

PERPUSTAKAAN UMP



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ASN ACADEMIC SOCIAL NETWORK FOR  
UMP

YEOH BOON TIAM

BACHELOR OF COMPUTER SCIENCE  
(SOFTWARE ENGINEERING WITH HONOURS)

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## ABSTRACT

The purpose of this project was to develop an academic social network for UMP to facilitate the communication between student and lecturer and as an aid tool to improve the academic performance of students. The agile methodology was used to develop this project as it enables small number of developer to develop a project within short period of time and it flexible in changing requirements to cope with the demand of requirement changes. The requirements of project were obtained from the UMP students and lecturers through online survey form. Based on analysis of the survey result, this project was included 2 parts which are user and admin part. User part was allowed user to post status, video, picture, and document, send email, create group, and search function. For admin part, it was allowed to monitoring the user activities who can delete all stuffs shared and uploaded by users when inappropriate contents are found and responsible to create user account to prevent occurrence of fake account. Since, this project involved large amount of users so this project was designed follow and unfollow button to retrieve user interested post. This project was completed unit testing, integration testing, system testing and community acceptance testing. According to community acceptance testing, all users involved in the testing were accepted this project. This project was received positive feedback from users and it is possible to expand to other universities in the future. Based on this project, it shown that it has the potential for commercialize and collaborative.

## ABSTRAK

Tujuan projek ini adalah untuk membangunkan satu rangkaian sosial akademik kepada UMP. Rangkaian ini bertujuan untuk memudahkan komunikasi antara pelajar dan pensyarah. Rangkaian sosial akademik ini boleh sebagai alat bantuan untuk meningkatkan prestasi akademik pelajar-pelajar. Metodologi tangkas telah digunakan untuk membangunkan projek ini kerana metodologi ini membolehkan bilangan pengguna yang kecil untuk membangunkan projek dalam masa yang singkat dan fleksibel dalam mengubah keperluan bagi mengatasi masalah permintaan perubahan keperluan. Kajian selidik secara online telah dijalankan terhadap para pelajar and pensyarah di UMP untuk mengetahui elemen yang perlu ditekankan dalam projek ini. Berdasarkan kajian selidik ini, Projek ini dibahagikan kepada 2 komponen iaitu pengguna dan admin. Pengguna boleh memuat naik status, video, gambar, maklumat, menghantar email, membuat group dan juga menggunakan applikasi pencarian. Manakala, admin dalam sistem ini bertindak untuk mengawasi aktiviti pengguna dalam menadamkan segala maklumat dalam laman ini sekiranya maklumat yang disampaikan didapati kurang sesuai dipaparkan kepada penggguna lain atau mengawasi akuan palsu dalam rangkaian ini. Memandangkan projek ini melibatkan banyak pengguna jadi fungsi “follow” dan “unfollow” diwujudkan untuk mengetahui kadar minat pengguna terhadap sesuatu status dalam rangkaian ini. Beberapa testing telah dijalankan untuk menilai projek rangkaian ini, antaranya ialah unit testing, integration testing, system testing and community acceptance testing. Daripada community acceptance testing didapati bahawa semua pengguna rangkaian ini memberikan respon yang positif terhadap projek ini. Ini bermakna projek telah berjaya dan projek ini boleh diperluaskan ke universiti lain untuk memanfaatkan pelajar universiti lain pada masa hadapan. Berdasarkan semua testing yang dijalankan didapati bahawa idea projek rangkaian ini berpotensi untuk dikomersialkan dengan adanya collaborasi daripada firma teknologi maklumat pada masa akan datang.

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### LIST OF ABBREVIATION

ABBREVIATION	MEANNING
UMP	University Malaysia Pahang
Ump-ians	UMP lecturers and students
SMS	Short Message Services
FSKKP	Fakulti Sistem Komputer & Kejuruteraan Perisian
CNN	Cable News Network
U.S.	United State
PRISM	Planning Tool for Resource Integration, Synchronization, and Management
IOS	Mobile operating system developed by Apple Inc.
ICT	Information and Communication Technology
IM	Instant Messaging
HTML	Hypertext Mark-up Language
CSS	Cascading Style Sheets
JSON	JavaScript Object Notation
RDBMS	Relational database management system
ODBC	Open Database Connectivity
JDBC	Java Database Connectivity
XP	Extreme Programming
e-comms	E-commerce system
PSM	Projek Sarjana Muda (Final year project)

## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

Since the information technology is rapidly growing, more and more people tend to use social network to communicate with others as it is faster and more convenient. Based on the statistic had been done, over millions of users are using social network site such as Facebook, YouTube, Google Plus, Edmodo, Moodle, Schoology, Twitter, Instagram, and LinkedIn. All of these social network sites are free of charge which means users can use it for free as send message to others. Therefore, more and more people use the social network to communicate instead of mobile phone SMS. Based on the statistic on 31 December 2013, Facebook became the largest social network which has reached 1.23 billion of monthly active users [1]. Most of users use the social network to send message, post comment, share things, recognize the new friends, and keep contact with the friends (old friends, existing friends and new friends).

University Malaysia Pahang (UMP) is a local university in Malaysia which established in 2002. From the beginning, UMP lecturers and students are using mobile phone send text message to communicate with each other after classes. However, UMP students and lecturers now are familiar to use social network to communicate with each other such as Facebook, Edmodo, Schoology, and Moodle which are free, faster and more convenient.

Facebook is launched in 2004 and it was founded by Mark Zuckerberg with his friends in Harvard University which are Chris Hughes, Dustin Moskovitz, Eduardo Saverin and Andrew McCollum [2]. Initially, Facebook was created and available for



Harvard students only. However, it slowly expanded to other colleges in Boston area such as Ivy League and following expanded to most universities in United States and Canada [3]. On September 2006, it was opened and available to everyone who is 13 years old or above and has a valid email address [3]. It mostly use to create groups and pages, post comment and status, share video and pictures, schedule friend's birthdays, send message via message box, and create and takes polls. Many of UMP lecturers have used Facebook to create group and invite all their relevant students to join the group in order to maintain the communication between them. Even UMP students also used Facebook to connect to other UMP-ians or friends. Besides of that, UMP has its own official Facebook account group for all people to join in order to spread the latest news or announcements about the UMP.

The co-founders of Edmodo were Nic Borg and Jeff O'Hara. Both of them launched Edmodo in year 2008 and Edmodo is created for parents, schools, teachers, and students [4]. Currently, it has more than 32 million teachers and students using it. It can be used for discussion purpose and post video, share assignments and grades, post comment, schedule appointments, create and take polls [5]. Normally, teachers use this platform to communicate with students for specific classes and assign works for them. Students use this platform to communicate with their classmates and teachers in order to assist them in learning. Then, the parents can use Edmodo to track the communication between their children and teachers and monitor their children works submission and grades. Minor of UMP lecturers are using Edmodo instead of Facebook to communicate with their specific class students such as Counselling subject.

The Schoology was founded by the Ryan Hwang, Tim Trinidad, Jeremy Friedman, and Bill Kindler [6]. They founded Schoology in the 2007-2008 school years. It is being called as either the learning management system or course management system [7]. It has been developed to have an enterprise version which provided more features. The Schoology function just like Facebook, it provides the functions as enable users to post comment, share video and picture, upload document (homework), online gradebooks, test and quiz and attendance record. Recently, over millions of users are using Schoology platform across more than 18000 schools [8]. UMP lecturers also have using Schoology to communicate with their students for specific classes in order to

assist them in teaching and also their students in learning but only consists of little number of lecturers are using Schoology compared to UMP Facebook lecturer users. For instance, the UMP foreign languages courses as German beginning level and German intermediate level are using Schoology to assist in teaching.

The Moodle is free software for e-learning platform known as Learning Management System and also can be called as a social network for the users. Martin Dougiamas was the one who originally developed Moodle for the purpose of helping educator to create online courses [9]. On August 2002, Martin Daougiamas released the 1st version of Moodle to public. UMP has its own Moodles such as FSKKP E-Learning Portal for all UMP computer science students. The UMP Moodle is used for the UMP lecturers to create course group for their specific classes in order to help them in teaching and also students in learning. It can allow lecturers to upload their notes and slides, give the announcements, create online quizzes, and assign works, assignments, and lab sheets. Then, students can download the slides and notes, complete the online quizzes and submit their works as well. However, UMP Moodle cannot access by all UMP-ians, only specific faculty lecturers and students can do so.

