TASK REMINDER SYSTEM VIA SMS

NOOR SYAFIKA BINTI JAMALUDIN

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FACULTY OF COMPUTER SYSTEMS & SOFTWARE ENGINEERING UNIVERSITI MALAYSIA PAHANG

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ABSTRACT

Time management techniques say that it's better to keep track of tasks using a reminder system rather than your memory. Owing to intensive agenda, working person may have dozens of works and others tasks that should be done and it is normal that even people with much trained memory cannot remember everything. This is a critical problem which caused difficulty to staffs and lecturers of FSKKP for alerts on important messages received. This is because too many messages received in their email at the same time making it look unorganized. The purpose of this study is proposing a Task Reminder System via SMS. The system enables staffs and lectures to get reminder about their task due to the important of the message. Other than that, the system is using SMS application to give alertness to the staffs and lecturers about their task. Hopefully, with the Task Reminder System, it will help the staffs and lecturers of FSKKP to manage their task wisely and perform in the work better.

ABSTRAK

Teknik pengurusan masa mengatakan bahawa adalah lebih baik untuk memantau tugas dengan menggunakan sistem ingatan daripada memori anda. Merujuk kepada agenda intensif, orang bekerja mungkin mempunyai berpuluh-puluh kerja dan tugas-tugas lain yang perlu dilakukan dan ia adalah perkara biasa bahawa orang walaupun dengan banyak memori terlatih tidak dapat mengingati semuanya. Ini adalah masalah kritikal yang menyebabkan kesukaran kepada staf dan pensyarah FSKKP bagi amaran mesej penting yang diterima. Ini adalah kerana terlalu banyak mesej yang diterima dalam e-mel mereka pada masa yang sama menjadikan ia kelihatan tidak tersusun. Tujuan kajian ini mencadangkan Sistem Peringatan melalui SMS. Sistem ini membolehkan staff dan pensyarah untuk mendapatkan peringatan tentang tugas mereka melalui kepentingan mesej itu sendiri. Selain daripada itu, sistem itu menggunakan aplikasi SMS untuk memberi kewaspadaan kepada staf dan pensyarah tentang tugas mereka. Diharapkan dengan terciptanya Sistem Peringatan Petugas, akan membantu staff dan pensyarah FSKKP untuk menguruskan tugas mereka dengan bijak dan melaksanakan kerja yang lebih baik.

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CHAPTER 1: INTRODUCTION

1.1   Introduction

The Universiti Malaysia Pahang (UMP), formerly known as Kolej Universiti Kejuruteraan dan Teknologi Malaysia (KUKTEM), was established in 2002 and is located in Pahang, Malaysia. **. FSKKP was established to produce knowledgeable, high skilled and competitive graduates, within the sphere of software engineering, system and computer network.** The faculty has embarked on research and development activities in the area such as information systems, software engineering, computer systems, graphic and multimedia technology to produce technologies that are relevant to the needs of industries.

In UMP, all staff and lecturer in each faculties will receive the email or message from E-community which well known as E-com. In this study, focus is given to the **Faculty of Computer Systems & Software Engineering (**FSKKP) because all faculties in UMP are experiencing the same problems in the task reminder system. In addition, by implementing this system in FSKKP, it can also be adopted by other faculties in reminder process.

The system function as the administration staff (admin) is managed the message that needs to be sending to the user. The user of this system is lecturer, staff and also the student of FSKKP. The admin will send the message through Task Reminder System (TReViS) and the message will automatically spread to the user based on their requirement of the message.

