SHARE TOGETHER

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BORANG PENGESAHAN STATUS TESIS*

JUDUL: <u>SHARE TOGETHER</u>

SESI PENGAJIAN: <u>2017/2018</u>

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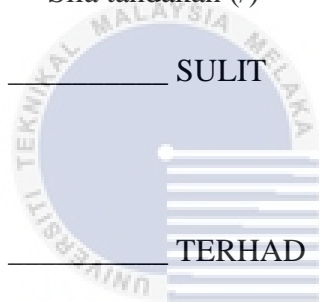
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SHARE TOGETHER

LAI QIAO HAN

This report is submitted in partial fulfilment of the requirements for the Bachelor of
Computer Science (Software Development)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2017

DECLARATION

I hereby declare that this project report entitled

SHARE TOGETHER

is written by me and is my own effort and that no part has been plagiarized without citations.
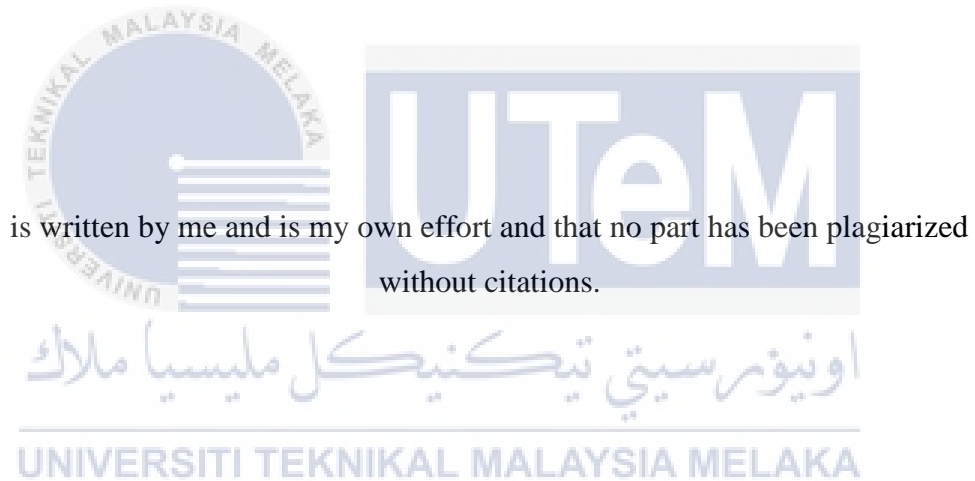
STUDENT   : _____   Date: 20 August 2017

           (LAI QIAO HAN)

SUPERVISOR: _____   Date:_____

           (Mrs. Rosmiza Wahida Abdullah)

DEDICATION

I would like to make dedication to my beloved parents, supervisor (Mrs. Rosmiza Wahida Abdullah), and my course mates who have giving me support and advice throughout the implementation of this final year project.

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I would like to express my appreciation towards Mrs. Rosmiza Wahida Abdullah. who always guide me and give me fully support throughout the progress of my final year project. I am really appreciate all the advice, innovation values, motivation and patience that have given to me and support me to finish up final year project. I am also appreciating the knowledge that he instills to me throughout this semester and finally lead my final year project to success.

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Lastly, I would like to pour out my appreciation and gratitude to my beloved parents who always gave me continuous faith, love and encouragement throughout the accomplishment of this project. Thousands of thanks I would like to say to my beloved course mates who have struggle together and help me sort out solutions when I met obstacles in the progress of this project.

ABSTRACT

Share Together is a web-based system that design for lecturers and students. It allows lecturers and students to share all the teaching and learning materials in a group. The sharing of files, news spreading and coursework discussion which are making in different platforms has made lecturers and students inconvenient for downloading the files, getting the news and viewing the information. Moreover, lecturers and students easily to miss out the important information because there are too many information from different social platforms need to be check out. The objective for developing Share Together is to provide a platform for students and lecturers to share teaching and learning materials. Besides, it is also to allow students and lecturers to have their own groups for academic purposes. The last objective is to improve security by authorizing the identity of students and lecturers and filtering the shared contents. The methodology use for developing Share Together is waterfall model. It is chosen because this project has the clear and fixed requirements that allow analysis, design, implementation, testing, and development undergo phase by phase. Share Together is significant because it will make lecturers and students more convenient in managing teaching and learning information.
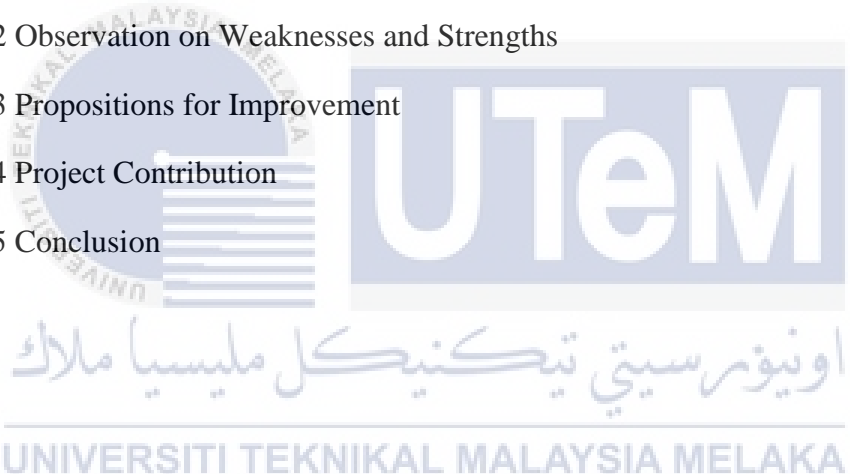
ABSTRAK

Share Together adalah sistem berasaskan web yang direka untuk golongan pensyarah dan pelajar. Ia memudahkan pensyarah dan pelajar berkongsi bahan-bahan pengajaran dan pembelajaran dalam satu kumpulan. Perkongsian fail, penyebaran berita dan perbincangan kerja kursus yang dijalankan di platform yang berbeza telahpun membawa kesukaran kepada pensyarah dan pelajar untuk memuat turun fail, mendapatkan berita dan melihat maklumat. Selain itu, pensyarah dan pelajar mudah terlepas maklumat penting kerana terlalu banyak maklumat dari pelbagai platform sosial yang perlu diperiksa. Objektif untuk membangunkan Share Together adalah untuk menyedia satu platform perkogsian yang membawa kemudahan dalam pengajaran dan pembelajaran bagi golongan pelajar dan pensyarah. Selain itu, ia juga membolehkan para pelajar dan pensyarah mempunyai kumpulan mereka sendiri untuk tujuan akademik. Objektif terakhir adalah untuk meningkatkan keselamatan bagi penggunaan Share Together. Oleh itu, Share Together mempunyai tetapan keselamatan yang boleh memastikan identiti pelajar dan pensyarah dan menapis kandungan dikongsi. Metodologi yang digunakan untuk membangunkan Share Together ialah model air terjun. Ia dipilih kerana projek ini mempunyai keperluan yang jelas dan tetap yang membolehkan analisis, reka bentuk, pelaksanaan, ujian, dan pembangunan menjalani fasa melalui fasa. Share Together mempunyai kepentingannya kerana ia membawa kemudahan kepada para pensyarah dan pelajar dalam pengurusan maklumat pengajaran dan pembelajaran.

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UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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LIST OF ABBREVIATIONS

ABBREVIATIONS	FULL NAME
ST	Share Together
PC	Personal Computer

CHAPTER I

INTRODUCTION

1.1 Introduction

The use of online platform to share and deliver teaching materials has become common yet essential in university today. Normally, lecturers will share the teaching slides to the official learning and teaching platform of the university or via popular social platforms which are Facebook and Dropbox. However, there are lecturers used to ask students to prepare their own slides as an assignment by individually or by group. After presented the slides, the way for students to share their prepared slides with other students is only can be done via social platforms. This is because the official learning and teaching platform of university is limited for students to share their slides. In addition, if lecturers want to spread news to students, the most common platform they will choose is either WhatsApp or Facebook. Besides, WhatsApp and Facebook are also the social media platforms that students use for coursework discussion.

Hence, Share Together is built to centralize all the activities between lecturers and students in one platform. It will be a user-friendly web based system that allows lecturers and students manage their teaching and learning information.

1.2 Problem Statements

a) Only lecturers are able to share files in official learning and teaching platform of university, students are not able to do that.

b) Lecturers and students are not able to create a study group in official learning and teaching platform of university.

c) The content of the files that uploaded in social media platform sometimes are not appropriate for academic purpose.

1.3 Objective

a) To provide a platform for students and lecturers to share teaching and learning materials.

b) To allow students and lecturers to have their own groups for academic purposes.

c) To improve security by authorizing the identity of students and lecturers and filtering the shared contents.

1.4 Scope

The target users of this system are the university lecturers and students. For this system, after users are registered and login to the system, they are able to create groups or join to the existing groups. If users created a group, they will automatically become admin of the group. If users joined a group, they will become member of the group. After that, users are allow to view the content in the group, upload files to group, and download files from the group. The files that uploaded by member need to be approved by admin of the group before publishing to other group members. Admin are able to approve or decline the uploaded files.

1.5 Project Significance

By using Share Together system, lecturers and students will become convenient in managing the teaching and learning information. Lecturers and students do not need to join many groups from different social platforms, all the group they join are from same platform, which is Share Together. Besides, lecturers and students can upload any files in a group and the uploaded files will be filter by group admin before publish to other group members. Thus, the content of the uploaded files are always appropriate.

1.6 Expected Output

This system allows lecturers and students to upload the teaching and learning information either privately or publicly. Moreover, users especially lecturer and class representative can make announcements about coursework in their profiles or in a group. Users can follow other users' profiles in order to get the notifications of their latest updated information. Besides, there is a functions for users to share the files from other user. Thus, they won't easily to miss out the information that uploaded by the users they follow.

1.7 Conclusion

In conclusion, Share Together system will be a centralized platform for students and lecturers to share the teaching and learning information. It is built to help lecturers and students in managing different coursework information. Hence, lecturers and students will become convenient in their teaching and learning life.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

In the previous chapter, an overall concept of the project is defined including the problem statements, objectives, and expected result of the project.