Currently, uses of social network assist in teaching and studying are the trend in the world. However, using Facebook, Edmodo, Schoology, and Moodle to assist in academic performance have some disadvantages. Therefore, this project is going to develop a new academic social network called ASN academic social network to assist in education and the project is scoped in UMP only. This ASN academic social network includes all UMP lecturers and students. When the students and lecturers join UMP, the ASN academic social network admin will automatic create accounts for them just like they have the UMP e-comm system account when they join UMP. ASN academic social network is a platform for UMP-ians to communicate with each other, share ideas, thoughts and opinions, post comments, create group (for specific subject, event, project and assignment. This can make a strong bond between students and lecturers as they can communicate (ask and answer for questions) with each other even class ended. It also can connect and make a good relationship among students, among lecturers and between students and lecturers. The ASN academic social network can enlarge the

interpersonal communication of all UMP-ians and all are connected like a big family taken care with each other.

## 1.2 Problem Statement

The 4 social networks that UMP-ians mostly use in order to assist in academic performance are Facebook, Edmodo, Schoology and UMP Moodle. Use of these social networks can assist UMP-ians in education especially enhance the communications between them, but it has some disadvantage for their users as well which are:

### Facebook

i. Distract students in study

Facebook can assist students in study but at the same time it can distract students for study as well. This is because students are addicted to play Facebook game such as Candy Crush, Tetris, and Diamond Dash caused students wasted time on play game and less time on study. Based on the news from MailOnline written by Nic Fleming on 7 Sept 2010, the academic results of Facebook addicted users became worse were 20% more than the non-Facebook addicted users [10].

ii. User personal data has been stolen

Facebook is a U.S. company, U.S. government has launched a program called PRISM which is used to hack the server of Microsoft, Yahoo, Google, Facebook, PalTalk, AOL, Skype, YouTube and Apple to steal their user data and information without their agreement, or approval [11]. This has been admitted by Director of National Intelligence James Clapper [11]. So, people who are using Facebook will disclose their personal information to others without the agreement and the privacy of the users are broken.

iii. Not safe - Fake account

Fake account means that a person is using other people identity information or using fake personal information in Facebook to communicate with other users. According to CNN news written by Heather Kelly on 3 August 2012, 83 million Facebook accounts were fakes [12]. Many of these fake accounts are used for

dupe. Most of the victims are the students who are easy to be cheat. Facebook has it risks when using it as it may expose students to be friends with the unknown people who are using fake accounts to cheat them.

iv. **Blocked for access**

Facebook is owned by U.S. company and its service is free to public. If one day, Facebook contents are conflict with our country or country policy, it may be blocked. If this happened, all the information, data, files and etc. in Facebook will be unavailable. If we have important files or documents were uploaded in Facebook then we are not able to access anymore. For example, Saudi Arabia has been blocked Facebook for a period of time and China was blocked Facebook all the times [13].

### **Edmodo, and Schoology**

i. **Fake account**

Both sites allow a same user to create more than one account. They do not prevent users to key in the false information to act as other identity and create a new account. The users may use the fake account to conduct some illegal activities such as cheat people.

ii. **Students cannot create group**

The student users cannot create a small group for their group project and assignment discussion or online group meeting purpose. Normally they will conduct such activities via other social network which is Facebook.

### **UMP Moodle**

i. **Students cannot create group**

The UMP student users cannot create a small group for their group project and assignment discussion or online group meeting purpose. Normally they will conduct these activities via other social network such as Facebook or doing face to face meeting or discussion.

- ii. Student cannot post comment, and share video, picture and document in the group

The UMP student users cannot post a comment in any course group to ask questions when they have problem in study. They also cannot share video, picture and document to others to helping each other in study.

- iii. Not all UMP-ians can access

UMP Moodle as FSKKP E-Learning Portal only can access by computer science faculty lecturers and students which mean other faculty students and lecturers cannot access it. This restricted the communication across the faculties and the UMP Moodle cannot benefit to all UMP-ians.

The ASN academic social netowrk does not have all of these disadvantages mentioned above. Hence, ASN academic social network is needed for all UMP-ians in order to keep them safe, protect them, provide a platform for them to communicate with each other, assist them in learning and teaching, and build a strong relationship between them.

### 1.3 Objective

The objectives of this project are:

1. To create an academic social network scoped in UMP only
  - To connect UMP lecturers, and students
  - Facilitate the communication between student and lecturer.
  - Lecturers easy to spread the news of the course to students and have more time to solve the student problems.
  - Make a strong bond between UMP students and give them a platform to recognize each other.
  - UMP students and lecturers can share their ideas, posts, links, pictures, files and leave a comment on any post.

