

2.1.1 Domain

All application has its own domain based on the suitable process. For this project, we provided mobile phone or PDA's as a domain to run this application which is

evaluation PSM and PTA. Nowadays; we know that mobile phone is used by everyone in this world and easy to carry. So, for this advantage I choose to use PDA's to evaluate in my application project.[4]

Based on the article "Mobile Phone Applications in Academic Library Services: A Students' Feedback Survey," Emerald Journal Campus-Wide Information Systems Vol. 23 No. 1 2006, written by N. S. Abdul Karim, S. H. Darus and R. Hussin. The article reviews the current state of wireless technology, explores the utilization of mobile phone services at a public university in Malaysia, investigates the nature of mobile phone usage among university students and their perceptions of practical mobile phone applications within the context of library services.

It also explained about for measurement and data collection, a questionnaire was designed to elicit demographic information, experience in using mobile hand phones and awareness of available services, patterns of library use, perception of library services that may be provided via mobiles, and willingness to utilize and bear the cost of these services.[5]

2.1.2 WAP (Wireless Application Protocol)

Wireless Application Protocol is a specification for a set of communication protocols to standardize the way that wireless devices, such as cellular telephones and radio transceivers, can be used for Internet access, including e-mail, the World Wide Web, newsgroups, and instant messaging. While Internet access has been possible in the past, different manufacturers have used different technologies. In the future, devices and service systems that use WAP will be able to interoperate. It also can be define as a secure specification that allows users to access information instantly via handheld wireless devices such as mobile phones, pagers, two-way radios, smart phones and communicators.WAP supports most wireless networks. These include CDPD, CDMA, GSM, PDC, PHS, TDMA, FLEX, ReFLEX, iDEN, TETRA, DECT, DataTAC, and Mobitex.WAP is supported by all operating systems. Ones

specifically engineered for handheld devices include PalmOS, EPOC, Windows CE, FLEXOS, OS/9, and JavaOS.WAPs that use displays and access the Internet run what are called micro browsers with small file sizes that can accommodate the low memory constraints of handheld devices and the low-bandwidth constraints of a wireless-handheld network.[9]

Although WAP supports HTML and XML, the WML language (an XML application) is specifically devised for small screens and one-hand navigation without a keyboard. WML is scalable from two-line text displays up through graphic screens found on items such as smart phones and communicators. WAP also supports WML Script. It is similar to JavaScript, but makes minimal demands on memory and CPU power because it does not contain many of the unnecessary functions found in other scripting languages. Because WAP is fairly new, it is not a formal standard yet. It is still an initiative that was started by Unwired Planet, Motorola, Nokia, and Ericsson. [11]

2.1.3 Advantages of WAP

WAP have their advantages which are :

1) WAP is always available, if the user takes their WAP enabled mobile with them. But it need to be timely example like up-to-date stock market information during the day, traffic information on the way home.
2) The users location can be used to determine what to send to them.
3) WAP provides a standardized way to link the Internet to mobile phone.
4) WAP enabled mobile phone over any other devices (such as notebook) capable of Internet access is its portability.[3]

2.1.4 The disadvantages of WAP

WAP also has its many problems and disadvantage such as:

i. WAP needs improved of authorization and authentication models :
ii. It needs impersonation Support (the capability to pass your credential to another process without requesting a new service process).
iii. Protected resource authentication schemes are also needed.[3]

2.1.5 WAP protocol stack

In the modern society, information and access to information is getting more and more important. During the last couple of years, there is a strong tendency towards mobility. This implies an increasing need for being online and having access to information all the time. Browsing on the Internet is not restricted anymore to desktop computers; people can now also use their mobile phones or PDA. This is done by WAP, the Wireless Application Protocol. WAP is a protocol stack for wireless communication networks, specified by the WAP forum. The WAP forum is currently part of the Open Mobile Alliance. WAP is essentially a wireless equivalent to the Internet protocol stack (TCP/IP). A big advantage of WAP is that it is bearer independent. The most common bearer is currently GSM, but also a PDA or a third generation mobile phone can be used. In the rest of the paper, we will assume that a mobile phone is used to browse on the Internet.

The Wireless Application Protocol (WAP) is a protocol stack for wireless communication networks. WAP uses WTLS, a wireless variant of the SSL/TLS protocol, to secure the communication between the mobile phone and other parts of the WAP architecture. This paper describes the security architecture of WAP and some important properties of the WTLS protocol. There are however some security problems with WAP and the WTLS protocol. Privacy, data protection and integrity are not always provided.

Users and developers of WAP-applications should be aware of this. In this paper, we address the security weaknesses of WAP and WTLS and propose some countermeasures and good practices when using WAP. We conclude with advising when to use WAP and when not. [1]