A research about the domain of the project will be discussed. Analysis on existing system will also be done in this chapter.

2.2 Facts and findings

This section will discuss about the domain of the project which is social networking and the existing system that similar for the system that are going to develop.

2.2.1 Social Networking

Social networking is the use of online social media platform to create connection with family, friends, colleagues, customers and many other group of people. It is a social that build the relationship among the people who use the Internet as an online community (Wilailak T., 2011). The online community also known as virtual community that empower people to get together, share information or experiences, exchange ideas and collaboration among each other. Social networking sites (SNSs) act as an agent that make all these communication activities happened.

Normally, the use of SNSs starts by creating a user account, then follow by inserting basic personal details. After filling the information, a user profile is created completely. User can active and expand his profile by adding friends, uploading picture or text on profile page, sending messages to other users, and many other features.

2.2.1.1 Category of Social Networking Sites

According to Wilailak T. (2011), SNSs can be classified into 8 categories according to their functionalities.

1. Identity Network

This type of SNSs give users a space to distribute their stories and experiences online by creating their own identities. Users can share their stories through pictures, blogs, videos

or documents. This type of SNSs can build unlimited relation. Example for this sites are Facebook, Twitter, MySpace, etc. (Wilailak T., 2011)

2. Creative Network

This type of SNSs are multimedia sharing platforms that allow users to show their portfolios. It could be like their own gallery for music, videos and pictures. Example for this sites are YouTube, Multiply, Flickr, etc. (Wilailak T., 2011)

3. Passion Network

This type of SNSs allows users to create an online bookmarking and store it on the site. Thus, users are able to share the favorite item that has been bookmarked with the people who has the similar interesting for future reference. Example for this sites are Zickr, delicious, etc. (Wilailak T., 2011)

4. Collaboration Network

This type of SNSs requires the contribution from practitioners of their knowledges to keep the knowledge improving and lead to development. Example of this sites are Google Docs, Wikipedia, Google Calendar, etc. (Wilailak T., 2011)

5. Virtual Reality

This type of SNSs allow users to create and design a virtual character to represent themselves. On the sites, users can try to do the things that they never do in the reality. Example for this sites are World of Warcraft, Second Life, etc. (Wilailak T., 2011)

6. Professional Network

This type of SNSs are designed to offer the opportunities for career-related growth. Users are able to advertise their resume and profile on the sites and recruiters can browse the resume for employment. Some of these sites focused on specific occupations or interests, while others are provided a general forum for professionals to interact. Example of this sites are LinkedIn, Classroom 2.0, Viadeo, etc. (Wilailak T., 2011)

7. Peer to Peer (P2P)

This type of SNSs generate direct communication or information sharing by connecting each user's machine directly. Example of this sites are Skype, BitTorrent, etc. (Wilailak T., 2011)

8. Education Network

This type of SNSs are designed for students to interact with other students or with teachers via forums. An education environment is generated such as assign and submit assignment, conduct research, and many others activities related to education. Example of this sites are Schoology, ePALS School Blog, Desire2Learn, etc. (Wilailak T., 2011)

2.2.1.2 Benefit of Social Networking Sites in Education

Communication is the backbone of education. Everything from classroom teaching to school policy making depends on effective communication(Kio, S. L. and Negreiros, J. , 2013). Based on Adam, G. et al. (2011), social networking enhance the teaching and learning environment in the multiple ways that stated as below.

1. Early Recognition of Student Needs and Formative Assessment

SNSs allow teachers to give a direct and immediate guidance for students. This can help students to have more understanding about their coursework. Students can ask their teachers on the ambiguity or difficulty about the assignments and projects anytime because online communication is available all the time. As a result, this sites provide teachers to have an early recognition of student needs. More frequent and informal review of students' work opens the door for formative assessment. (Adam, G. et al., 2011)

2. Establishment of Classroom Community

Students form a community that shares ideas, approaches, and resources. Thus, students are able to access to a variety of learning styles in an environment that is encouraging.

Students indicate that online class discussions are both valuable and enjoyable. (Adam, G. et al., 2011)

3. Student Engagement

Students nowadays are growing up with social network. They are familiar and enjoy with online social networks. Some of them are reaching the level of "can't live without social networks". Thus, students are more responsive to the materials that presented on SNSs. A research on the use of social networking to improve literacy shown that students make comments with less hesitant in online platform. As a result, students engaged more in classroom discussion because of the encouragement of the informality from the online environment. Thus, students' reading and writing skills improved (Neofitou, P. and Sarah, E., 2008)

4. Increased Sense of Student Achievement

By using of SNSs, students are able to connect and communicate with their teachers and classmates for discussion of coursework or even sharing of idea and thought. Through the allowing for students to ask for help and receive advice instantly, SNSs generate a sense of control over one's learning. Thus, students will be more probably to excel if they take pride in their work and believe they have control over their academic performance. (Neofitou, P. and Sarah, E., 2008)

5. Information Management

The management of teaching and learning information become easily and convenient because of the power of SNSs. SNSs have the ability to integrate video clips, music clips, photos, texts, and hyperlinks into a single platform. The implementation of multimedia resources help students to learn more quickly and more effectively. (Neofitou, P. and Sarah, E., 2008)

6. Access to Marginalized Students

There are students who are not capable of learning in a traditional classroom setting. However, these students mostly are powerful when engage with technology. It is an effective way to reach these marginalized students with the use of SNSs. (Neofitou, P. and Sarah, E., 2008)

2.2.2. Existing System

Facebook, WhatsApp, and Dropbox are the systems that normally teachers and students will use for teaching and learning although the main purpose of these system is not for educational purpose.

2.2.2.1 Facebook

Facebook was founded by Mark Zuckerberg and his roommates in 2004. It is a social networking sites that allows people in the whole world to organize his/her relationships with other people. Currently, Facebook had nearly 2 billion monthly active users. The extensive use of Facebook is not only due to its popularity, but also support by various devices. Facebook is a web application that can be accessed by any web browser and also a mobile application that can be accessed by any operating system.

Based on research, Web-based learning has made learning content much more freely and instantaneously available to students who can download course notes and readings with a single mouse click. Facebook is one of many Web 2.0 tools that are listed as having potential applications for teaching and learning (Tanja E Bosh 2009). Facebook is a SNSs that support many features which can use by education purpose. One of the

feature is allowing the creation of group. There are secret group, closed group, and public group. Secret group is the group that only members can find the group and see the post inside. The members of a secret group is only can added by the creator of the group. Closed group can find by anyone but only members can see the contents inside the group. Normally, the members of the group is added by the creator or the users of Facebook found the group and then request for joining the group. The creator of closed group can choose for approved or decline the request. For public group, anyone from the Facebook can see the group and also the contents in the group. Users can join as a member of the public group without permission of the creator.

There are many teachers and lecturers nowadays using the feature of "Group" in Facebook to create a closed group for transferring of teaching and learning information. Students need to enroll into the group in order to get the information of the particular course.

Besides, Facebook provides the notifications of all updates from the items that related to user himself/herself. For example, users will get the notifications if there is a new post on the group they join.

Facebook support the uploading of photos, videos, and files. It is convenient for lecturers and students to upload the files such as course materials, course assignment, and other software that used in learning and teaching.

Real time conversation (chatting box/messenger) in Facebook is also the feature that can use for educational purpose. Students can make a real time conversation with lecturers or with their course mates. In addition, this feature support not only one-to-one conversation, but also support conversation of a group people in a single chat room. A chat room can have up to 100 of users.

2.2.2.2 WhatsApp

WhatsApp was founded in by Brian Acton and Jan Koum. It is a cross-platform instant messaging application that allows iPhone, BlackBerry, Android, Windows Phone and Nokia smartphone users to exchange text, image, video and audio messages for free. There is over one billion people use WhatsApp worldwide and it is particularly popular across Europe, South America and Africa. A research that study on how WhatsApp impact on student learning is conducted by Alauddin et al. (2015). Based on the result, both students and lecturers are active in using WhatsApp as a learning guide tool.

The dimple and reliable messaging function allows people to message each other anytime and anywhere for free. Students normally use this feature to chat privately with course mates and lecturers about the coursework. Students can share videos, photos, and files including PDFs, documents, spreadsheets, slideshows and more among each other.

Besides, the features of group chat enable student to keep in touch with the group of people. For the group chat, it can be up to 256 people at once. The functionality is same as the normal chat.

In addition, WhatsApp provides also web version. Users can sync all of the chats to computer as a result they can chat on whatever device as their conveniently.

2.2.2.3 Dropbox

Dropbox was founded by Drew Houston and Arash Ferdowsi in 2007. Dropbox is a simple, reliable, full-featured file-syncing and storage service with support for real-time online document collaboration.

Sharing of files and folder is the feature that normally lecturers and students will use for. There are 2 type of files and folder sharing. One is can edit type which means the sharing members can edit, delete, and add files to the folder. Another one is for viewing only which the sharing members can view and download the files only, but cannot edit them. This folder sharing feature is only can be used by Dropbox users.

Besides, there is another type of files and folder sharing which can be accessed by the people who didn't register to Dropbox. Users of Dropbox can share file by create a web address of a permanent, public link to the file. After that, anyone who use or didn't register to Dropbox can access to that link. Only that file and not the entire folder is visible from that link.

2.2.2.4 Comparison of the features of Facebook, WhatsApp, Dropbox, and Share Together

The table below shows the comparison of Facebook, WhatsApp, Dropbox, and Share Together.

Table 2. 1 Comparison of Facebook, WhatsApp, Dropbox, and Share Together

Features	Facebook	WhatsApp	Dropbox	Share Together
Profile page		✓		✓
Group creation	✓			✓
Files uploading		✓	✓	✓
Photo uploading	✓	✓	✓	✓
Video uploading	✓	✓		
Comment on uploaded items	✓		✓	✓
Real time conversation (text)	✓	✓		✓
Real-time conversation (voice or video)	✓	✓		
Notification	✓	✓	✓	✓
Can use with smart phone	✓	✓	✓	✓

Can use with websites	/	/	/	/

2.2.3 Technique

There is only web based technique used to develop this project. The details of the technique will be discuss in section 2.2.3.1.

