# MAIL NOTIFICATION SYSTEM USING SMS

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A thesis submitted in partial fulfillment of the requirement for the award of the Bachelor of Computer Science (Software Engineering)

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MAY, 2011

PERPUSTAKAAN
UNIVERSITI MALAYSIA PAHANG

| No. Perolehan | No. Panggilan |
| --- | --- |
| 068674 | QA 76.76 .A65 I58 2011 |
| Tarikh: 30 NOV 2012 | |

## ABSTRACT

Mail Management System Using SMS (MANSUS) is a system that helps Residence Office process student mail more efficiently. The system is so called efficient because as we all know there are thousands of students live in university. All the mails that posted to them will be sent to Residence Office to be arranged and organized according to their name or room number. So, to be more systematic in managing all the mails, I build the system so called MANSUS so that the staffs no need to serve every student when they come to the office and asked for their mail. MANSUS is a stand-alone system whereby the system has to be installed in the computer before using the system. To be more ease for staff instead of they need enter all the students' name, they just have to connect the text scanner to the PC and read the name on the mail thus the data will be added in the database. The system will then automatically retrieve student's name in the database based on the name that scanned. After the confirmation is made, the notification will be sent to students via mobile phone. Once the student receives the notification, they can pick up their mail at Residential Office. As a conclusion, this system is made for staff just to make ease to control the flow of students' mail as well as students being notify about their mail.

# ABSTRAK

Mail Notification System Using SMS (MANSUS) adalah sistem yang boleh membantu Pejabat Kolej Kediaman menguruskan surat-surat pelajar dengan lebih efisyen. Sistem ini dikatakan efisyen kerana seperti yang kita sedia maklum, terdapat ribuan pelajar yang tinggal didalam kolej kediaman yang disediakan oleh pihak university. Semua surat yang dihantar kepada meraka akan diproses terlebih dahulu di Pejabat Pendaftar. Jadi, untuk melancarkan proses pengurusan surat-surat itu, saya telah mencipta sebuah sistem yang dipanggil MANSUS dimana sistem ini akan memudahkan kakitangan Pejabat Kolej Kediaman kerana tidak perlu lagi melayani setiap pelajar yang dating untuk mengambil surat. MANSUS adalah sistem yang beroperasi dimana sistem ini perlu diimplemen di dalam computer sebelum menggunakannya. Untuk menjadikan kerja kakitangan lebih mudah, mereka perlu memasukkan nama pelajar dengan hanya mengimbas nama itu dengan menggunakan pengimbas teks yang telah disambungkan ke PC. Sistem ini kemudian akan beroperasi secara automatic dengan memadankan nama pelajar didalam sistem data berdasarkan nama yang telah diimbas. Setelah pengesahan dilakukan, notis akan dihantar ke siswa melalui telefon bimbit. Setelah itu, pelajar boleh mengambil surat mereka di Pejabat Kolej Kediaman. Sebagai kesimpulan, sistem ini direka khas untuk kakitangan untuk memudahkan pengawalan aliran surat pelajar serta memberitahu pelajar mengenia surat mereka.

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# CHAPTER 1

# INTRODUCTION

This chapter will provide a brief overview of the entire project including the objective of the project, scope, problem statement and organization of the thesis.

## 1.1 Introduction

Since the earlier stages of using technology, the inventors and scientist were always trying to create method and develop techniques in order to achieve the most flexible and easiest ever life for humanity.

People always want to be in control. They need real time information whenever they need. With the advance of technology, mobile phone is no longer a luxuries item. It is easily available and possess by most population in our country.

For some people, they have to check their letter in the mail box every day. It is easier for them who live in their own home. But for students who live in hostel in their college or university, it will burden them where they need to go the Residential Office to check their mail. Plus, it is a burden for staff in their

*institution office to manage hundreds of letter per week because the staffs need to* record the incoming letter.

It will be more complicated if they are using the manual method in managing the mails. There are some universities which still using the old method in organizing student's mail including UMP itself.

