KK3 STUDENTS MAILING SYSTEM

MIMI ILANI BINTI MISPUN

A report submitted in partial fulfillment
of the requirements for the award
of the degree of
Bachelor of Computer Science (Computer Systems & Networking)

Faculty of Computer System & Software Engineering
Universiti Malaysia Pahang

JUNE, 2012

ABSTRACT

Mail and parcel are two important things that involved students and staff in Universiti Malaysia Pahang (UMP). As mail and parcel received by students and staff every day, it is a challenge for *Pusat Mel* to handle the process of receiving and distributing it for a big number of recipients. Current method and process of recipients to take the parcel is they need to go to their respective hostel office and check either their parcel has arrived or not. If the parcel has arrived, they need to provide their matric card as proof that he/she is the correct recipient. The problem with current process is, student need to check by their self either their parcel has arrived or not. That would require a lot of their energy and time to check the parcel every day. Another problem arises when there is case of missing parcel while in the hand of hostel office. A proper management system is needed to solve those problems. The objectives of this system are: (1) To develop mailing system to assist the KK3 officer and students in the parcel or mail process, (2) To notify the students about their receiving parcel or mail through the email or SMS. By the use of this system, hostel office that manages parcel and mail distribution can handle both of it with effective and efficient. Students also no need to check their parcel and mail frequently as this system comes with email and SMS notification that will ease them to know either their parcel has arrived or not. The system has been developed and it shows both of the objectives can be achieved according to user testing that has been conducted before. Hence, this system should undergo future enhancement so that all hostel office in UMP can use this system for the ease of their management and students as well.

ABSTRAK

Mel dan bungkusan adalah dua benda penting yang melibatkan mMahasiswa dan staf di Universiti Malaysia Pahang (UMP). Memandangkan mel dan bungkusan diterima oleh Mahasiswa dan staf setiap hari, ia adalah satu cabaran untuk Pusat Mel dalam mengurus proses penerimaan dan pembahagian untuk jumlah penerima yang banyak. Cara dan proses sedia ada bagi penerima untuk mengambil bungkusan mereka adalah dengan menyemak sendiri sama ada bungkusan tersebut telah sampai ataupun tidak. Jika bungkusan tersebut telah sampai, mereka perlu memberikan kad matrik sebagai bukti yang mereka adalah penerima yang betul. Masalah untuk proses sedia ada adalah, Mahasiswa perlu menyemak sendiri sama ada bungkusan tersebut telah sampai ataupun tidak. Ia akan memakan banyak masa dan tenaga setiap hari. Selain itu, terdapat juag kes dimana meld an bungkusan yang berada di tangan pihak pejabat asrama hilang. Objektif system ini ialah: (1) Untuk membangunkan system mel yang dapat membantu pegawai KK3 dan Mahasiswa dalam proses mel atau bungkusan, (2) Untuk memberitahu Mahasiswa bahawa bungkusan mereka telah sampai melalui email ataupun SMS. Dengan menggunakan sistem ini, pejabat kolej kediaman yang menguruskan mel dan bungkusan dapat menguruskannya dengan lebih efektif dan efisien. Mahasiswa juga tidak perlu untuk menyemak bungkusan mereka selalu memandangkan sistem ini akan menghantar pesanan ringkas melalui email ataupun SMS. Sistem ini telah dibangunkan dan ia menunjukkan bahawa objektif sistem ini boleh dicapai berdasarkan pengujian sistem yang dilakukan oleh pengguna sistem sendiri. Oleh itu, sistem ini harus melalui proses pembaik-pulihan pada masa akan dating agar sistem ini dapat diguna-pakai oleh suma pejabat kolej kediaman di UMP untuk kemudahan pengurusan dan juga Mahasiswa sendiri.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

UMP	Universiti Malaysia Pahang
KUKTEM	Kolej Universiti Kejuruteraan dan Teknologi Malaysia
KK3	Kolej Kediaman 3
SMS	Short Message Service
SDLC	Software Development Life Cycle
PSM	Projek Sarjana Muda

CHAPTER 1

INTRODUCTION

1.1 Background

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. In, 2007, UMP consisted of five faculties with a total of 3550 students. The number of students is growing rapidly as new faculties are being introduced along with an increase in the programs offered. The increase in number of students as well as staff posts a challenge for the university mailing process.