Therefore, this motivates us to develop a FSKKP Task Reminder System, which using web based system that allow administrator to record data of user electronically. The system will send a message by SMS as notification to receiver.
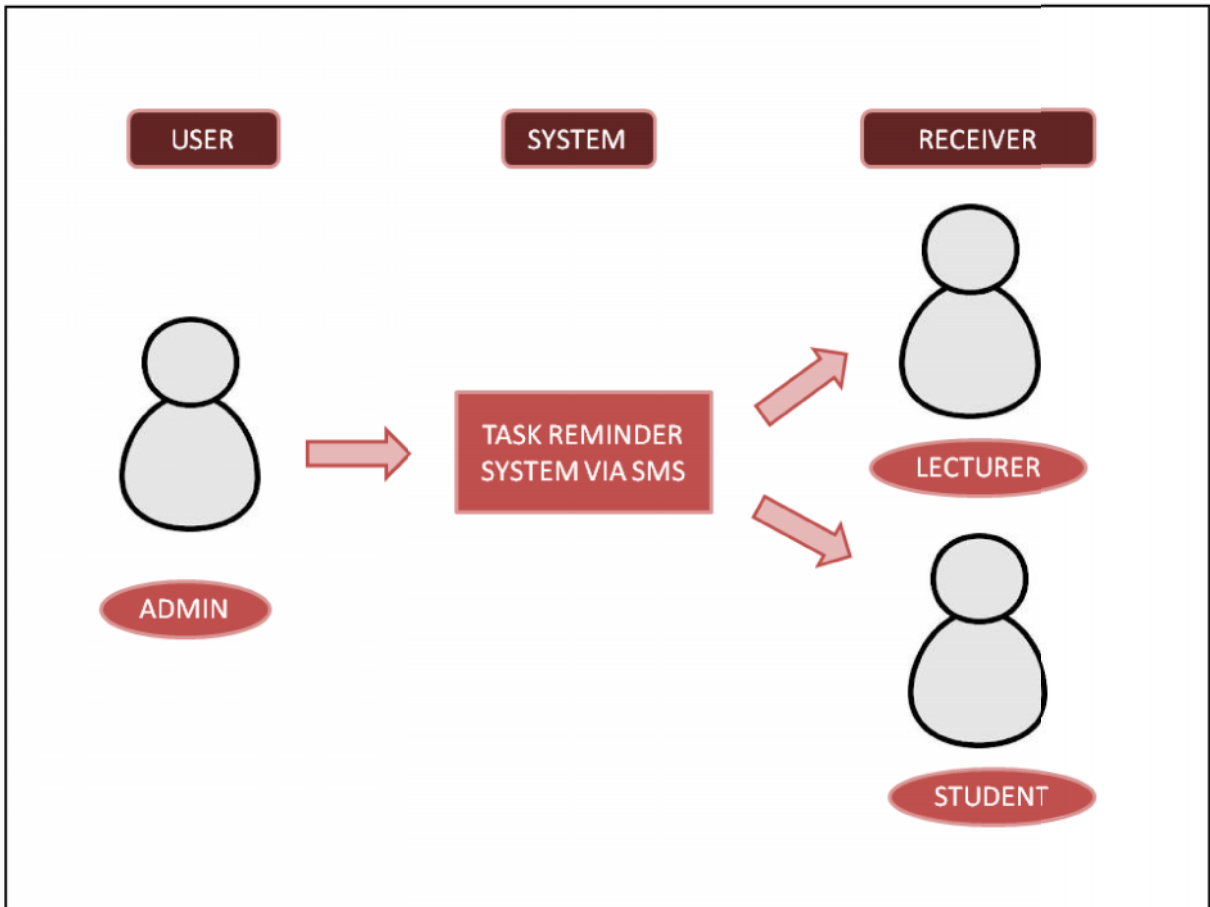
Figure 1: Systematic diagram how the systems work.

1.2 Problem Statement

The main problems in this research are the staff and lecturers forgot appointments that have been arranged and left things that is important to do. Apart from that the problems to be solved are:

i) There too many messages sent at one time and the messages received are not fully managed by administrative staff and cause the staff not alerts with the important messages.

ii) The staff need to login the e-community to check for urgent and important message, where is take time to check the appointment.

1.3   Objective

The main objective of the research is to develop a prototype that will send the task reminder via SMS to the lecturers in Faculty of Computer System and Software Engineering (FSKKP) at University Malaysia Pahang (UMP).

i) To develop a system that helps out the staff to make their message receive are more manageable and easy to the check their task within the system.

ii) To build a system that give alert message using SMS application at the same time make things easier for staff and lecturer of FSKKP to check their task.