To make this problem solved, Mail Notification System Using SMS (MANSUS) is built. MANSUS give a lot of advantages to staff such save more time and energy; the mail will organize in systematic way as well. By introducing a mobile solution for this service will bring a great benefit since everyone has a mobile phone or device nowadays. It will save their time and energy as they will be notified via SMS if they have new mail arrived.

## 1.2 Problem Statement

University Malaysia Pahang (UMP) is one of the universities in Malaysia that contains a huge number of students that live in the hostels. All the welfare and mails of the students are managed by Residential Office. Regarding the mails, there are some problems that Umps' student faced while they are trying to check the arrival of mail at the Residential Office since all the mails arrived were distributed to every Residential Office in UMP.

The idea to build up the system is come when UMP student always complaining about their difficulties to receive their mail earlier than it should be. When the mail arrived at Residence Office, it will take more time for staff to manage the mail because of the manual method that they used such as a pen and paper or log book to record the mail. So, students cannot predict when their mails are ready to be taken. If the mail is important to the student; they will face another problem because they cannot take their mail if the mail is not fully sorted by the staff. Furthermore, this will be more burdens to students who stay far away from Residence Office. In order to solve the problem, MANSUS is built.

## 1.3 Objectives

The objectives of the system developed are:

i). To study the effectiveness of the SMS Mail Notification System in UMP according to the users view point.

ii). To propose a new system architecture for UMP mail delivery system.

iii). To develop a prototype Mail Notification System Using SMS (MANSUS) for student in UMP and stand-alone system for Residential Colleges.

## 1.4 Scope

i). Mainly focus on mail management system in Residential College in UMP.

ii). Only two users can use this system:

- Students with the roughly amount five thousands students who will receive the notification.
- Staffs in Residential Office with roughly amount fifty persons who manage mails, send notification to students, and record the mails automatically.

iii). Two devices used in this project:

- Q24 GSM Modem as the modem that acts as messaging device which will send notification or message to students

- TopScan Text Reader that will function as a reader to read the name in front of the mail.

iv). Tools that used to build the interfaces and the database:

- Microsoft Visual Studio 2008 and Microsoft SQL Server 2005.

v). The method that will be used in the process of development of MANSUS is RAD methodology which is suitable for small project like MANSUS.

## 1.5 Thesis Organization

This thesis consists of six (6) chapters. Chapter 1 will discuss on the introduction of the system in which are problems are stated, objectives of developing the system is detected, the scope are being aimed and the solutions are find to solve the problems that stated. Chapter 2 will discuss the literature review that had been done while researching for the information regarding management of students' mail in UMP, chapter 3 will discuss on methodology used during the development of the system, chapter 4 will discuss on how the implementation occurs, chapter 5 will discuss on results and discussion about the Mail Notification System Using SMS(MANSUS) and the last chapter which is chapter 6 will discuss on conclusion of the system that had been researched for a long time. All of the thesis organization revolves the MANSUS.

# CHAPTER 2

# LITERATURE REVIEW

This chapter is briefly explains about the manual process of mail management in UMP and other existing system to be compare with. The other aspects that will be discussed include the specification of hardware and software that will be used to develop the system.

## 2.1 Introduction

It is commonplace nowadays that people associate texting or SMS with relaying messages. Be it business related messages, personal messages, or even educational related messages. For instance, a lecturer can give messages out to his/her students to cancel out the class or for a businessman who can texting their client to confirm an appointment or etc. In other word, SMS is a trend in communication areas because of the size of mobile phone itself which is handheld. These days, everyone has their hand phone. They bring their hand phone everywhere anywhere they go. Therefore, they will check their messages more regularly such as compared to emails or post mail. This is due to the fact that most of the students in UMP, they don't check their email as often as they

check their phone for messages. This is the reason the SMS method of conveying messages is chosen in Mail Notification System Using SMS (MANSUS).

MANSUS is a system which uses the technology of GSM Modem, text scanner, SMS and interaction between those devices to obtain data. Generally, the project will link to the database that connected with the device.

This chapter will briefly explain some similar project and studies, the solutions of the project related; overview on different approaches made by previous researchers and makes a comparison between my final year project and those similar projects. Besides that, the selection of selected tools that which is to be used for the development of MANSUS will be discussed in this chapter, the advantage, disadvantage and descriptions.