In UMP, *Pusat Mel* is the central mail storage for all staff and students and it is responsible in managing the mailing system. In general, *Pusat Mel* will receive the mail or parcel from the courier services. The process continues by separating the mail or parcel according to department or faculty for staff and *Kolej Kediaman* for students. In this study, focus given to the *Kolej Kediaman 3* (KK3) because all the *Kolej Kediaman* in UMP experiencing the same problem in the mail management system. In addition, by implementing this system in KK3, it can also be adopted by other *Kolej Kediaman* in mailing process.

One of the components managed by KK3 is mail and parcel of the students, where it is responsible to allocate and distributed it. With the rapid growth in student number, it has been a problem for the KK3 to manage the mail and parcel system. Not having any mailing information system made handling the mail or parcel problematic for staff and student. Currently student had to check their mail or parcel regularly at the KK3 office and this

create a hassle for both parties. For example, student often check for their mail or parcel during staff break hour.

Therefore, this motivates us to develop a KK3 Students Mailing System, which using stand alone system that allows *Pusat Mel* to record data of receiver (i.e. student) electronically. The system will then send an email or SMS as notification to receiver.

1.2 Problem statement

As mention previously, the whole mailing or parcel process (*Pusat Mail, Kolej Kediaman* etc) is managed manually. This caused a problem and time consuming in manipulating the data. For department or faculty, they need to manually re-check the receiver of mail or parcel (received from *Pusat Mel*). An incomplete detail of receiver, require them to search the information through e-community. As for *Kolej Kediaman*, the students have to regularly check whether they have any mail or parcel at their respective *Kolej Kediaman*.

Currently, *Kolej Kediaman* manages the mail or parcel received manually and this creates a problem of missing or misplace. In addition, there is no notification system to notify students of their mail or parcel. Hence, it is more effective and efficient to have a mail management system that record mail or parcel as well as notification mechanism to alert students of their mail or parcel.

1.3 Objectives

There are two objectives to be achieved on this project:

i. To develop mailing system to assist the KK3 officer and students in the parcel or mail process.
ii. To notify the students about their receiving parcel or mail through the email and SMS.

1.4 Scopes of Study

There are some restrictions in this project:

i. The system focus on mail management system at *Kolej Kediaman 3 (KK3), Universiti Malaysia Pahang (UMP).*
ii. The system records the details of parcel which are tracking number, post name, post item etc.
iii. The system sends an email or SMS to notify the user.
iv. The system allows staff to check parcel or mail status.
v. The target users of this system are the staff and student of KK3.

1.5 Thesis Organization

This thesis consists of 6 chapters ranging from Chapter 1 until Chapter 6. This chapter presents the background, motivation, objectives, scope of study and research contribution. The remainder of this thesis is organized in the following way:

Chapter 2 describes the mailing process of the current system and reviews the previous research works that was conducted by other researches. All the relevant technical paper, journals, and books taken from those researches will be discussed in detail.

Chapter 3 presents methodology to develop this system. The content consists of the approach and framework for the project that used in this system.

Chapter 4 presents the implementation of process that involved during development of this system.

Chapter 5 presents the result obtained from the implementation phase. The constraints of system also will be discussed in this chapter.

Chapter 6 presents the overall conclusions of the work presented in this study whether it can achieve the goal of this project.

1.6 Proposed Research Contribution

In general, this project focuses on mail management system in KK3 office. This system contributes to the three parties which is KK3 office, KK3 students and email system.

a) Contribution to system owner (KK3 office).
   i. Mail or parcel registration: The system allows the system owner to register incoming mail or parcel. This allow for easy accessibility to manage the overall mailing system.
   ii. Mail or parcel allocation: The system allows the system owner to specify the items location (e.g.: shelf) for easy access.
   iii. Mail notification: The system will send a notification to students stating that their document or parcel has arrived. This help student from going to the KK3 office regularly to check their mail or parcel.

b) Contribution to KK3 students.

   i. Mail or parcel checking: The system will notify the user to inform that their document or parcel has reached at KK3 office. Additionally, it makes the services more efficient than the previous.

c) Contribution to notification system.

   i. Keep messages from getting lost and the frustration of the customer waiting for a reply.