1.4 Scope

The main scope of this study is to develop system that can be used to the user as the alert message to give reminder using the SMS. Other scope for this study is:

i.   STAFF/ADMIN that is working at FSKKP

FSKKP staff, can access all data related to the lecturers information. Then for admin they have special privileges to the system because they can use the system as they want like delete, add, copy or move the data to another place.

ii.   INSTRUCTORS/LECTURERS that working under FSKKP

FSKKP lecturers, can access to the list of appointment and meeting record. Besides that they also can view schedule that generated for them using the system.

iii.   STUDENTS that under FSKKP

FSKKP student can get the list of appointment and meeting record. Besides that they also can view schedule that generated for them using the system.

1.5   Thesis Organization

Thesis organization is about how to organize the thesis and general introduction to what will be describe in all of the chapters in the thesis. The explanation about all of the chapters is briefly summarized. Chapter 1 covers the background, problem statement, objectives, scope, and thesis organization for the project.

Chapter 2 discuss about the literature review. This chapter contains research information that is related to the project to get the general overview about the techniques, its applications, and other approaches by doing online surveying.

Chapter 3 covers the methodology. In this chapter, all of the implementation, techniques that will be use, all of the process that involve, and the development phase will be discuss.

Chapter 4 will present about the implementation and findings also about conclusion and contribution of the project. Also discuss suggestion about future works based on the analysis and recommendation of the proposed method for what need to be repair and enhance for the future.

Chapter 5 will discusses the outcome, output or result that have been obtained and an analysis of the data. In addition, this chapter also contains the result analysis, project constraint of the data.

Chapter 6 will elaborate the project conclusion. There are observation on strength and weakness and also the whole project conclusion

CHAPTER 2

LITERATURE RIVIEW

INTRODUCTION

Task Reminder System via SMS (TReViS) is a combination of many current application that has been exist in the market nowadays. The function is to be organizing the task and then send a Short Message Services (SMS) alert as a reminder to be use through Mobile Phone. It will use a system that will organize the task and schedule it by priority. These applications also use a SMS gateway to send the alert message to the user to remind them that the task is coming in few hours or days.
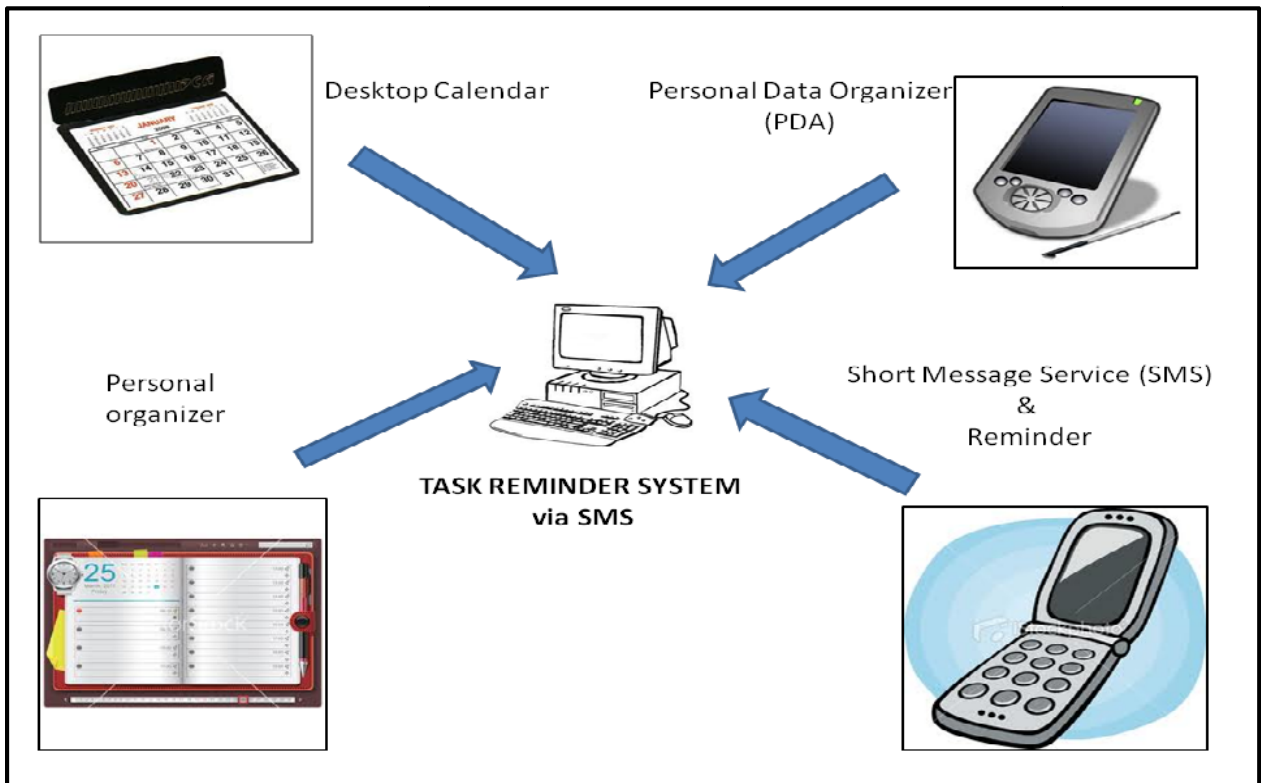
Figure 2.1: The combination of many applications to develop TReViS