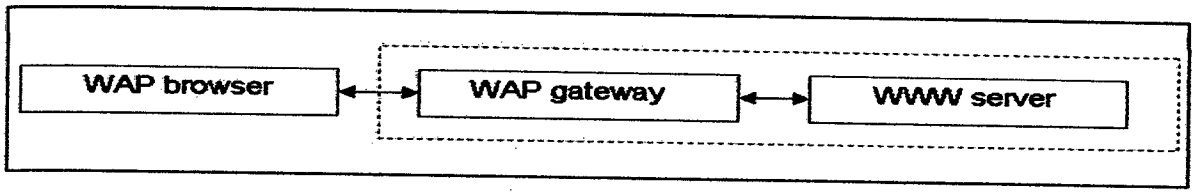

Figure 2.0: WAP Architecture

Figure 1 shows the basic WAP architecture. There are three participating entities: the WAP browser, the WAP gateway (also called WAP proxy) and a server on the Internet. When the mobile device wants to connect to the Internet, all the communication passes through the WAP gateway. This WAP gateway translates all the protocols used in WAP to the protocols used on the Internet. For example, the WAP proxy encodes the content to reduce the size of the data that has been sent over the wireless link. Another example is the WTLS protocol. The communication between the mobile device and the WAP gateway is secured with WTLS. WTLS is only used between the mobile device and the WAP gateway, while SSL/TLS can be used between the gateway and the Internet. [1]

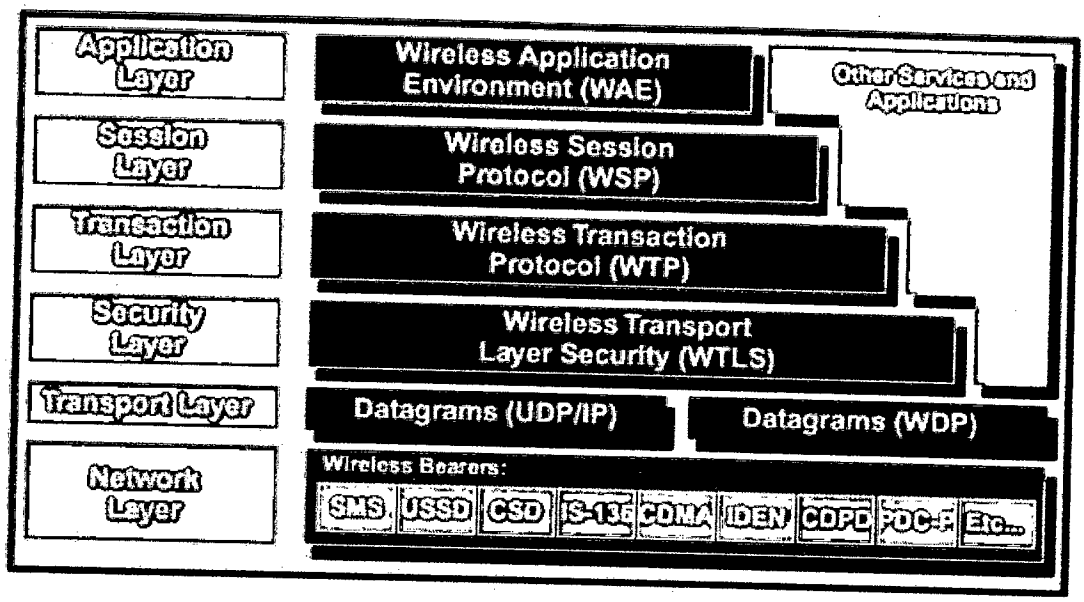

Figure 2.1: WAP Protocol Stack

Below is the briefing about the feature of protocol stack:

1. WAE - The Wireless Application Environment is a general-purpose application environment based on a combination of World Wide Web (WWW) and Mobile Telephony technologies. WAE establishes an interoperable environment that will allow operators and service providers to build applications and services that can reach a wide variety of different wireless platforms in an efficient and useful manner.
2. WSP - WSP provides the upper-level application layer of WAP with a consistent interface for two session services. The first is a connection-mode service that operates above a transaction layer protocol WTP, and the second is a connectionless service that operates above a secure or non-secure datagram transport service.
3. WTP - Wireless transaction protocol is a standard used in mobile telephony. It is a layer of the wireless access protocol (WAP) that is intended to bring Internet access to phones. It provides three different kinds of transaction services, namely, unreliable one-way, reliable one-way and reliable two-way transactions. This layer also includes optional user-to-user reliability by triggering the confirmation

of each received message. To reduce the number of messages sent, the feature of delaying acknowledgements can be used.

4. WTLS - Wireless Transport Layer Security (WTLS) is the security level for Wireless Application Protocol (WAP) applications. Based on *Transport Layer Security* (TLS) , WTLS was developed to address the problematic issues surrounding mobile network devices such as limited processing power and memory capacity, and low bandwidth and also to provide adequate authentication, data integrity, and privacy protection mechanisms.[1]

2.1.6 Servers and Gateways

WAP does not offer end-to-end security. WAP devices communicate with web servers through an intermediate WAP gateway. WTLS is only used between the device and the gateway, while SSL/TLS can be used between the gateway and the web server on the Internet. This means that the WAP gateway contains, at least for some period of time, unencrypted data (which can be highly confidential). [4]

The gateway vendors have to take steps to ensure that the decryption and re-encryption takes place in memory, that keys and unencrypted data are never saved to disk, and that all memory used as part of the encryption and decryption process is cleared before handed back to the operating system. The problem is even worse! The WAP architecture implicitly assumes that the user of the mobile phone (and the web server) trust the WAP gateway. All the (sensitive) data gets unencrypted by the WAP gateway.

2.1.7 Wireless Markup Languages (WML)

Wireless Markup Language, based on XML, is a markup language intended for devices that implement the Wireless Application Protocol (WAP) specification, such as mobile phones, and preceded the use of other markup languages now used with WAP, such as XHTML and even standard HTML. It also been called as HDML (Handheld