2.2.3.1 Web Based Technique

Web based applications are coded in a browser supported language such as HTML, ASP or PHP which can be accessed by clients through a web browser. It combines with the HTML code that determines the visual layout and the CSS style sheet, the HTML, JavaScript and CSS are executed via the browser. Besides, JavaScript instructions are contained within the web page that is retrieved from a website.

In this project, web based technique is used and the language used to develop this project is PHP (Hypertext Preprocessor). Materialize which is a modern responsive CSS framework is applied on this project and make the layout more beautiful. This project can be opened via web browsers such as Internet Explorer, Google Chrome, and FireFox.

2.3 Project Methodology

Waterfall model is the suitable methodology that will be used to build Share Together system. This is because Share Together has the clear and fixed requirements. Waterfall model display the software deployment process in a linear sequential flow. A phase is starting only when the previous phase is end. Thus, there is no overlapping among all the phases. This model is easy to manage because of the rigidity of the model which means each phase has specific deliverables.
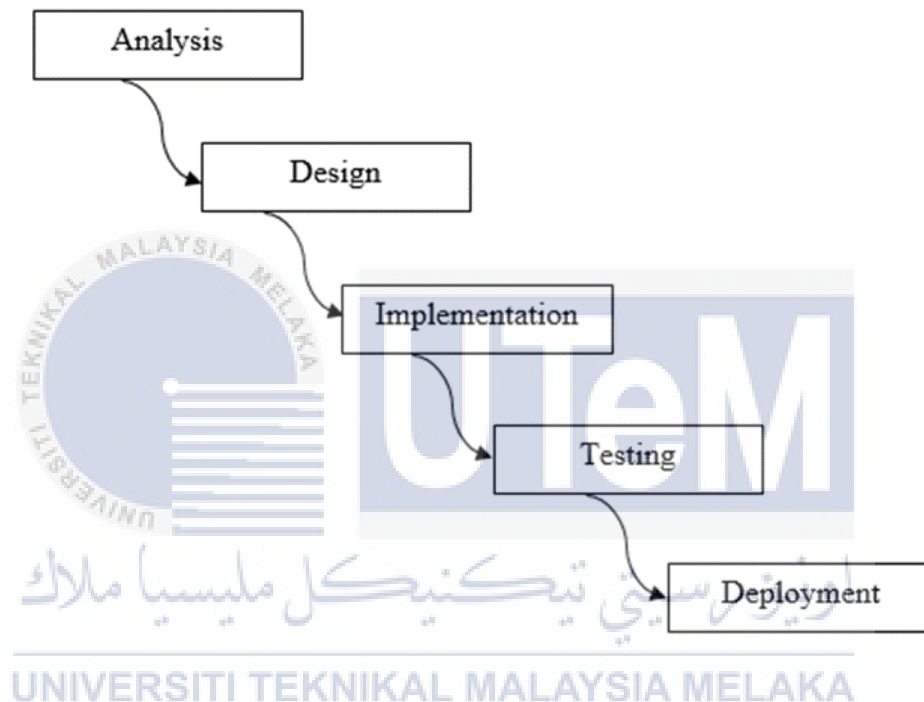
Figure 2.1 Waterfall model

With waterfall model, Share Together system will undergo 5 phases, which are analysis, design, implementation, testing, and deployment. All the phases have the different tasks, but the outcome of one phase is the input for the next phase sequentially. If there is a phase do not process or complete, then the phase after it cannot begin.

2.3.1 Analysis

Analysis is the first phase of waterfall model. In this phase, all the requirements and specifications activities are included. In Chapter 1, the title is defined as well as the objectives and problem statements. For Chapter 2, a literature review is conducted to get more understanding of the topic and also identify the potential areas of the topic. The existing systems which has the similar functionality with the proposed system is analyzed and a clear comparison table is illustrated. The list of software and hardware requirements need to be identified. Besides, the project schedule and milestone which explain the action plan from the beginning to the end of the project is needed. This is to make sure the activities of the project are keeping on track and thus bring the project to the success point. Next, the problem analysis of the Share Together system is will be in Chapter 3. The analysis of all the requirements which including data requirements, functional requirements, and non-functional requirements are done.

2.3.2 Design

The design phase is initiated after the deliverables of analysis phase are reviewed and accepted. The deliverables of this phase include high level design and detailed design. System architecture, user interface, database design, software design, and physical database design will be presented in Chapter 4.

2.3.3 Implementation

After the design phase is completed, activities of the implementation phase is begin. All the high level design will be transformed into an executable code during the implementation phase. The source code is develop for every module. Besides, the

implementation of the database design will be integrated with the developed code. The details of the activities of implementation will be stated in Chapter 5.

2.3.4 Testing

Testing phase is started once the implementation phase is finished. The test cases is develop in this phase. All the test cases must be develop according to the requirements that define in the earlier stages. After test cases is designed, the developed system which is Share Together will be tested according it. The test plan, test strategy, test design, test results and analysis of the system will be explained and described in Chapter 6.

2.3.5 Deployment

The final phase of developing this system is deployment phase. The Share Together system is ready to go live after it successfully passes all the test cases in previous phase.

2.4 Project Requirement

In order to develop the project, some preparation need to be done to fulfill the software and hardware requirements of the project.

2.4.1 Software Requirement

Below are the list of software requirement to develop the Share Together system.

Table 2.1 List of software

Software Requirement	Description
WampServer (By installing this software, it will automatic configure with PHP, MySQL, Apache and operating system base configuration file inside operating system)	Windows web development environment to create web application
Web Browser	As the tool to open web application
Atom	As the text editor
Android Studio	To build mobile application
Microsoft Visio	To deal with all the low and high level design
Microsoft Office	To produce the report

2.4.2 Hardware Requirement

Below are the list of hardware requirement to develop the Share Together system.

Table 2. 2 List of hardware

Hardware	Minimum Requirement
Laptop	- Quad-core 1.70 GHz or faster processor - 4 GB RAM or more

2.5. Project Schedule and Milestones

ID	Task Name	Duration	Start	Finish
1	**Share Together Project**	136 days	Mon 13/2/17	Mon 21/8/17
2	**Analysis**	26 day	Mon 13/2/17	Mon 20/3/17
3	Define problem statements and objectives	4 days	Mon 13/2/17	Thu 16/2/17
4	Do research on the title	12 day	Mon 20/2/17	Tue 7/3/17
5	Identify hardware and software	2 days	Fri 10/3/17	Mon 13/3/17
6	Define use case	2 days	Tue 14/3/17	Wed 15/3/17
7	Define functional and non-functional requirement	2 days	Thu 16/3/17	Fri 17/3/17
8	**Design**	14 day	Mon 20/3/17	Thu 6/4/17
9	Design system architecture	4 days	Mon 20/3/17	Thu 23/3/17
10	Develop user interface	5 days	Fri 24/3/17	Thu 30/3/17
11	Develop database design	5 days	Fri 31/3/17	Thu 6/4/17
12	**Implementation**	60 day	Fri 7/4/17	Thu 29/6/17
13	Download and install software	1 day	Fri 7/4/17	Fri 7/4/17
14	Connect to database	1 day	Mon 10/4/17	Mon 10/4/17
15	Develop authentication module	12 day	Tue 11/4/17	Wed 26/4/17
16	Develop manage profile module	5 days	Mon 1/5/17	Fri 5/5/17
17	Develop manage group module	14 day	Wed 10/5/17	Mon 29/5/17
18	Develop manage file module	17 day	Tue 30/5/17	Wed 21/6/17
19	Integrate the system	5 days	Thu 22/6/17	Wed 28/6/17
20	**Testing**	36 day	Thu 29/6/17	Thu 17/8/17
21	Design test case	10 day	Thu 29/6/17	Wed 12/7/17
22	Conduct testing	16 day	Thu 13/7/17	Thu 3/8/17
23	Analyst the testing result	10 day	Fri 4/8/17	Thu 17/8/17
24	**Deployment**	2 days	Fri 18/8/17	Mon 21/8/17
25	Presentation	1 day	Fri 18/8/17	Fri 18/8/17
26	Submit final report	1 day	Mon 21/8/17	Mon 21/8/17

Figure 2.2 Gantt chart of project

2.6 Conclusion

The chapter discusses about the domain of this project which is social networking in educational. It also compare the 3 existing system with the system that going to develop. By doing the research of previous studies, it helps to prevent effort duplication. On the other hand, waterfall methodology has been used for developing this project. It is important in choosing the right methodology in order to produce a successful project.

CHAPTER III

ANALYSIS

3.1 Introduction

In this chapter, the analysis of this project will be discussed. Besides, it will also discuss the requirements derived from the analysis of problems in detail. It is including data requirements, functional requirements, and non-functional requirements.

3.2 Problem Analysis

Nowadays, almost every university has their official teaching and learning platform for lecturers and students. However, there are some limitation for lecturers and

students in managing the teaching and learning information in the university official platform. First, lecturers and students are not allow to create a group for their own academic purpose. The course group is created by the officer of the university. Thus, the members of the group sometimes are from many different courses. The files uploaded by different lecturers make students confuse. They do not know which file is uploaded by their lecturer.

Next, the official teaching and learning platform in university only allow lecturers to upload the teaching files. Students do not have the right to upload files in the course group. This has made students to create groups in other social media platforms, example WhatsApp, Facebook, or Dropbox. Thus, students can share the learning information and files among each other. However, the learning information and files that shared by students in social media platforms sometimes are not appropriate and not correct. This will made others students follow the wrong technique and result in they did wrong in final exams or assignments.

3.3 Requirement analysis

This section introduces the requirement analysis of the system which includes data requirement, functional requirement and non-functional requirement.

3.3.1 Data Requirement

In this system, it is using MySQL database to store all the information and this web system will deliver the required data to the user. There are total five tables in the

database, which are login table, user table, group table, file table, and user_group table, which user_group table is the bridge table of user table and group table.

User need to input their ID number, email, and password in order to create an account of the system. All the data will be store in user table. Besides, after user login to the system with email and password, they can create a group by input the group name, group status and group key. All the group information will store in group table. In addition, the member of the group can upload files to the server and storing the file name, file description, file path, upload time and the other information about the files.