Figure 2.1 above shows that the Task Reminder System via SMS (TReViS) is the combination of many applications existed in the market nowadays. There are Personal Data Assistant (PDA), Desktop Calendar, Personal Organizer, Short Message Services (SMS) and Phone Reminder. All these application will be implementing to create a system called TReViS.

2.2   Features of TReViS

Task Reminder System has many features that very helpful to the user. The first that can be described is calendar system. Calendar will be use as a reference to the dates and the days that users are going to set. The user can view the current date and month or the previous and next month calendar.

Second functions are organizer that will help to arrange the task with priority. The user needs to insert the new data or task to database before they can send SMS as a reminder. The user or admin also can display all the data that has been inserted before.

Meanwhile, reminder will functioning to send SMS to the mobile phone after all the information confirmed by the user such as phone number and task. Then the report message will be generated to show that the SMS reminder has successfully sent to the user. The report also will contain the information of the message sent.

The Current System and Application

Task Reminder System can be define as an application that will give warning and remind the user about the task that has been scheduled. It can be found in many applications. When the task that has been set before is coming to the occurrence time, then the reminder will reply a pop-up message to the windows in order to inform the user about their task. In certain application it will only has the SMS system without reminder.

2.2.1 Personal Organizer

In today's market, Personal Organizer (PO) is mostly like a diary. User will write everything in the PO for the task that need to be done in the next day. So the user must always check it to remember the entire task to getting prepared if they need to go somewhere or to finished any works. In current PO, contains the features like Calendar, Phone Book, Notes, Expenses, Goals and schedule.

2.2.1.1 Advantages

It is interesting because of this PO are provided in many sizes, colors and patterns with different features depends on the user to choose which one they want based on their interest and needed. The user can be easily rewrite, change or store it because it's a manually system.

2.2.1.2 Disadvantages

Totally manual and it is not effective anymore in today technology worlds. It also can be stolen and other peoples can read the content because this PO doesn't have a security unless the user must keep the PO all the time. The user must always check the reminder to ensure about the task that has been scheduled (No Reminder).

2.2.2   Personal Data Assistant (PDA)

PDA is handled computers that originally were designed as personal organizers and the applications are perform exceptionally well. The basic features of any PDA are date book, address book, task list and memo pad. While these features are very helpful at keeping someone schedule organized, the feature that clinched their utility for any busy persons who use a desktop computer is that of easy synchronization of information with the desktop.

2.2.2.1 Advantages

PDAs are often used by business man in order to assist the operations of their business for their time management. It will be use and act as personal assistant in order to help user to organize the task. There also contains many purpose functions like Telephone, SMS, WAP and email. It was so efficient and effective, small size so it can save the space and also easier to carry anywhere.

2.2.2.2 Disadvantages

Since this project to Faculty of Computer System and Software Engineering (FSKKP) students and lectures, PDA is not suitable for them to use it. This is because it is so expensive and it is more useful to Businessman and Broker. The maintenance to fix it also need high cost and student did not afford to pay for it. Sometimes, many PDA use ouch screen as keypad. So, the special pencil for the touch screen will be use to make it functioning well. This application not efficient to make it fast and not everybody are familiar with PDA style.