## 2.2 Current System in Mail Management in UMP

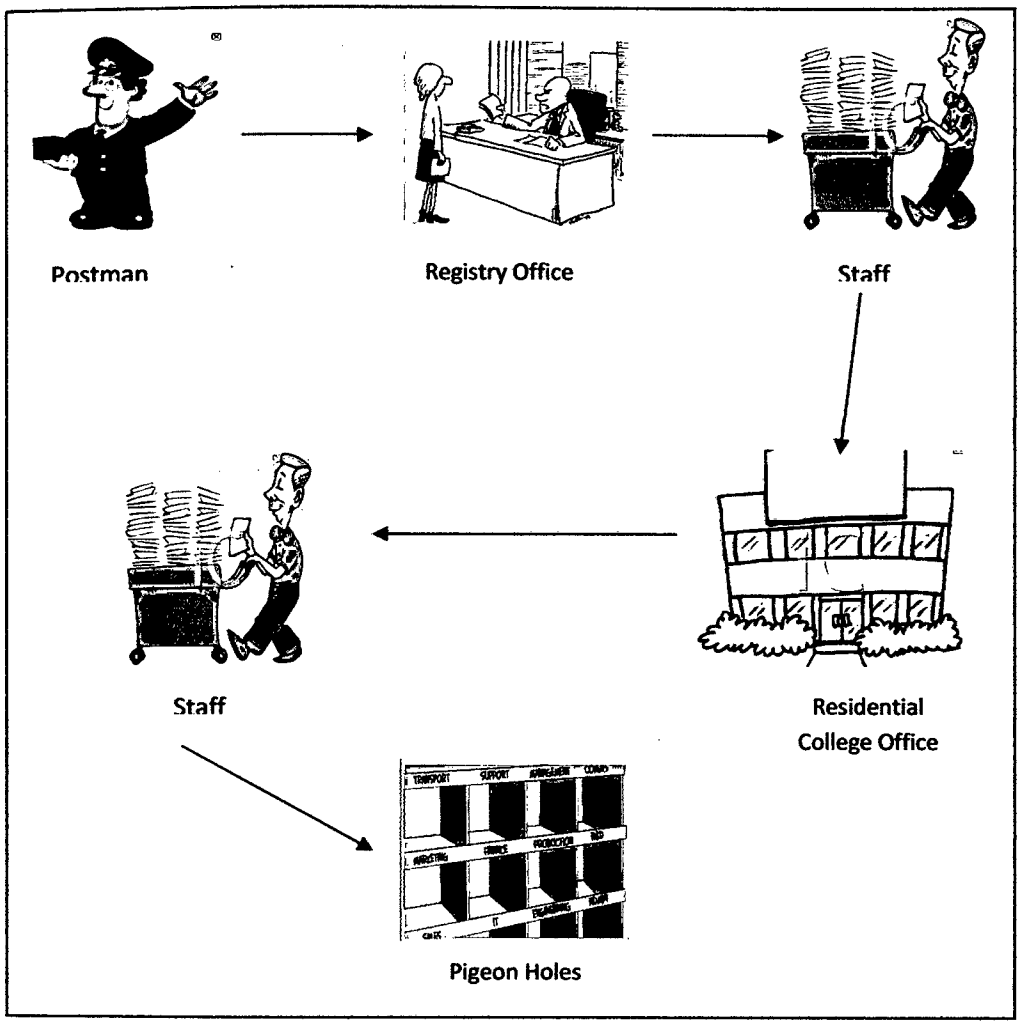


Figure 2.1: Flow Chart of current system in mail management in UMP

Figure 2.1 above shows the flow of the current system in mail management in UMP. In one big organization such as university, company or school, there must be a record of incoming and outgoing mail. It is important to keep the details of mails' status so that there will be no confusion or misunderstanding about the mail. Normally, the record is done manually by using paper and pen. This method is not suitable to keep the record safely because a paper may be lost or torn. Plus, it will take some time to track back the status of the mail.