CHAPTER 2

LITERATURE REVIEW

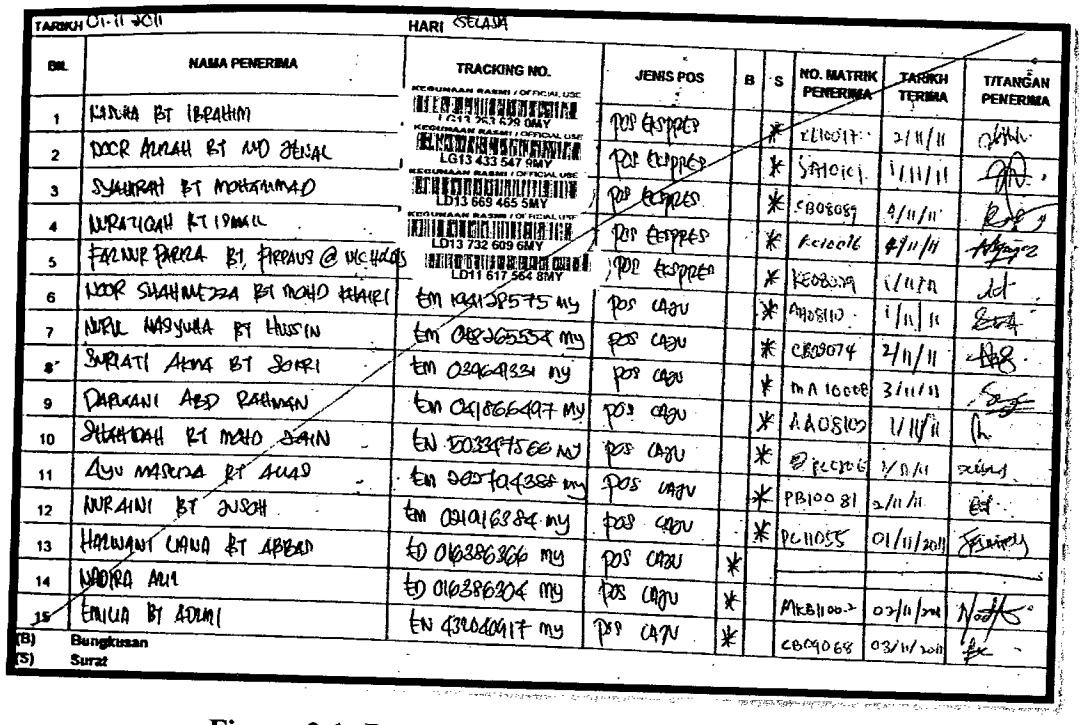
2.1 Introduction

This chapter discuss on the literature review, research about the system that has similar in functionality with the mailing system. In section 2.2 we describe about the current implementation of mailing system by UMP, section 2.3 describe about notification method, section 2.4 describes about the comparison between notification method and section 2.5 will conclude about the whole section in chapter 2.

2.2 Current Implementation of Mailing System

Based on study of current system in Universiti Malaysia Pahang (UMP), the whole mail and parcel process is managed manually. Courier service will sent mail or parcel to the center called *Pusat Mel* UMP. There are two types of mail or parcel that is registered and non-registered. During this phase, staff at *Pusat Mel* only receives tracking number of each mail or parcel which called registered mail. Then, they will separate it by group which is staff and student based on details that written in the cover. Incomplete details of receiver, staff will search the information through e-community. For unknown receiver, they will just keep it for certain period time. Therefore, mail or parcels will be returned to the courier service if the recipient does not match with the community in UMP. The processes continue by separating the mail or parcel according to department of faculty for staff and *Kolej Kediaman* for student.