- UMP students and lecturers personal information can keep safe do not allow U.S. government or other countries to steal student details without agreement.
- All UMP lecturers and students are allowed to create group.
- Ensure no fake account is been created
- Solve the problem of distract UMP students attention due to addict to social network games as Facebook while visiting the site.

#### **1.4 Scope**

Based on my project, an academic social network is developed for web application only not included the mobile platform and it is scoped in UMP only as well. The academic social network has classified into 2 parts which are user part and admin part. Each part has its own different functions. The user part is for the UMP students and lecturers usage, they can use the academic social network to communicate via message box, post comment, upload video, picture and document, create group, and change account password. The maximum size for each upload is scoped to 20MB which means if the file is more than 20MB, the file is failed to upload. The file types allowed to upload are scoped to certain file types only, for video only .mp4 file type is allowed to upload, for documents only .pdf , .docx, .doc, .xlsx, .txt, .ppt, .pptx, and .ppsx files types are allowed to upload and for picture only .jpg, .gif, .png and .jpeg files types are allowed to upload. The admin part is for the UMP admins, they can register new accounts, view the user details, edit the user details, delete the user accounts, view the list of groups created, delete the group and can change their own account password.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Existing System

As the information technology is becoming more and more advance, many people are tend to use internet to benefit and convenient them. This caused the demand of social network is increased and greatly affected in the education field. Many of educators are starting to use social network as a part of medium to assist them in teaching. According to study, the 4 famous social networks use to assist in academic performance are Facebook, Edmodo, Schoology and Moodle.

##### 2.1.1 Facebook

Facebook is a free social network from U.S. which is used by users to upload photo, document, file and video, create profile, page and groups, send message and keep in touch with family, friends and colleagues [14]. [15] At the beginning, Facebook was restricted to users who have .edu email address only, but, now it is opened to all users who are 13 years old or above with having a valid email address. Facebook uses the user valid email address to verify user by send a message to user email address with a link contained and require user to click the link to complete registration. In order to support as many users as possible, Facebook supported up to 70 ++ languages [16]. According to the statistic on 1 Jan 2014, Facebook reached 1.23 billion monthly active users became the largest social network in the world [17]. It also available for the mobile platform since it has developed free Facebook apps for Android and IOS mobile platform. The figure 1 is the Facebook interface.

The image shows a screenshot of a Facebook profile page for 'Surasak Lhueng-u-sakul'. The page is set to 'Business Person' and is located in 'Bangkok, Thailand'. The profile picture shows a man in a suit. The cover photo is a dark image. The main content area shows a post from 'Surasak Lhueng-u-sakul' dated 'Friday at 11:23am'. The post has '160 Impressions · 1.25% Feedback' and includes a link to a CNN article titled 'Timeline: Steve Jobs' career edition.cnn.com'. Below the post, there is a 'Write a comment...' field. The right-hand sidebar contains 'Admins (1) [?]' and 'See All', followed by a list of admin actions: 'Use Facebook as Surasak Lhueng-u-sakul', 'Notifications', 'Promote with an Ad', 'View old Insights', and 'Invite Friends'. Below these are 'You and Surasak Lhueng-u-sakul' with a photo gallery, '67 friends like this.', and a 'Sample Ad' for 'To-Motor.com, VW Thailand, BrandBaker'. The 'Quick Tips' section suggests getting more people to like the page with Facebook Ads.

Figure 2.1 : Interface of Facebook

### Advantages of Facebook

According to the article written by the Wayan Vota, published on 3 Dec 2010, Facebook is an education tool for schools which are language development, interpersonal communication, group collaboration, ICT skills and news source [18].

Firstly, Facebook can improve the student language development because writing/texting and comment are the most main way to communicate with others in Facebook. So, Facebook users are forced to express themselves using writing method even they may learn or write a lot of broken language but at least they are start to express themselves and voice out their opinions [18].

Secondly, Facebook can improve the interpersonal communication of people. More and more people are tend to using Facebook to text with their friends or even recognize the new friends who are from different countries. Facebook also is a platform for users to find their loss contact friends such as primary school classmates. Facebook used to improve the interpersonal communication has been proven by John J. Drussell in his research paper (Title: Social Networking and Interpersonal Communication and Conflict Resolution Skills among College Freshmen) submitted in May 2012. From his