Same things happened in University Malaysia Pahang (UMP). The postmen will send a bundle of mails and packages to Registry Office. Then the staff in the office will record the registered mail only in the log book. The other mails are then will be separated based on the address written on the mail or packages according to the student's block or residential college. Once again, at the Residential College Office, the staff will separate the unregistered mail in the pigeon holes provided at the office and the registered mail will be kept in other cabinet. The staffs have to record the registered mail again in their log book. After that, the staff will notify the student about their letter in student portal. When the student comes to the Office, they have to go through one by one searching for their name in the log book. Once they find their name in the log book, they can ask the staff at the counter to help them to take the letter in the cabinet. And for the unregistered mail, it will be separated into the other pigeon holes according to the receiver's first alphabet of their name. No notification is made to students for unregistered mail. The process will always be repeated as the mails come to UMP.

## 2.3 Studies of Existing System

### 2.3.1 UUM Mail Delivery System[1]

Based on preliminary research that has conducted before proposing title of this project, the major problem that UMP students face is the difficulty in knowing when their mails have arrived. Therefore, a research in other universities in Malaysia about their mail management system has been conducted and found that only in UUM, the system regarding Mail Notification System using Mobile Phone are already implemented.

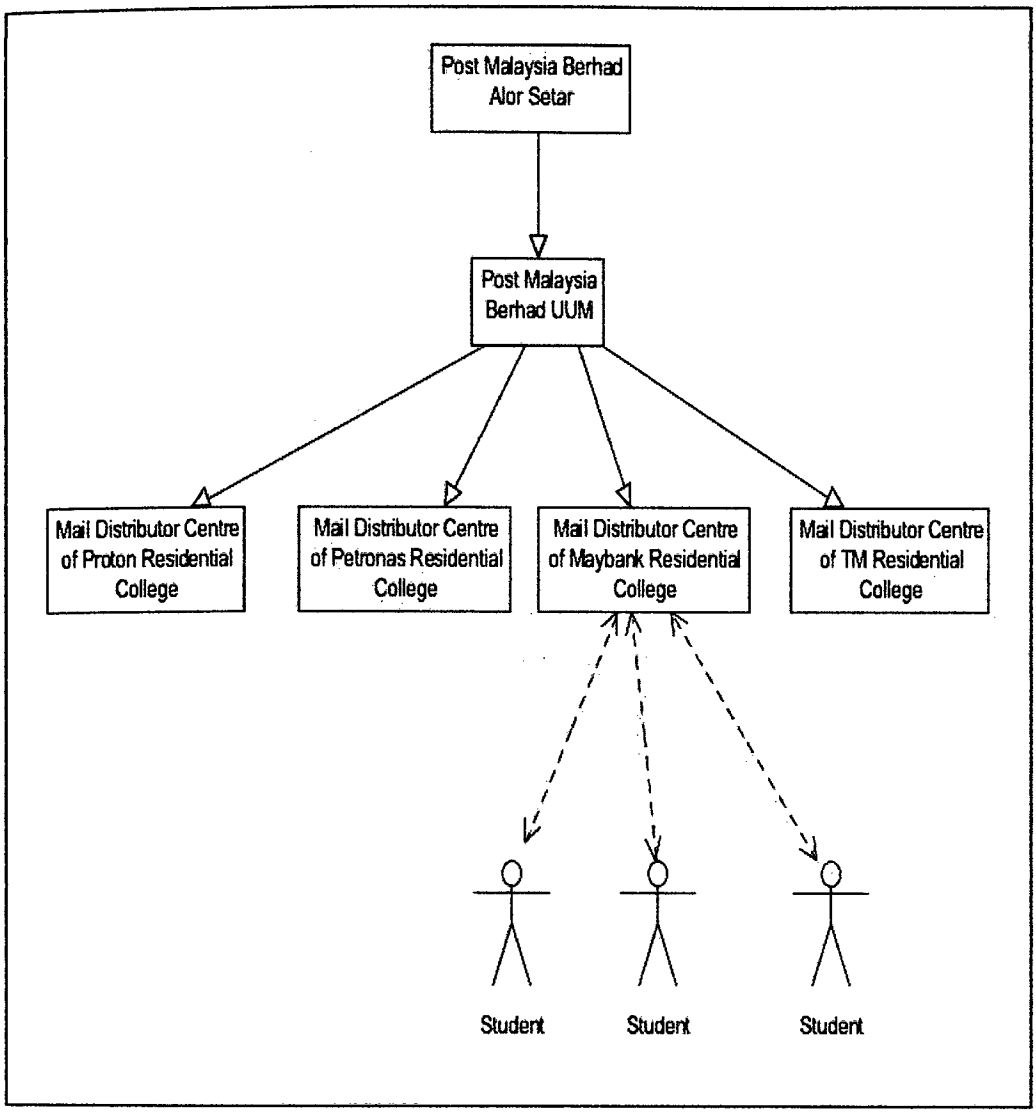


Figure 2.2: Mail Delivery System in UUM [1]

