

**TASK REMINDER BY SMS**

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## ABSTRACT

For the time being, task load is the common problem that been face by many people until they forgot about what to do next according to the schedule that has been given. So, it is a needed to create a mechanism to ensure the entire task will be inform to the person to avoid from late or missed .Task Reminder by SMS is an application that will be build in order to help users to manage the entire task that has been scheduled. The focus of this project will be concern on development of SMS structure that contains on how the SMS can be send and receive successfully. This project also will try to give some priority to create at least one networking element to ensure the system capable to communicate with device (Mobile Phone). The Application will be build as an application that been connected to the Mobile Phone because it is easier to give some alert because of the user always bring along their Mobile Phone together whenever they are. The user only need enter all the tasks, functions, appointment and any important date to the system and then the user will asked to set the priority based on the suitability. Then the system will send a SMS alert to remind the user that the time for occurrence is coming. Therefore, the user will always realize and always get ready in order to prevent any problem occur and then be able to achieve objectives easily. The System Development Life Cycle (SDLC) has chosen to perform on this project containing five phases. All the phases need to be done continuously until the project finished and the output successfully generated. The output would be come out with a system that will function as a platform to manage all the task and sending SMS reminder to the user.

## ABSTRAK

Pada masa kini, kebanyakan orang terlalu sibuk dengan bebanan tugas sehingga lupa akan apa yang patut dilakukan mengikut jadual yang telah ditetapkan. Jadi, perlunya ada satu bentuk mekanisma bagi membolehkan segala tugas dimaklumkan agar tidak terlupa atau terlewat. Peringatan tugas melalui pesanan ringkas merupakan satu aplikasi yang akan dibangunkan dengan tujuan untuk membantu pengguna menguruskan segala tugas yang telah ditetapkan. Ia akan dibangunkan dalam bentuk aplikasi yang dihubungkan dengan Telefon Bimbit agar ianya lebih mudah untuk memberi peringatan kepada pengguna kerana pengguna sememangnya sentiasa membawa Telefon Bimbit. Fokus pembangunan projek ini akan diberatkan ke arah bagaimana pesanan ringkas tersebut boleh dihantar dari sistem dan diterima oleh pengguna. Projek ini juga akan memastikan terdapat sekurang-kurangnya satu elemen rangkaian seperti komunikasi antara peranti (Telefon Bimbit) dan sistem berjaya dilaksanakan. Sebagai pengguna akhir, pengguna tersebut hanya perlu memasukkan segala jenis tugas, acara, pertemuan atau tarikh-tarikh penting ke dalam aplikasi ini kemudian pengguna diminta menetapkan tahap kepentingan berdasarkan kesesuaian dan kemudian sistem akan menghantar satu pesanan ringkas peringatan kepada pengguna untuk memberi peringatan yang masa sesuatu acara, tugas, pertemuan semakin hampir dengan masa sebenar. Dengan itu, pengguna akan sentiasa sedar dan bersiap sedia agar tidak lewat dan mampu mencapai objektif tugas yang ditetapkan dengan mudah. Kaedah Kitaran Hidup Pembangunan Sistem yang mengadungi lima fasa. Kaedah tersebut digunakan di dalam projek ini dan ianya perlu dilakukan berturutan bagi setiap fasa sehinggalah proses tersebut tamat dan projek siap sepenuhnya. Maka terhasilah sebuah system yang berfungsi mengawalselia tugas pengguna dengan menghantar pesanan ringkas terus kepada pengguna sebagai satu alat peringatan yang berguna.

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**LIST OF ABBREVIATION**

TRBSMS	Task Reminder by SMS
PO	Personal Organizer
SMS	Short Message System
PDA	Personal Data Assistant
PC	Personal Computer
GSM	Global System for Mobile Communication
UK	United Kingdom
SMSC	Short Message System Center
HTTP	Hyper Text Transfer Protocol
HTML	Hyper Text Markup Language
DDE	Data Dynamic Exchange
OLE	Object Linking & Embedded
POP3	Post Office Protocol (version 3)
MHz	Mega Hertz
TDMA	Time Division Multiple Access
CDMA	Code Division Multiple Access
TCP/IP	Transmission Control Protocol / Internet Protocol
API	Application Program Interface
SMTP	Simple Mail Transport Protocol
VB	Visual Basic
SDLC	System Development Life Cycle
AT	Attention
GPRS	General Packet Radio Service
PSM	Projek Sarjana Muda

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## **CHAPTER 1**

### **INTRODUCTION**

Nowadays, people getting busier with the task load that never ending as long as we can manage it properly. So, many believe that people must have their own personal assistant to help in scheduling the task in order to make it their routine more efficient and effective. 24 hours a day is not enough for a carrier man or even students. This is because every minute people must know what to do just because they can not turn back the time that passed with nothing. They should planned and set the time for what we will go to do to prevent the wasted time.