2.2.3   Short Message System (SMS)

SMS is an application contains in the Mobile Phone. It also an application that been use in the internet for online base. SMS allows user to send text message from the mobile phone to another. For the TRSMS, SMS will be use whenever the task war set and it's time to tell the user about the task when reach the due date. So, SMS will be sending to the user by the TRSMS as a reminder to give awareness and warning, so the user will be alert about the schedule. Current personal organizers do not have this features because it was manually done and not an online system.

2.2.3.1 Advantages

If the user has the Mobile Phone, for sure SMS is the most popular functions in it. This is the common application for everybody to communicate with each others. Plus, there is a lot of contest that use SMS as their core method to join it prove that this way of communication are more relevant today. SMS has become more popular because it is easy and simple to use, so everybody knows how to use it and every type of mobile phone has this kind of application.

2.2.3.2 Disadvantages

It was costly because the users must have credit to send the SMS, current SMS application on the internet must be registered and not provided features to support TRSMS system. This SMS cannot be attached the task to set an alert system to the user and use a SMS gateway. Sometimes SMS costs are different is the user did not using the same provider. It was difficult to make everybody to use the same line provider to make it their cost fair and worth.

2.2.4   Reminder

Reminder is a feature that contain in a Mobile Phone. In the Mobile Phone, it is like notes that will alert user about the thing that user have to set before. For the online Reminder application, it is mostly like a program that will automatically pop up a dialog box at computer startup time with the events that user wanted to know based on the days set by user prior to their occurrence.

2.2.4.1 Advantages

Reminder in mobile was provided in common Mobile Phone to remind the user and Online Reminder is user friendly with so many choices of application in the internet for free downloading. Reminder also has many ring tones to give user awake or alert user. Some of the reminder in the Mobile Phone got the calendar to be referred at the time needed to be set. Since this reminder was build in the Mobile Phone, so the user can carry it all the time and it also can be function as alarm clock.

2.2.4.2 Disadvantages

In Mobile Phone, reminder has limited function that user cannot use for many purposes. Online reminder, it is only pop up to the window, which means the user must turn on the PC first if they want to see the schedule. The reminder also did not have the database to store all the information about the task that will be reminds later. Once the user set to be reminded, the information cannot be navigated to display the previous data.

2.2.5 Desktop Calendar

Desktop Calendar have the features such as notes, alarm, tasks and its data on user desktop through the integration with existing wallpaper. The user can organize the task and notes or data in layers and display at windows to make sure the user always remember the schedule all the time they are turn on the computer. User can set each note to be normal, private or invisible desktop view. Private notes are been displayed as generic text reminder and invisible notes are not displayed at all. Printing calendar data is easy and includes an option to choose data range for printing notes.

2.2.5.1 Advantages

From my opinion, many FSKKP lecturers and students using this application by installed at their computer. This is because desktop calendar is very interesting and got many features that provided and using a graphically design to manage the task. When user is using their computer but at the same time the schedule that has been set reaches the time, the message will be display to inform the user. It is like the application assists the user while they are busy with other task on the computer.

2.2.5.2 Disadvantages

Although it is provided so many features but it cannot give alertness to the user through the mobile phone and the user must turn on the computer first to see the task that has been schedule. Meanwhile, desktop calendar still need to be upgrade because the database was limited and did not recognize the user because it is freeware and also did not secure as well.

2.3   SMS Application

The Short Message Service (SMS) is the ability to send and receive text messages to and from mobile phones. The txt can comprise of words or numbers or an alphanumeric combination. SMS was created as part of the GSM Phase 1 standard. The first short message is believed to have been sent in December 1992 from a Personal Computer (PC) to a mobile phone on the Vodafone GSM network in the United Kingdom. Each short message is up to 160 characters is length when Latin alphabets are used and 10 characters in length when non-Latin alphabets such as Arabic and Chinese are used (Calum Macleod, 2004).