Figure 2.2 shows the flow of mail delivery system in UUM. UUM Mail Distribution Centre is an office where the system being implemented. The staff in the office will send the notification to students who already registered with the system. Once the students being notified, they can go to UUM Mail Distribution Centre to pick up their mail[1].

Based on this system, I can conclude that UUM Mail has a similarity and yet differences with MANSUS. The similarity is the function of SMS that used to inform the students when they received mails. The difference is the students in UUM need to register first with the system in order to obtain the service

by going to directly to Mail Distributor Centre and give all their information but for MANSUS, the information of students are already in the database since the students already register with BPA or 'Bahagian Pengurusan Akademi". Students also can update their information through student portal provided to UMP students.

### 2.3.2 Auto Notification Service for the Student Record Retrieval System Using Short Message Service (SMS), University of Malaya (UM) [2]

The Student Record Retrieval System (SRRS) has been introduced to overcome the problem which the websites have links which its content of information of a student such as examination results which is not sufficient to show or provide all the data required. The enhancement to the system aimed to allow the lecturer to pass more information to the student using auto notification of short message service depend on mobile phone for each student[2].

Figure 2.3 below shows the overall of SRRS system. Based on the diagram below, there are three users that connected with the system. All of the users have their own function. The system is built in order to upgrade the enhancement to the SRRS (Student Record retrieval System) by having an SMS automatically being sent to each student once a lecturer submits a marking to their records. This operation will ensure the student be informed of the new data arriving to his record so that he might go and check his new info or data specially a mark or an examination result.