3.3.2 Functional Requirement

Functional requirements are statements of services that a system should provide. This section describes the functional requirements of Share Together system. A use case diagram is provided to give an overview of the functional requirement of the system.
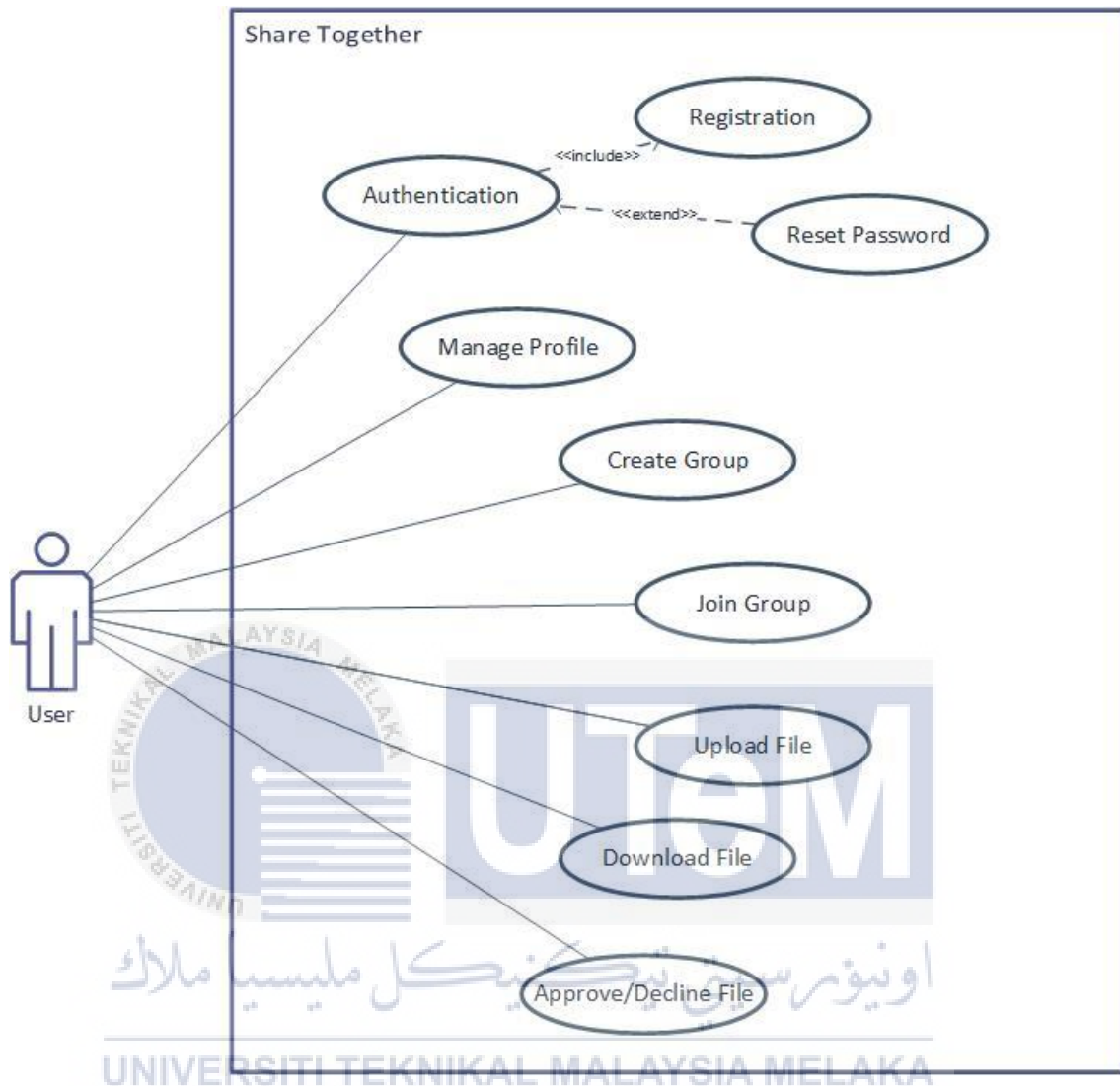
Figure 3.1 Use case diagram

Table 3. 1 Details of use case

ID	Requirement	Description
UC01	Authentication	User can login with registered email and password to access the system.
UC02	Registration	User is allow to create an account with ID, email, and password.
UC03	Reset Password	User can reset password if forget the password.

UC04	Manage Profile	User can manage profile by change password or edit profile photo.
UC05	Create Group	User can create a closed or public group and will automatically become admin of the group.
UC06	Join Group	User can join a public or closed group.
UC07	Upload File	User can upload file to the group.
UC08	Download File	User can download any of the files that are in the group.
UC09	Approve/Decline File	Admin of the group can approve or decline the uploaded files by member.

3.3.3. Non-functional Requirement

Non-functional requirement is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors. This section describes the non-functional requirements for Share Together system.

i. Usability

Table 3. 2 Non-functional requirement (usability)

Requirement	Description
Simple Interface Design	The user interface for this system is easy to understand and user can familiar to use all the functions in this system.

ii. Security

Table 3. 3 Non-functional requirement (security)

Requirement	Description

Register	Only the matric no of the lecturers and students existed in the university database can register to the system.
Login	Users need to activate their account through email before login to the system.
Uploaded File	All the uploaded files by members of the group need to be filter (approve or decline) by admin before publishing to other group members.

3.4 Conclusion

This analysis chapter analyzed the problems and requirements in details. These requirements are important to help in develop the system. The developer now clearly know what they need to do. The design of Share Together system will describe in the next chapter which included high-level design and detailed design.

CHAPTER IV

DESIGN

4.1 Introduction

This section discusses about the results of the analysis and design of the proposed system. The introduction of high-level design and system architecture of the system is introduced at the beginning of the chapter.

4.2. High-Level Design

High level design is the overall system design, covering the system architecture and database design. It describes the relation between various modules and functions of the system.

4.2.1 System Architecture

The figure below give the clear view of the system architecture of the system.
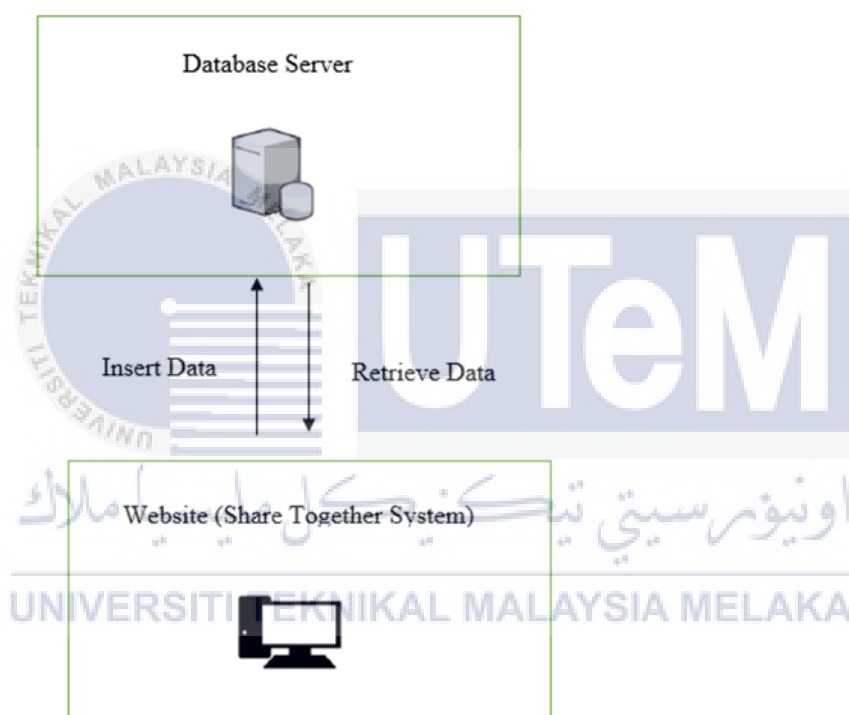
Figure 4.1 System Architecture

4.2.2 User Interface Design

This section will show the navigation design, input design, and output design of the system.