In *Kolej Kediaman 3 (KK3)*, for registered mail, staff will re-check the receiver o mail or parcel and record it into a piece of paper if the receiver is a resident of KK3, if no staff will return back the mail or parcel to *Pusat Mel*. Otherwise, non-registered mail wil be allocated in the shelf. In this phase, record shown as Figure



TARIKH 01-11-2011 HARI SELASA

BIL	NAMA PENERIMA	TRACKING NO.	JENIS POS	B	S	NO. MATRIK PENERIMA	TARIKH TERIMA	TTANGAN PENERIMA
1	NADIRA BT IBRAHIM	LG13 263 699 0MY	POS EKSPRES		*	[illegible]	2/11/11	[illegible]
2	NOOR AINAH BT MD JELAL	LG13 433 547 9MY	POS EKSPRES		*	SA10[illegible]	1/11/11	[illegible]
3	SYAHIRAH BT MOHAMMAD	LD13 669 465 5MY	POS EKSPRES		*	[illegible]	4/11/11	[illegible]
4	NURATIQAH BT ISMAIL	LD13 732 609 6MY	POS EKSPRES		*	[illegible]	4/11/11	[illegible]
5	FARINA PARERA BT PERRAUS @ NICHOLAS	LD11 617 564 8MY	POS EKSPRES		*	[illegible]	[illegible]	[illegible]
6	NOOR SHAHNEZZA BT MOHD KHAIRI	EM [illegible] MY	POS LAJU		*	[illegible]	[illegible]	[illegible]
7	NURUL NADYUHA BT HUSSIN	EM [illegible] MY	POS LAJU		*	[illegible]	[illegible]	[illegible]
8	SURATI AKMA BT SOKRI	EM [illegible] MY	POS LAJU		*	[illegible]	2/11/11	[illegible]
9	DARWANI ABD RAHMAN	EM [illegible] MY	POS LAJU		*	[illegible]	3/11/11	[illegible]
10	SITI NORAH BT MOHD ZAIN	EM [illegible] MY	POS LAJU		*	[illegible]	[illegible]	[illegible]
11	AYU MARINA BT AWAD	EM [illegible] MY	POS LAJU		*	[illegible]	[illegible]	[illegible]
12	NURAINI BT JUSOH	EM [illegible] MY	POS LAJU		*	PB10081	2/11/11	[illegible]
13	HANANI LAILA BT ABBAS	ED [illegible] MY	POS LAJU		*	[illegible]	01/11/2011	[illegible]
14	NADRA ALI	ED [illegible] MY	POS LAJU	*				
15	EMILIA BT ADLI	EN [illegible] MY	POS LAJU	*		[illegible]	[illegible]	[illegible]
						[illegible]	03/11/2011	[illegible]

(B) Bungkusan
(S) Surat

Figure 2.1: Record of parcel and mail

Because of an incomplete data of receiver (e.g. student) such as their name, staff needs to search the receiver based on phone number. Other than that, they will just record it and wait for collection. If there is no claim, the mail or parcel will be throwing away. After finished the record phase, mail or parcel will be allocated to the shelf based on type of courier service used. Next, student had to check their mail or parcel at KK3 office. In this phase, it creates a hassle for staff at KK3 and student. For an example, student often check for their mail or parcel during staff break hours. Other than that, because there is no notification, student needs to check regularly. The flow process of the current system was shown in the Figure 2.2.