SMS can be used and incorporated to provide commercial services like news flashes, sports, travel information like flight timings and status. SMS Applications can be built by interfacing them to an SMSC, which is the central component in a SMS network. However there are many SMSC and each vendor's SMSC support its own protocol. Standard protocols are not common and application complexity increases due to the varied protocols platforms and environment. SMS Gateway allows applications to be built on standard Internet development Platforms by translating SMSC specifics protocols into industry standard HTTP formats.

The use of internet-based environment for SMS applications also means that most standard HTML web-applications can be easily adapted and used to start providing services over SMS. This is the type of applications that has been chosen. Advertising: SMS can be used to send targeted alerts to a user. The user would sign up to the system to receive special alerts informing the user about the upcoming events. Additionally, business also can use SMS as a form of low-cost advertising (Steven M.Schafer, 2004).

2.3.1   Method of Sending SMS

For any system that using SMS as their application, the developer must consider the method on how to make sure the SMS will be successfully sent to the user. So, there are three methods to make it possible in order to sending SMS from the application (Calum Macleod, 2004.)

2.3.1.1 Line Provider

In Malaysia, there are many line provided such as Telecom Malaysia, Maxis, Celcom, DiGi and Jaring. These providers are the second party that responsible for the line to make it user be able to communicate. The TELCO is an organization that acts as the third party to deal with them to rent a line to sending SMS either from the Mobile Phone or an application. This is the best method because it is efficient and effective for real time application. The infirmities of this method are it is too costly and not suitable for Undergraduate Project and also the receiver need to pay for a SMS.

2.3.1.2 GSM Modem

It will be function like ordinary modem which is to be like "bridge" between an application and Mobile Phone. The users need to insert SIM card to enable it functioning correctly. The credit will be deducted from the SIM card. Another option of sending SMS smoothly but lack of info on how to setup and costly because need to buy it worth RM 1500.

2.3.1.3 GSM Phone

The GSM Phone is look like ordinary mobile phone and only has function that is serial port at the bottom of the phone. The function is same like GSM Modem. It is cheaper, afford to have it and easy to use. So, this method is chosen to be used on this system.

2.4   SMS Gateway

SMS Gateway is a utility which enables us to send & receive text and binary Short Messages over GSM / PCS digital cellular telephone networks. This consists of an interactive messaging application with the source code, and a standalone messaging gateway to other windows applications through the use of DDE, OLE, & Command Line Interface.

Since SMS Gateway supports POP3 for message transmission and SMTP for message reception it can be integrated with any email environment without need for custom development.

This gateway is centered on convenience, flexibility, and seamless integration of messaging services and data access. Since SMS allows for two way communication, it is a far more advanced and reliable service than paging. SMS gateway technology supports a variety of value added services (Regis J., Bates Jr, 2001).

2.5   Global System for Mobile Communication

The Global System for Mobile Communications (GSM) network is the wireless standard chosen by some 170 countries around the world as the system of choice for digital wireless communications. This standard operates predominantly on the 900 and 1800 MHz frequency and is employed in most parts of Europe, Asia, Africa, and Australia (Vijay K. Garg & Joseph E.Wilkes, 1999).

GSM has rapidly become the most widely accepted and adopted wireless standard in the world. It now accounts for over 70% of the globe's cellular market. Particular coverage may vary slightly depending upon the service provider chosen by the subscriber. It is also employed in North America and parts of South America on the 1900 MHz frequency standard.

2.6   Protocol

SMS has become a popular mode of transmitting short text messages. SMS application development is fairly simple and is designed to work with standard Internet protocols such as SMTP and HTTP.

SMS is a universal data service and is supported in GSM, TDMA, and CDMA networks. A SMS can originate from an external system such as email or mobile device and is routed through the network, via the short messaging service centre (SMSC), to its destination. A distinguishing feature of SMS is its ability to deliver messages any time, regardless of whether data or voice calls are in progress.

Writing a SMS application is fairly simple. Carriers have made it difficult, however for developers to write SMS applications because the carriers would have tp expose their APIs, making them available over TCP/IP, which they are reluctant to do. However, most of the carriers have exposed Simple Mail Transport Protocol (SMTP), which allows developers to write short text messages through an email interface. This section walks you through the implementation of an application to send a short text message to a mobile phone. Noted, that for the example to work, the user will have to access to a valid SMTP server (Mcginity, 1999).