4.2.2.1 Navigation Design
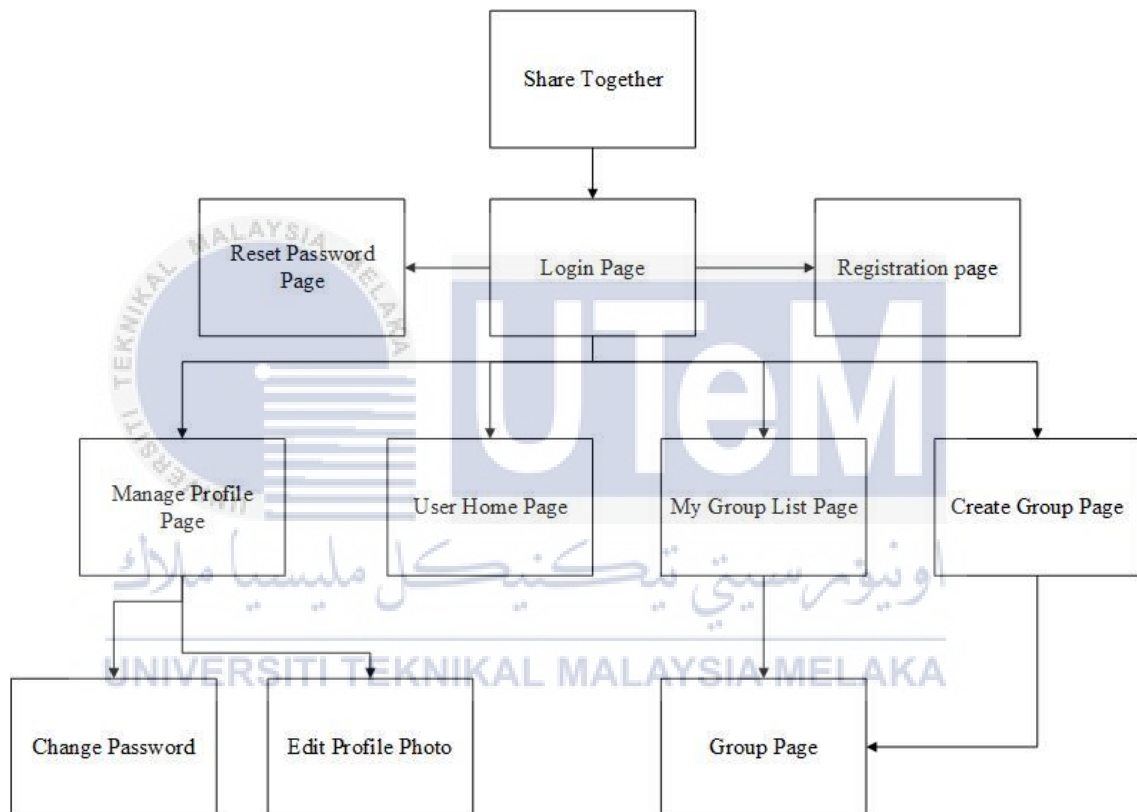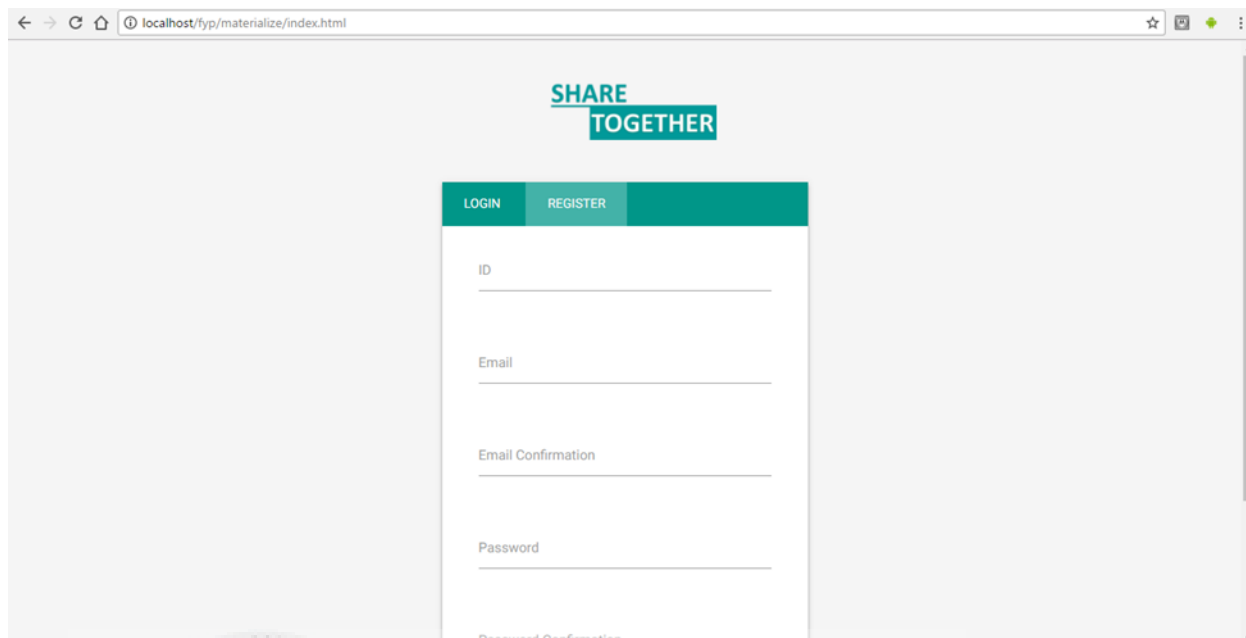
Figure 4.2 navigation diagram
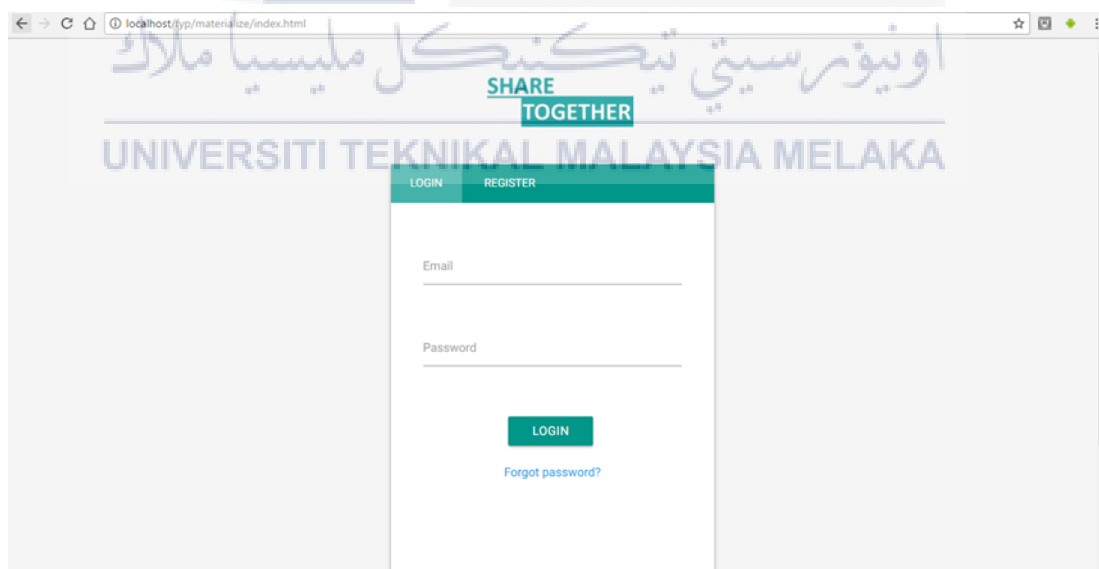
4.2.2.2 Input Design

Figure 4.3 Input design 1

Figure 4.3 shows the register page of the system. User need to enter their ID, email, and password for registration.

Figure 4.4 Input design 2

Figure 4.4 shows the login page of the system.
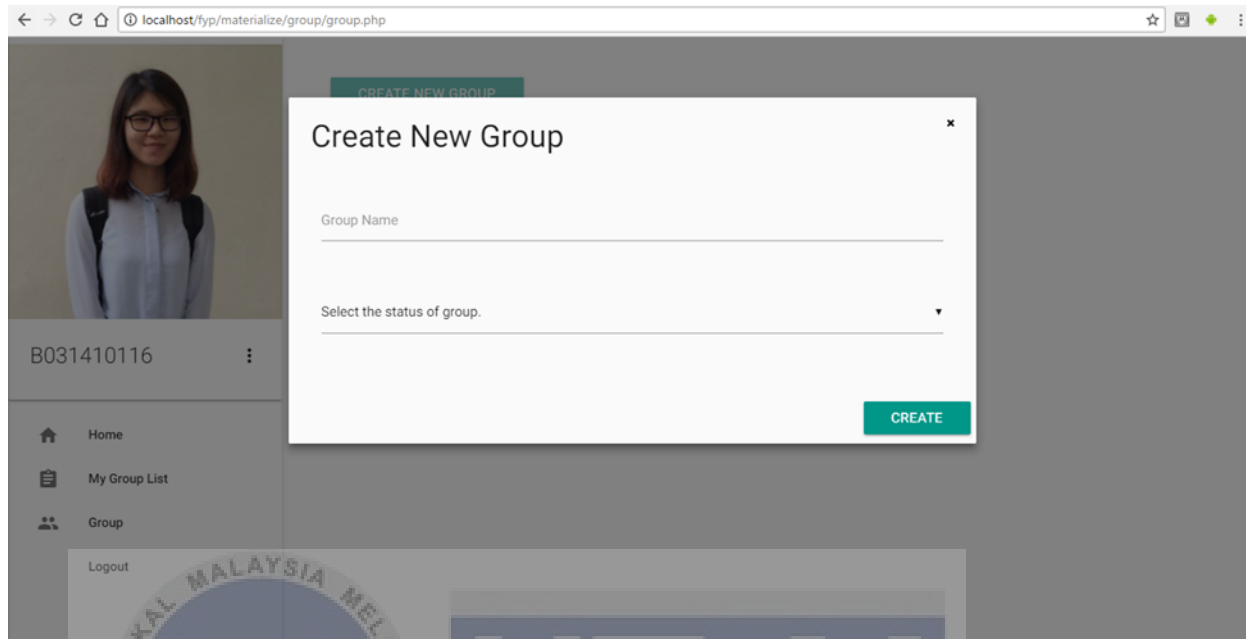
Figure 4.5 Input design 3

Figure 4.5 is the input design of create new group.
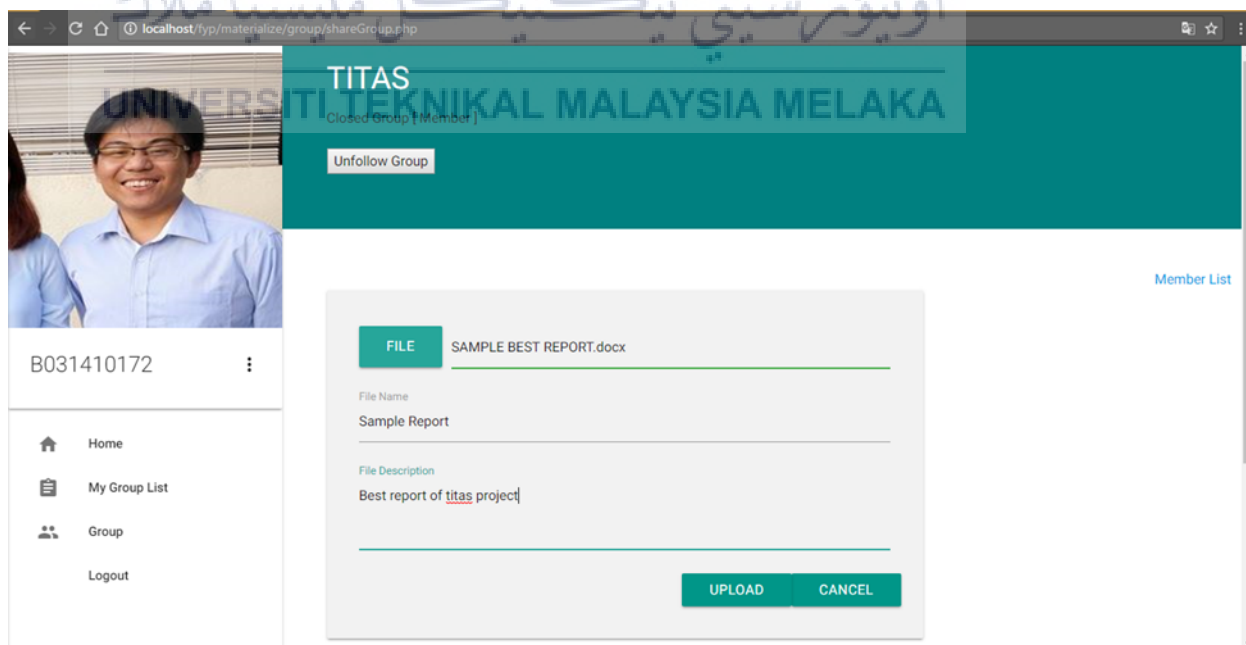
Figure 4.6Input design 4

Figure 4.6 is the input design for upload file.