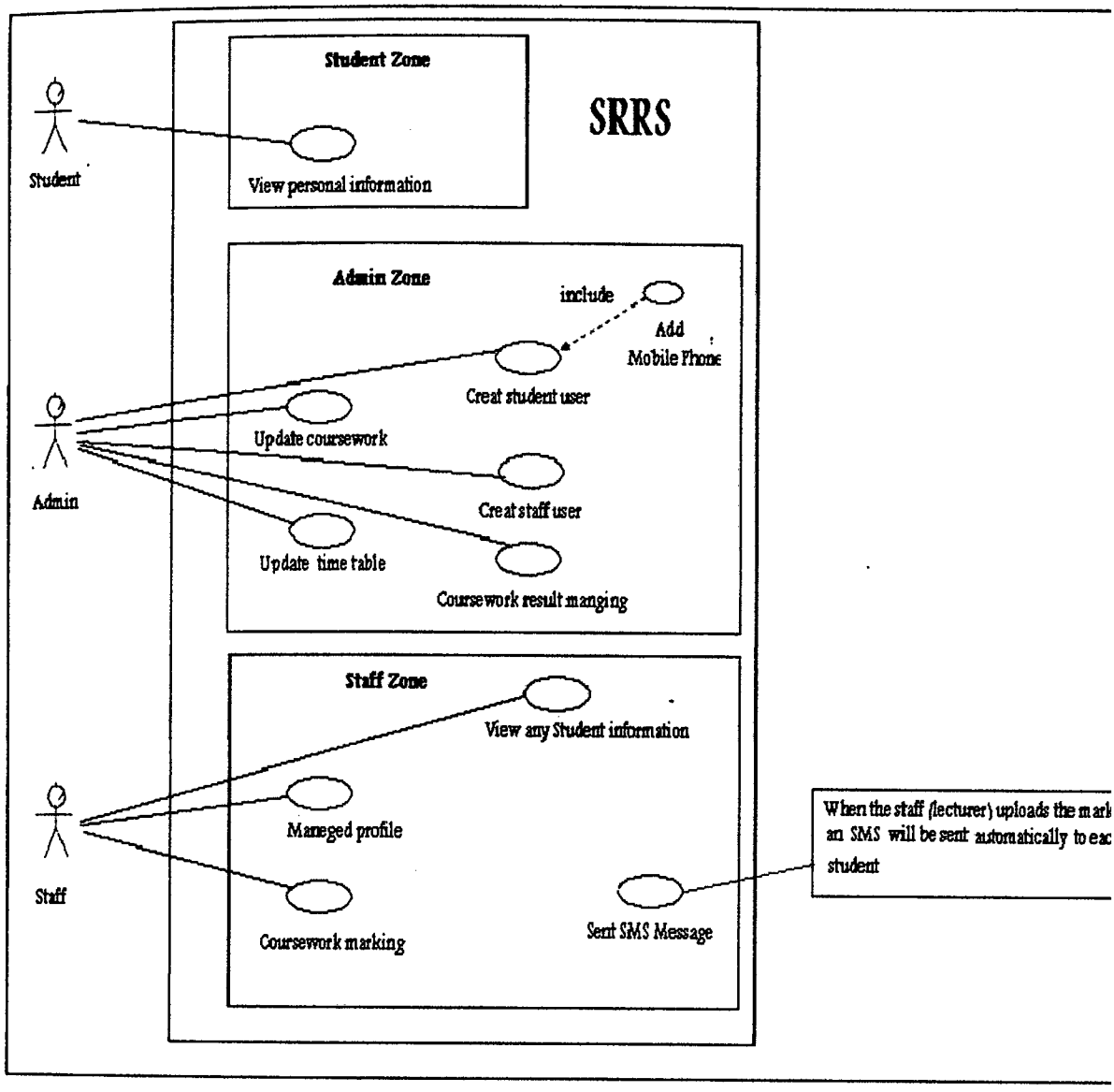


Figure 2.3: System Module of SRRS [2]

This system is reviewed because of the function using SMS to notify students about their mark. Even though the purpose is different, but the objective is the same which notify the student via SMS because of the alertness of mobile phone. This method is very useful because nowadays student become more alert with their phone compared to website or student portal.

### 2.3.3 Library SMS Notification Service, Monash University [3]

The purpose of the project is to enable SMS notification of library book dues and fines to student's mobile phones. The current system used by Monash Library is to send Email Alerts to students when a book is due, a book is ready to be picked up and notices of fines.

**Issues with this existing system**

- Time lag due to the delay in the student checking his Email
- Wastage of labour (transferring books from one campus to another) when a book available is not picked up by the student before it expires.

**Advantages**

- Reduces the time lag
- Student and the Library management benefit more as labor involved in book issues and book collection is reduced.

The working of the Library SMS Service can be explained by two phases and shown in Figure 2.4 below.

- Registration Process
- SMS Notification Process

**Registration Process [3]**

Registration process involves the process of students getting them registered to enable SMS notification. This registration is done by the following method:

- My Monash Portal - Using the My Monash, students can register their mobile phone number which will enable them to receive SMS notification.

**SMS Notification Process**

This involves the applications interaction with the library database/ flat files to obtain the list of dues and fines. The application then communicates with the My Monash database to get the mobile phone number for the corresponding student. The application repeats the above process for the list of students to produce a SMS mailing list. This SMS mailing list is a flat file. Using this flat file, the application sends SMS messages to the Library Patrons using Message Net. (SMS Service provider)

Message Net specializes in mobile business solutions. It provides a range of SMS, MMS and Premium SMS solutions. The Message Net Service currently used for the Library SMS Services is:

- Sending SMS Messages from the Library to the Message Net Gateway through secure HTTP connection (HTTPS).
- Once the message arrives at the message net gateway, the message is sent as a SMS to the intended recipient.