Like a Personal Organizer, that it is most like a book with diary size contains so many kinds of features. People have to write it our plan in the Personal Organizer by with the small notes needed but the personal organizer did not remind them as long as you open up the Personal Organizer usually.

Task Reminder by Short Message System (TRBSMS) will help users to reduce the task load that might be hard to remember all the things in our mind. So, it can simply make it user's life easier, smooth and avoid delayed.

With this Task Reminder by Short Message System, all the problem can be solve. This is because, "Task Reminder by Short Message System" can help to organize your task and added with multifunctional. The contents in this application are like Organizer, Reminder, Calendar, and Report.

## 1.1 Problem Statement

An usual Personal Organizer is build for those who are really effort to have it because it is build together in Personal Data Assistant (PDA). As we known, PDA is quite expensive and it's suitable only for people who involve in business field. Some of the conventional Personal Organizer which is like Diary is not practical anymore because of its still use paper and they can't organize your task efficiently. This is because you must carry out the Personal Organizer together with you all the time to remind you what to do.

Same also with the Personal Organizer that has been installed in you PC, its still can not work effectively because not all the time we sit in front of PC just for make sure that we realize the due date is coming. Personal Organizer doesn't have additional features that very useful and limited function. Many personal organizers in market now are not suitable for student and need a high requirements and not user friendly. Although the Mobile Phone had their own Reminder function, but their spaces are limited and could not manage much bigger task than ever. The Reminder only reminds to you about the task without any details descriptions.

At the end of this project, all the task that been scheduled will be reminded to the user by using SMS. The users only need to have GSM phone and data cable to make it able to send SMS reminder to the user by the Task Reminder By SMS (TRBSMS). TRBSMS need to be installed at user's computer and then the user needs to run the application. First step need to be done is to register as a member of this application. This is because TRBSMS need a profile of user to secure all the data and to make sure this application not to be used from non-member.

## **1.2 Objectives**

- i. To develop task reminder prototype through Mobile Phone by short message system.
- ii. To develop an organizer and report as the add-on application.

## **1.3 Scope Of Project**

- i. To be implemented for student at KUKTEM.
- ii. This prototype will use data cable to connect GSM phone to distribute all the SMS.
- iii. All lines (Maxis, DiGi & Celcom) are able to receive SMS from this prototype.
- iv. Provide delivery report to inform the user when the SMS is successfully sent.
- v. The limitation of SMS is up to 330 characters.
- vi. The information of SMS is about Task, Mobile Phone number, Time, Place message.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

Task Reminder by SMS (TRBSMS) is the combination of many current applications that has been exist in the market nowadays. The function is to organize the task and then send a SMS alert as a reminder to the user through the Mobile Phone. So, it will use a system that will organize the task and schedule it by priority. And also use a SMS gateway to send the alert SMS to the user to tell them that the task is coming in a few hours or days (can be set by the user according to their needs)