4.2.2.3 Output Design
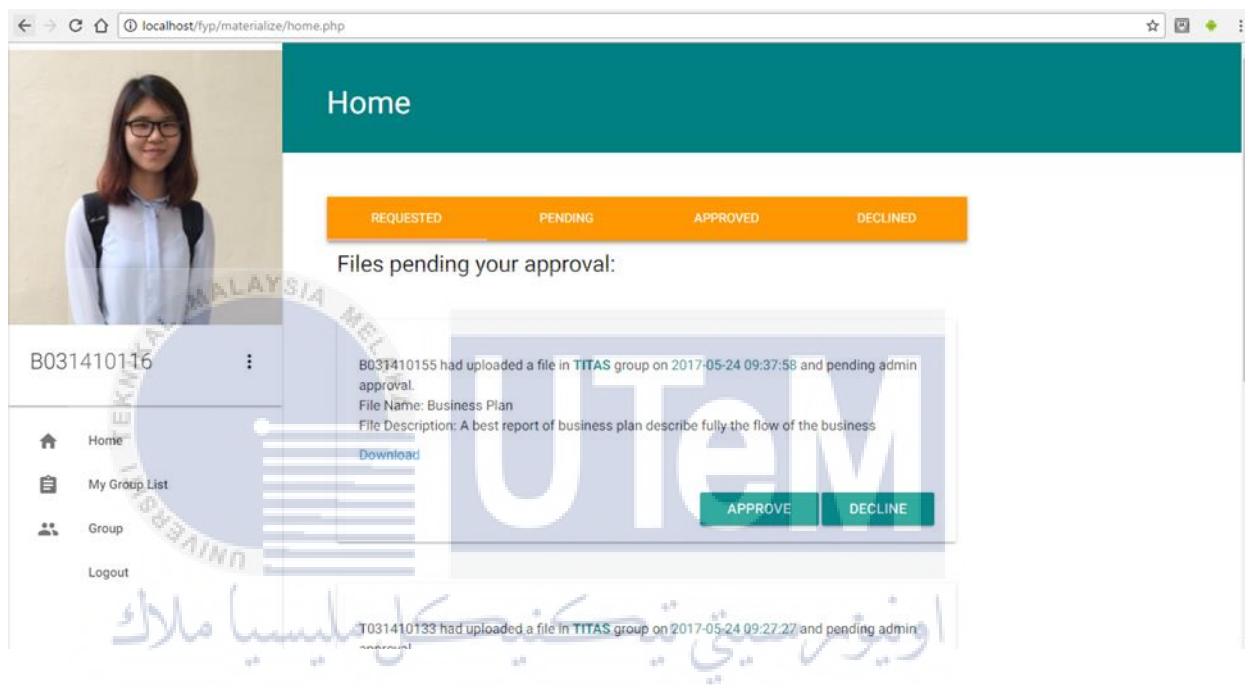
Figure 4.7 Output design 1

Figure 4.7 shows the ouput design of the user home page.
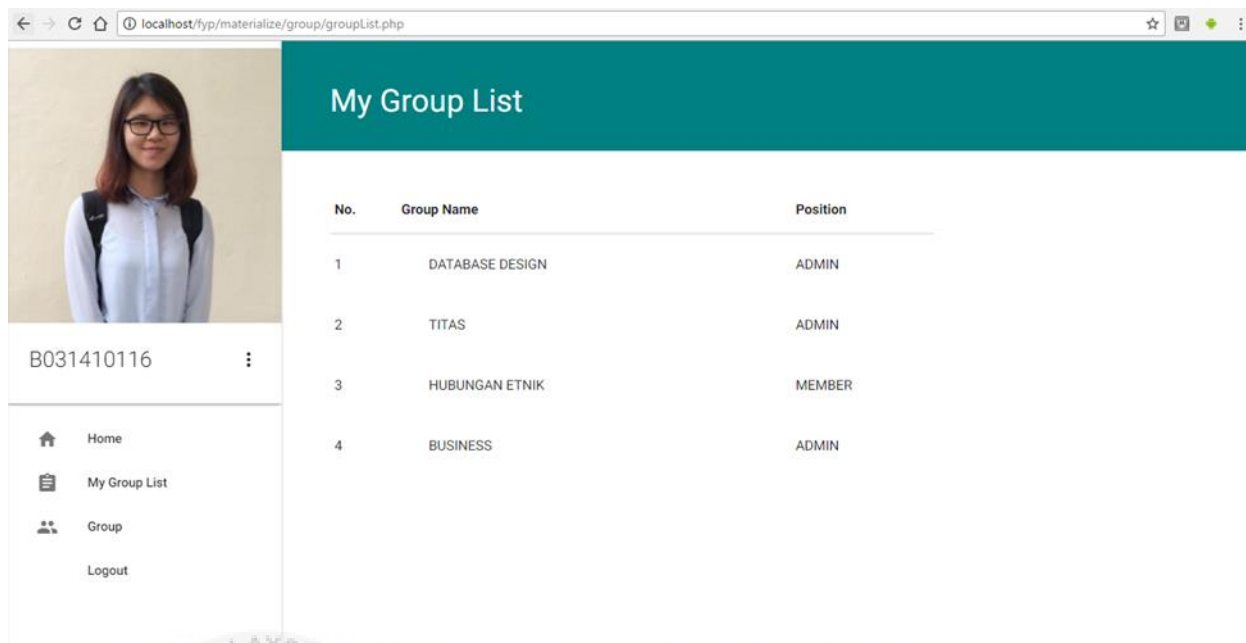
Figure 4.8 Output design 2

Output design 2 shows the My Group List page of the system.

Figure 4.9 Output design 3

Figure 4.9 is the ouput design of a public group wall.

Figure 4.10 Output design 4

Figure 4.9 is the ouput design of the member list of a group.

4.2.3 Database Design

In this section, the conceptual database design and logical database design is shown.