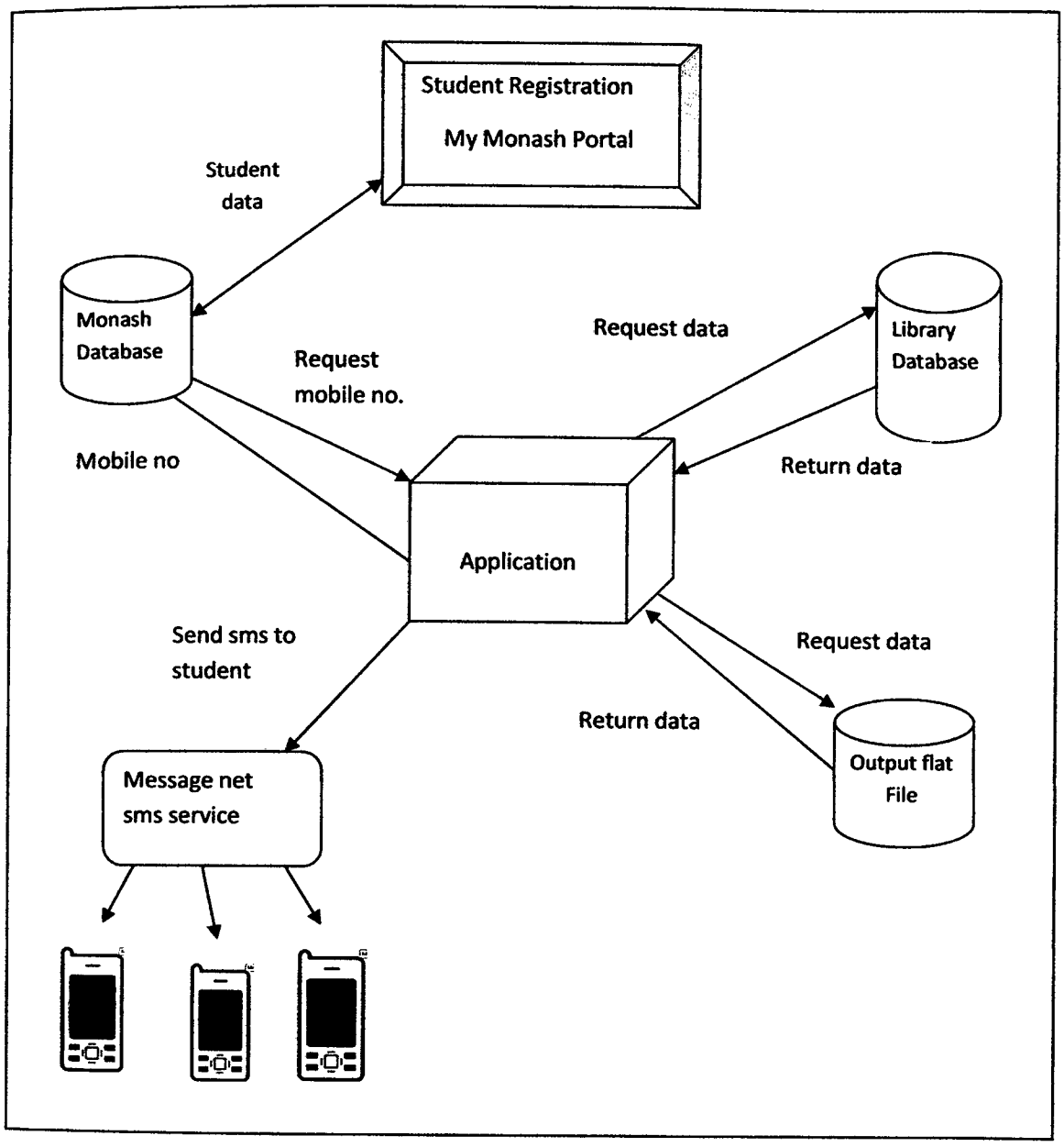


Figure 2.4: System Module of Library SMS Notification Service, Monash University[3]