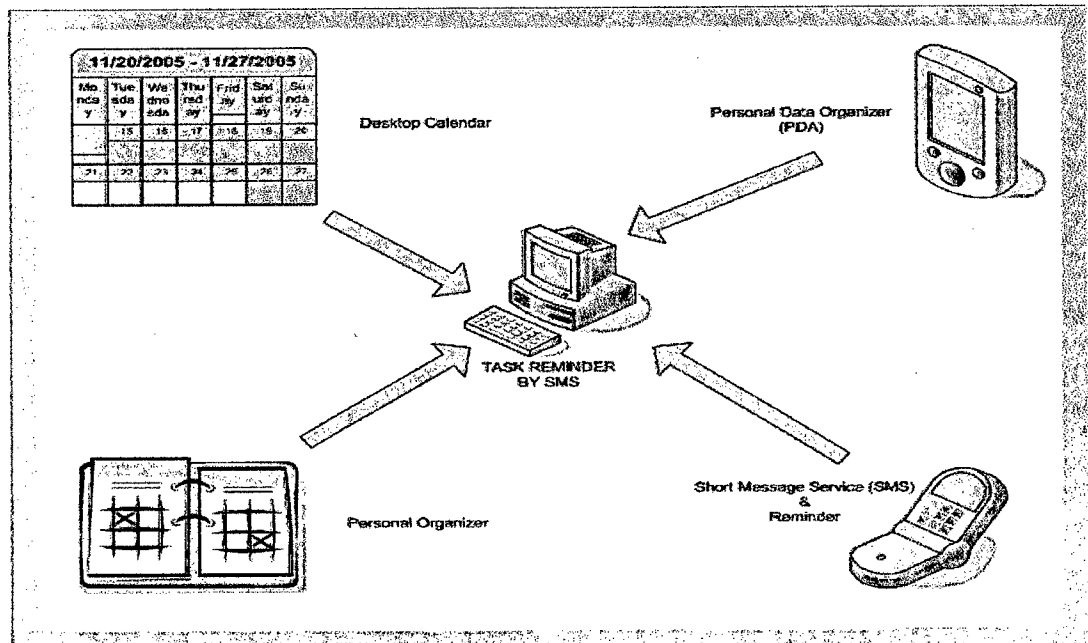


Figure 2.1 : The combination of many application to develop TRBSMS

In the previous page, figure 2.1 shows that Task Reminder of SMS (TRBSMS) is the combination of many applications existed in the market nowadays. There are Personal Data Assistant (PDA), Desktop Calendar, Personal Organizer, Short Message System (SMS) and Reminder. All these application will be enhanced to create new system called TRBSMS.

## **2.2 Features of TRBSMS**

Task Reminder has many features that very useful to the user. The first function is calendar. Calendar will be use as a reference to the date and day that user's going to set. The user can view the current date and month or the previous and next month calendar.

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

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

## **2.3 The Current System**

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

### **2.3.1 Personal Organizer**

In the 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 the current PO, contains the features like Calendar, Phone Book, Notes, Expenses, Goals and schedule.

#### **2.3.1.1 Advantages**

Interesting because of these PO are provided in many sizes, colors and patterns with different features depends on the user to choose which they like base on their needed. The User can be easily rewrite, change or store it because it's a manually.

#### **2.3.1.2 Disadvantages**

Totally manual and it's not effective anymore in today's technology world. Can be stolen and other people can read the contents because this PO don't have a security unless the user must keep the PO all the time. The user must always check to ensure about the task that has been scheduled (No Reminder).

### **2.3.2 Personal Data Assistant (PDA)**

PDA is handheld computers that originally were designed as personal organizers, and they do this really well. The basic features of any PDA are a date book, address book, task list, and memo pad. While these features are very helpful at keeping someone organized, the feature that clinched their utility for any busy person who uses a desktop computer is that of easy synchronization of information with the desktop.

#### **2.3.2.1 Advantages**

PDA was usually used by business man that very good to them for their time management. It will act as their personal assistant in order to help the user to organize the task. There are also contains many purpose function like Telephone, SMS, WAP and e-mail. It was so efficient and effective, small size and easier to carry out anywhere.

#### **2.3.2.2 Disadvantages**

Since this project only focus to KUKTEM student, PDA is not suitable for them to use. This is because it is so expensive and because it is very useful for only Businessman and Broker. The maintenance also high with cost and student did not afford to pay. Sometime, many PDA use touch screen as keypad. So, pencil will be use to make it functioning well. This will not efficient to make it fast and not everybody familiar with PDA style.



### **2.3.3 Short Message System (SMS)**

SMS is an application contains in the Mobile Phone. It is also an application that been use in the internet for online base. SMS allows user to send text message from a mobile phone to another. For the TRBSMS, SMS will be use whenever the task was 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 TRBSMS as a Reminder to alert the user about the schedule. Current personal organizer don not have this feature because it's manually and not an online system.

#### **2.3.3.1 Advantages**

If the user has Mobile Phone, for sure SMS is the most popular function in their Mobile Phone. This is common application for everybody to communicate with each other. Plus, there is a lot of contest that using SMS as their core method to join it. SMS also was so popular because it is easier and simple, so everybody knows how to use SMS and all type of mobile Phone have SMS application.

#### **2.3.3.2 Disadvantages**

Costly because the user must have credit to send the SMS, Current SMS application on the internet must be registered and not provided features to support TRBSMS system. Can not be attached the task to set an alert system to the user and Use a SMS gateway. Sometime SMS costs are different if the user did not using the same provider. It was difficult to make it 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 a note that will alert the user about the thing that they have set before. But for Reminder application online, it is mostly like a program that automatically pops up a dialog box at computer startup time with events you wanted to know 1-7 days (your choice) prior to their occurrence.

### **2.2.4.1 Advantages**

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

### **2.2.4.2 Disadvantages**

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

## **2.2.5 Desktop Calendar**

Desktop calendar features notes, tasks, alarms, and displays its data on your desktop through 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 on the computer. You can set each note to normal, private or invisible desktop view. Private notes are displayed as generic text reminder and invisible notes are not displayed at all. Printing calendar data is easy and includes an option to choose date range for printing notes.

### **2.2.5.1 Advantages**

From my observation, many KUKTEM student 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 a user is using their computer and at that time the schedule that been set reaches the accuracy time, message will be display to inform the user. It's like this application assist user while they busy with the other task on the computer.