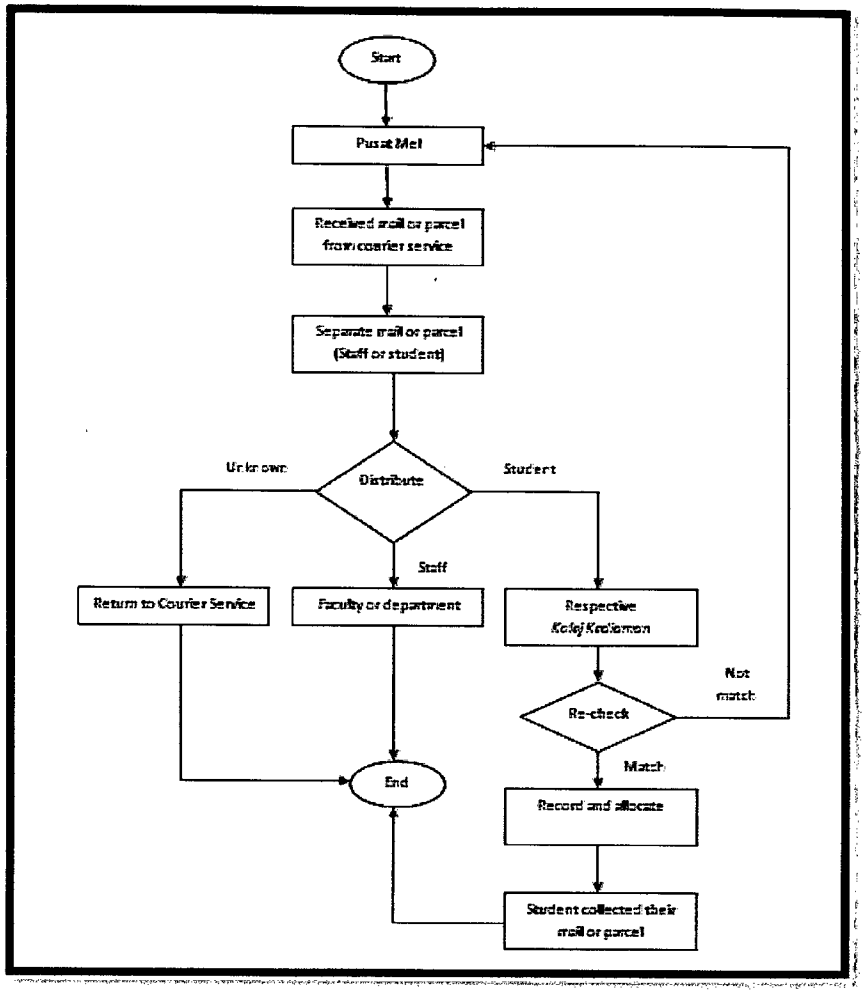


Figure 2.2: Flow process of current mailing system.

In conclusion, there are some weaknesses that have been found about the current mailing system. As mention previously, the whole mailing or parcel process (*Pusat Mail, Kolej Kediaman* etc) is managed manually. This caused a problem and time consuming in manipulating the data. For staff at KK3, they need to manually re-check the receiver of mail or parcel (received from *Pusat Mel*). An incomplete detail of receiver, require them to search the information through e-community. Other than that, because there is no notification of mail or parcel, the students have to regularly check whether they have any mail or parcel at KK3 office.

2.3 Notification

Notifications also known as alerts and reminders. Nowadays, the most popular method used to notify the user is by sending an email or message. Reminders are either sent to your email account or to certain people directly. These kinds of notification have pros and cons in term of usage, effectiveness and cost. The next sub-topics will discuss about the most notification method using nowadays; email and message.

2.3.1 Email as notification

Email is a technology that includes passing and sending information from one place to another, using a computer and the Internet. It has proven beneficial in our personal as well as professional life. There are many different kinds of application that using email as notification method to remind user which is MultiMail Notifier 3, Facebook, Jobstreet and etc.

Depends on situation, email is suitable for business area and it is design for busy customer service, help desk and sales department. Here are key benefits about using the email as notification;

i. Eliminate manual processing of correspondence
ii. Improve response time
iii. Raise customer satisfaction by acknowledging receipt and connecting them quickly to the right person
iv. Ensure that responses to customers are accurate and consistent
v. Keep messages from getting lost and customers from getting frustrated while waiting for your replies
vi. Email can distribute information quickly to many people for the time it takes to email one person.

Email communication is certainly known for the rapid information transfer it provides. This speed enables businesses to operate at a faster pace and in an efficient manner. In larger companies, proper communication is very difficult to achieve. Email is definitely the correct resolution for this purpose. Corporate are able to receive accurate information in no time, as a result they can take well-informed decisions. Emails are generally used to let all company employees know about an occasion, announcement, event, or any such corporate information.