4.2.3.1 Conceptual Database Design
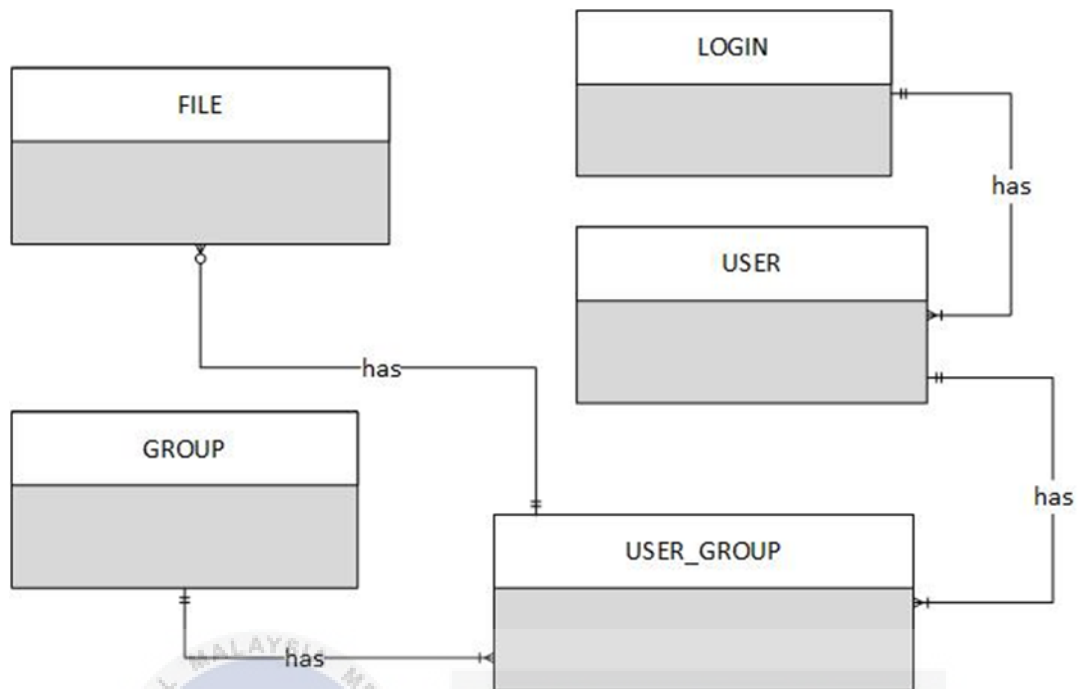
Figure 4.11 Conceptual Database Design
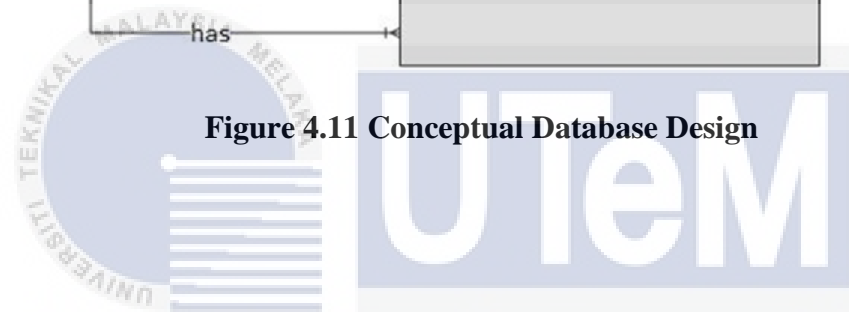
4.2.3.1 Logical Database Design
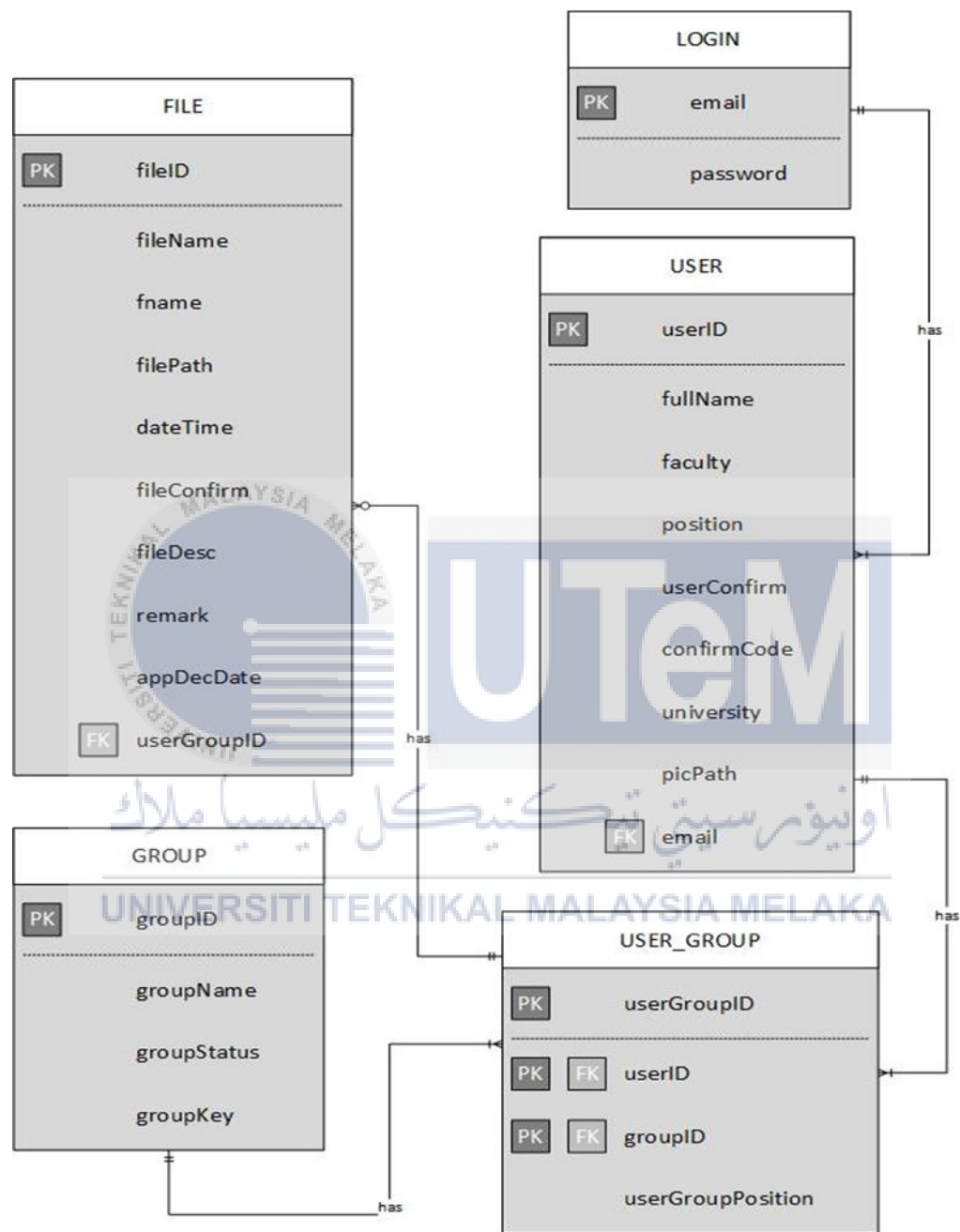
Figure 4.12 Logical Database Design

4.3 Detailed Design

4.3.1 Software Design

4.3.1.1 Use Case Description

Table 4.1 Authentication description

Use Case Name	Authentication
Use Case ID	UC01
Actor	User (lecturer and student)
Use case description	Login to the system.
Precondition	Account must be exist and activated.
Normal Flow	1 System display login page.
	2 User insert email and password.
	3 System verify email and password. [E1, E2]
	4 System display user home page.
	5 Process end.
Alternative Flow	-
Exceptional Flow	E1: Wrong email or password
	1 System display error message 'Invalid email or password'.
	2 System return to login page.
	E2: Email not yet activate
	1 System display error message 'Please activate your account through email'.
	2 System return to login page.
Postcondition	User access to home page.

Table 4.2 Registration descripton

Use Case Name	Registration
Use Case ID	UC02
Actor	User (lecturer and student)
Use case description	Register to the system.
Precondition	User's ID must be in the university database.
Normal Flow	1 System display register page.
	2 User insert ID, email and password.
	3 System verify ID, email and password and save the data. [E1, E2]
	4 System display login page.
	5 Process end.
Alternative Flow	-
Exceptional Flow	E1: ID not exist in university database
	1 System display error message 'Invalid ID!'.
	2 System return to login page.
	E2: ID exist in system database
	1 System display error message 'ID already registered!'.
	2 System return to login page.
Postcondition	User account is created.

Table 4.3 Reset password description

Use Case Name	Reset Password
Use Case ID	UC03
Actor	User (lecturer and student)
Use case description	Reset Password.
Precondition	Account must be exist and activated.

Normal Flow	1 System display forgot password page.
	2 User insert ID.
	3 System verify ID. [E1,E2]
	4 System display login page.
	(User need to click a link from the email sent by Share Together
	system in order to continue the process below)
	5 System display reset password page.
	6 User insert new password.
	7 System verify and save the password.
	8 System display login page.
	9 Process end.
Alternative Flow	-
Exceptional Flow	E1: ID not activate yet
	1 System display error message 'Please activate your account
	through email'.
	2 System return to login page.
	E2: wrong ID
	1 System display error message 'Invalid ID!'.
	2 System return to login page.
Postcondition	User's password is reset.

Table 4.4 Manage Profile description

Use Case Name	Manage Profile
Use Case ID	UC04
Actor	User (lecturer and student)
Use case description	Manage profile by change password and edit profile photo.

Precondition	User must be login to the system.
Normal Flow	1 User choose to edit profile photo. [A1]
	2 System display edit profile photo page.
	3 User choose a photo from PC to replace current profile photo.
	4 System save the photo.
	5 Process end.
Alternative Flow	A1:
	1 User choose to change password.
	2 System display change password page.
	3 User insert old password and new password.
	4 System verify and save the password. [E1]
	5 Process end.
Exceptional Flow	E1: old password not match
	1 System display error message 'Old password not match'.
	2 System return to home page.
Postcondition	User successfully change the profile photo or password.

Table 4.5 Create group description

Use Case Name	Create Group
Use Case ID	UC05
Actor	User (lecturer and student)
Use case description	Create a public or closed group.
Precondition	User must be login to the system.
Normal Flow	1 System display create group page.
	2 User insert group name.
	3 User select public group and click create. [A1]
	4 System save the info.

	5 Process end.
Alternative Flow	A1: 1 User select closed group. 2 User enter group key and click create. 3 System save the info. 4 Process end.
Exceptional Flow	-
Postcondition	User successfully create a group.

Table 4.6 Join group description

Use Case Name	Join Group
Use Case ID	UC06
Actor	User (lecturer and student)
Use case description	Join a public or closed group.
Precondition	User must be login to the system and not the admin or member of the particular group.
Normal Flow	1 System display search group page. 2 User insert a group name and search it. 3 System verify the group name. [E1] 4 System display the group. 5 User click join button to join a public group. [A1] 6 System save the info. 7 Process end.
Alternative Flow	A1: 1 User insert group key and click the join button to join a closed group. [E2]

	2 System save the info.
	3 Process end.
Exceptional Flow	E1: Group name not exist
	1 System display error message 'Group not exist'.
	2 System return to search group page.
	E2: Group key not match
	1 System display error message 'Group key not match'.
	2 System stay on the group page.
Postcondition	User successfully join a group.

Table 4.7 Upload file description

Use Case Name	Upload File
Use Case ID	UC07
Actor	User (lecturer and student)
Use case description	Upload file to a group
Precondition	User must be the member or admin of the particular group.
Normal Flow	1 System display the particular group page.
	2 User choose to upload file.
	3 User choose file from PC.
	4 User insert file name and file description.
	5 System verify and save it. [E1]
	6 Process end.
Alternative Flow	-
Exceptional Flow	E1: file type and file size not valid
	1 System display error message 'File size or file type not valid'.
	2 System return to the particular group page.

Postcondition	User (member) upload a file and pending for admin approval. If the user is admin of the group, the file is successfully upload and post on group wall.

Table 4.8 Download file description

Use Case Name	Download File
Use Case ID	UC08
Actor	User (lecturer and student)
Use case description	Download file from a group
Precondition	User must be the member or admin of the particular group.
Normal Flow	1 System display the particular group page. 2 User view the group file name and file description. 3 User choose to download a file. 4 Process end.
Alternative Flow	-
Exceptional Flow	-
Postcondition	User is successfully download a file.

Table 4.9 Approve/Decline description

Use Case Name	Approve/Decline File
Use Case ID	UC09
Actor	User (lecturer and student)
Use case description	Admin approve or decline the file uploaded by group member.
Precondition	User must be the admin of the particular group.
Normal Flow	1 System display the file approval post.

	2 User view the file name and file description.
	3 User download the file and view the content of the file.
	4 User choose to approve the file. [A1]
	5 Process end.
Alternative Flow	A1:
	1 User choose to decline the file.
	2 User insert the decline reason.
	3 Process end.
Exceptional Flow	-
Postcondition	If the file is approved, the file will be post on the group wall and the member who upload the file will get the approved notification. If the file is declined, the file is not able to post on group and the member that upload the file will get the notification and the declined reason.