### **2.2.5.2 Disadvantages**

Although it is provided so many features but it can not alert to the user through the Mobile Phone and the user must ON the computer to see the task that that has been scheduled. Meanwhile, desktop calendar still need to be upgrade because the database was limited and did not recognize the user because it's 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 telephones. The text 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 in length when Latin alphabets are used and 70 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, and more. SMS Applications can be built by interfacing them to an SMSC, which is the central component in an SMS network. However there are many SMSC and each vendor's SMSC supports its own protocol. Standard protocols are not common and application complexity increases due to varied protocols platforms and environments. SMS Gateway allow applications to be built on standard Internet development platforms by translating SMSC specific 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 application that has been chosen. Advertising: SMS can be used to send targeted alerts to a user. The user would sign up to receive special alerts informing the user of upcoming events. Additionally, businesses 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 Application (Calum Macleod, 2004).

#### **2.3.1.1 Line Provider**

In Malaysia, there are many Line providers 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. Then 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's efficient and effective for real time application. But 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 user needs 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 1500.00.

#### **2.3.1.2 GSM Phone**

The GSM Phone is look like ordinary Mobile Phone and only have extra 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 source code, and a stand alone 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.

SMS Gateways are 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. (Bud) 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 on GSM, TDMA, and CDMA networks. An SMS message can originate from an external system such as e-mail or mobile device and is routed through the network, via the short messaging service center (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 an SMS application is fairly simple. Carriers have made it difficult, however, for developers to write SMS applications because the carriers would have to 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 e-mail interface. This section walks you through the implementation of an application to send a short text message to a mobile phone. Note, that for the example to work, you will have to have access to a valid SMTP server (Mcginity, 1999).

## 2.7 The Structure

According to the figure 2.1 below, this is an overall view of the SMS structure. Imagine user X is a user that will be using this system. Let say, user X already organized his/her task and the time for occurrence is coming in two hours and his/her have set to remind him/her in one hour before the actual time of task.

When SMS application is ready to remind the user, it will use Application Program Interface (API) as an inter-communicator between user and the system. The system used Simple Mail Transport Protocol (SMTP) as a protocol to allowed user sending a SMS over the Internet. SMTP server will be act as a Host that will be serve and manage of this system. It will pass through Internet and go to the Short Message System Center (SMSC). SMSC will be act as Temporary Database to store the data before it send to the destination. To ensure the data from SMS Application will successful sent to the Mobile phone, SMS Gateway will be use to determine the destination that has been set by user. Lastly, the user will receive the SMS reminder. The Common Mobile Phone that installed Global System for Mobile (GSM) is the best cellular phone to achieve the objective of this system. Therefore, the user is now reminded by the system.

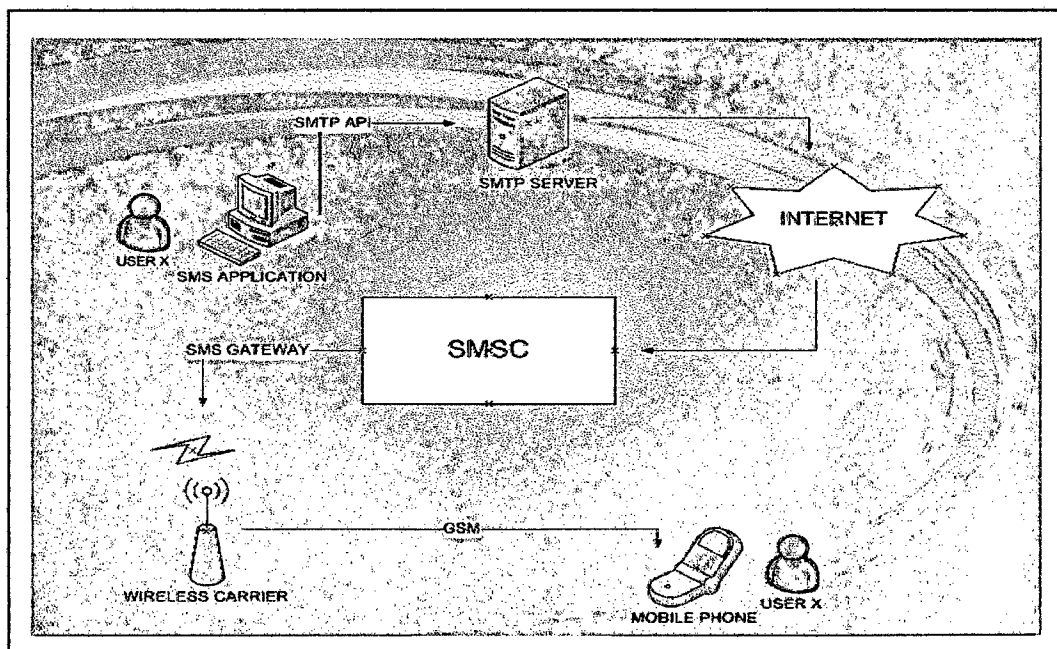


Figure 2.2 : SMS structure