With motto 'Reply faster while lowering operating cost', cost savings is one of the most important advantages. The costs involved in maintaining an email system are generally very low. Small companies may use free online email services without spending on the expenses for incorporating separate email systems. They just need to pay the regular Internet connection charges. As companies mainly use emails, the expenses related to postage and telephones are low.

In term of security, email is evidently the most secure method of communication when compared to letters and faxes. If letters or paper documents fall in the wrong hands, they may be misused which might prove harmful to the business. If faxes containing confidential information are left unattended on the fax machine, they may also be used in an adverse manner. Emails ensure the security of information, records, and details.

2.3.2 Short Message Service as notification

Abbreviated as *SMS*, the transmission of short text messages to and from a mobile phone, fax machine and/or IP address. Messages must be no longer than 160 alpha-numeric characters and contain no images or graphics. Once a message is sent, it is received by a Short Message Service Center (SMSC), which must then get it to the appropriate mobile device.

Unlike an e-mail, an SMS is much more likely to be read by a person at any one time, since the majority of people have their mobile phones at arm's reach 24 hours a day. Of course the same also applies to a phone call. Example of application nowadays that using SMS as platform to interact with user is online banking and sending verification code for some account created like Google account.

By using SMS, the first key benefit is it is quick. SMS/text messages are delivered almost instantly. As most recipients carry their mobile phones on them all day, they're likely to read the message soon after receiving it. It's especially useful when sending out urgent alerts or messages containing time-sensitive information, e.g. *Reminder: Today is the last date to apply. As of tomorrow, late penalties will apply.*

With SMS sends you're virtually guaranteed that your recipients will read your message. Perhaps it's the intimacy of holding a mobile phone in your hand, the knowledge that you don't hand out your number to just anyone, or simply the fact that we know it only takes us a few seconds to skim through a text message. Whatever it is, rarely will you come across a text recipient who just hits delete without reading the message.

Other than that, recipients are interested in what you have to say. Best practice SMS/text marketing requires that you only send your SMS's to recipients who have agreed to receive mobile communications from you. Anyone who has opted in is clearly interested in what you have to say and you are therefore more likely to persuade them to make a purchase through your marketing SMS's.

2.4 Comparison between the usage of Email and SMS as notification

Table 2.1: Comparison of email and SMS

	Email	SMS
Immediate Attention	Users usually discard the messages that are sent for marketing purposes.	In most cases the recipients will read those messages.
Immediate Response	Require user to access for internet connection before take an action.	Easier for recipients to take immediate action since the recipients are already present in that area.
Cost	The expenses incurred in using an email service are less. However, it also depends on whether you have an Internet connection at home.	High cost which the user is charged a certain price.
Character Limitless	There are no limit characters for email and can add the JPEG pictures.	One SMS contains only the 160 characteristics.
Security	Personal (Cannot read any one without your email id and password)	Can read by anyone.
Data Storage	The providers of email service offer enough space for data storage. Also, the process of sorting and arranging mails as per the subject, date, etc. is made quite easy for users.	Depends on memory phone storage.

2.5 Conclusion

This chapter has been discussing about the current implementation of mailing system in UMP and method that usually used to send notification. Based on the finding, it shows that the both two method has similar characteristics in term of usage, cost and efficiently. Next chapter will discuss about the methodology that related to this chapter in term of developing phase.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter will discuss about software process and methodology that will be used or implemented in KK3 Mailing System. Methodologies are multiple step approach development that will guide work of creating an application or product. Waterfall model is chosen to be the guideline in implementation of KK3 Mailing System. This is because Waterfall model is one of System Development Life Cycle (SDLC) that becomes a practical and realistic method for faster and more efficient software development and suitable with the system itself. The details of every phase will be described in the next parts. Besides, this chapter also describes the software, hardware and user requirement for development process.

3.2 Waterfall Model

The waterfall model is the oldest SDLC based model created where the output of each stage of the process explicitly becomes the input of the next stage. This model includes separate phase, that is planning or analysis, requirements specification, design, implementation, testing and maintenance. Figure 3.1 shows the phase of waterfall model.

Waterfall model is very simple to understand and use. Each phase must be completed in its entirety before the next phase can begin. At the end of each phase, a