4.3.1.2 Sequence Diagram
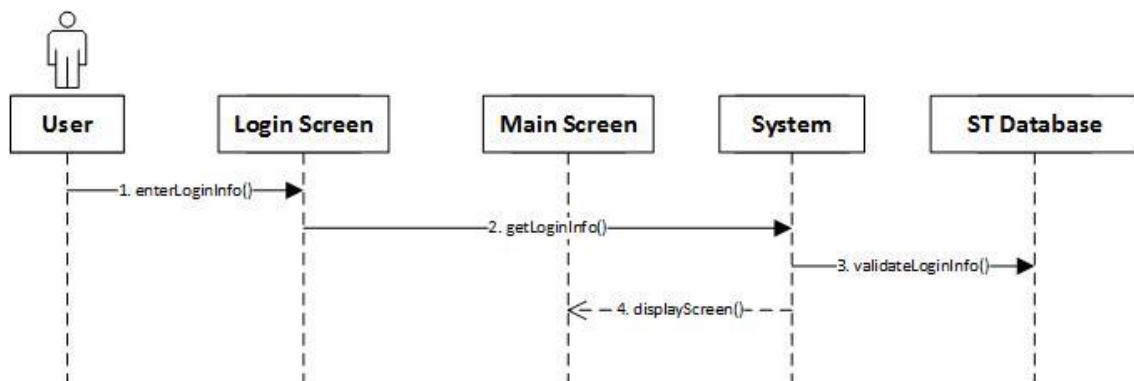
Figure 4.13 Sequence diagram of authentication

For the authentication module, first user need to enter the email and password, then the system will get the info and validate the info with database. After the validation is done, the user will bring to main screen which is user home page.
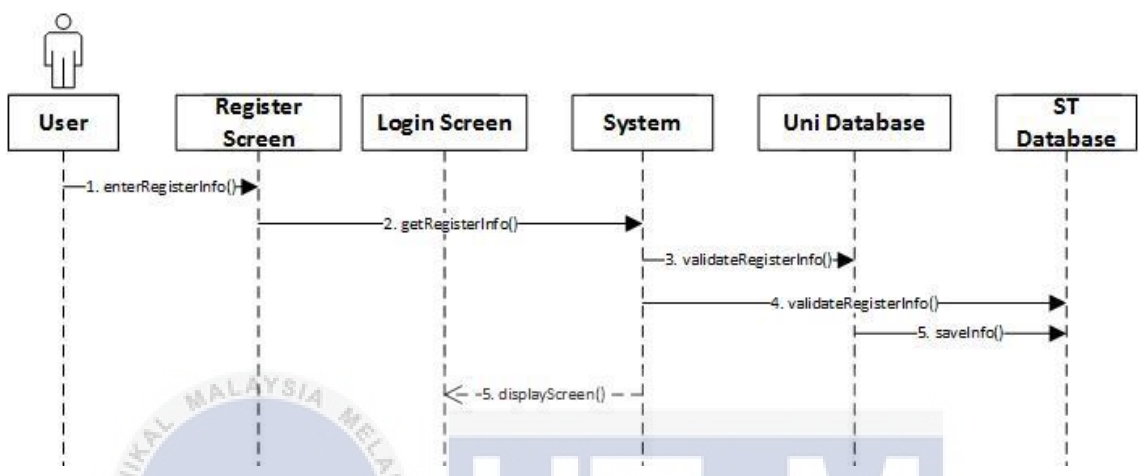
Figure 4.14 Sequence diagram of registration

For the registration, user need to insert the ID, email and password. Then, the system get the info and validate the ID with the University database, if the ID existed in University database, user's info is successfully save to Share Together database. Last, the system will display login page.
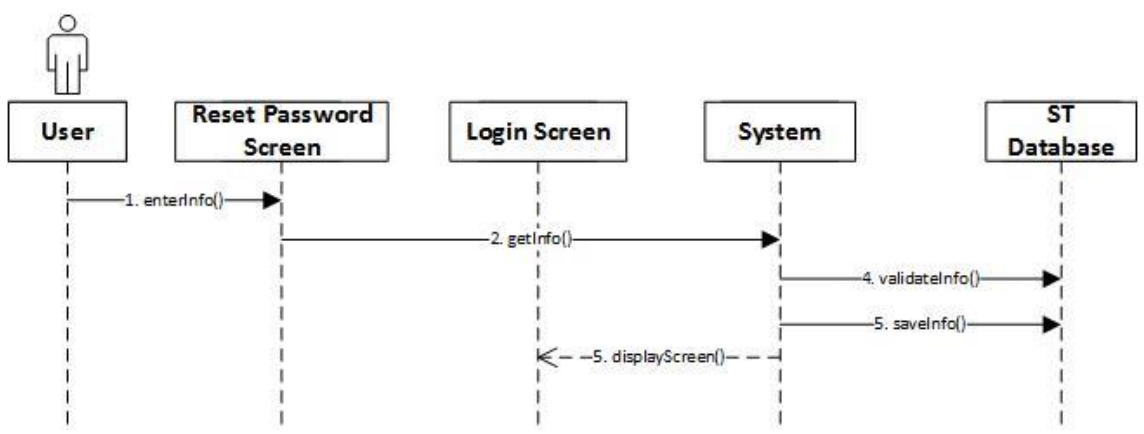
Figure 4.15 Sequence diagram of reset password

The reset password module, user need to enter new password and system will validate it. If the info is correct, system will save the new password and display to login page.
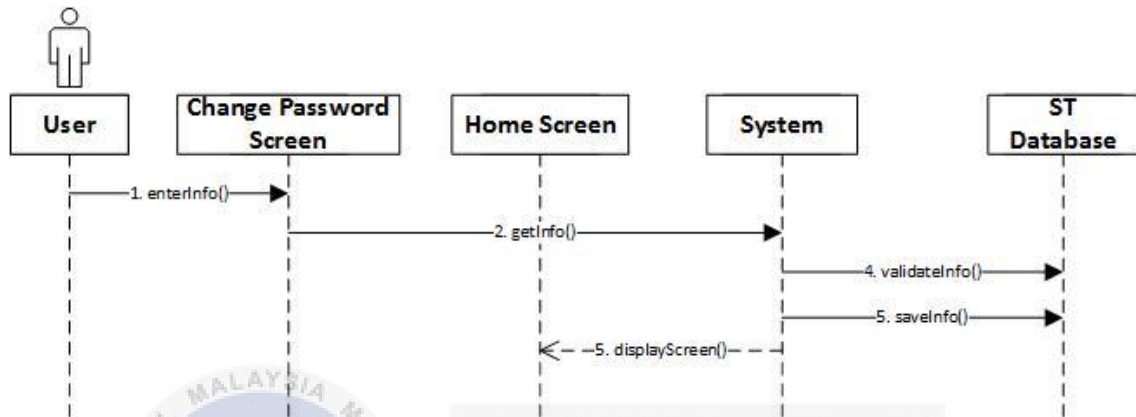
Figure 4.16 Sequence diagram of manage profile (change password)

The manage profile module contain 2 function. For the change password function, user need to enter the require info and wait for system validate and save it. System will display to home page if the process success.
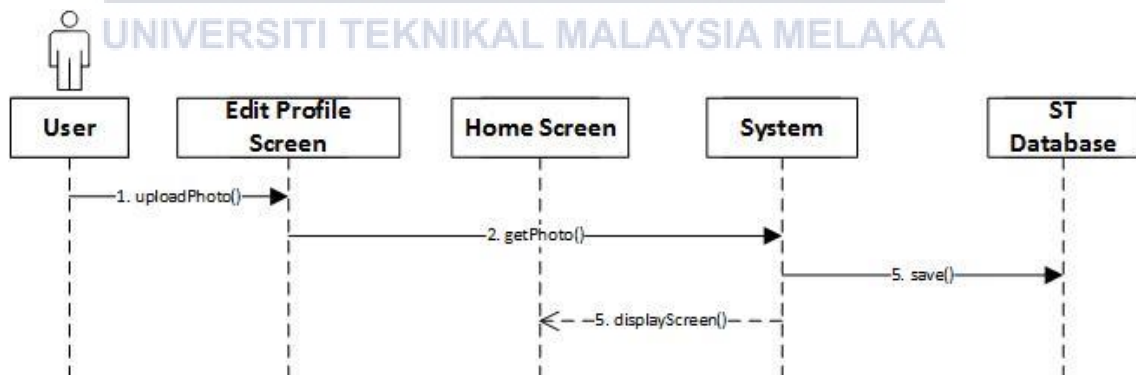
Figure 4.17 Sequence diagram of manage profileedit profile photo

The second function of the manage profile is edit profile photo. User need to upload a photo and then system will save it and display to home page.
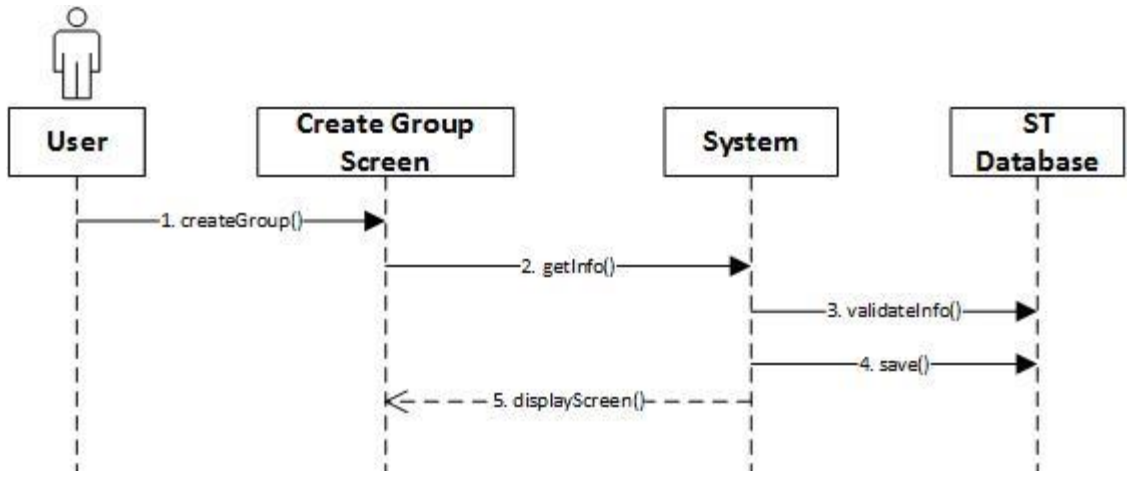
Figure 4.18 Sequence diagram of create group

For create group, user need to enter require info and system will validate it and save the info. At the end, system will display back to the create group page.
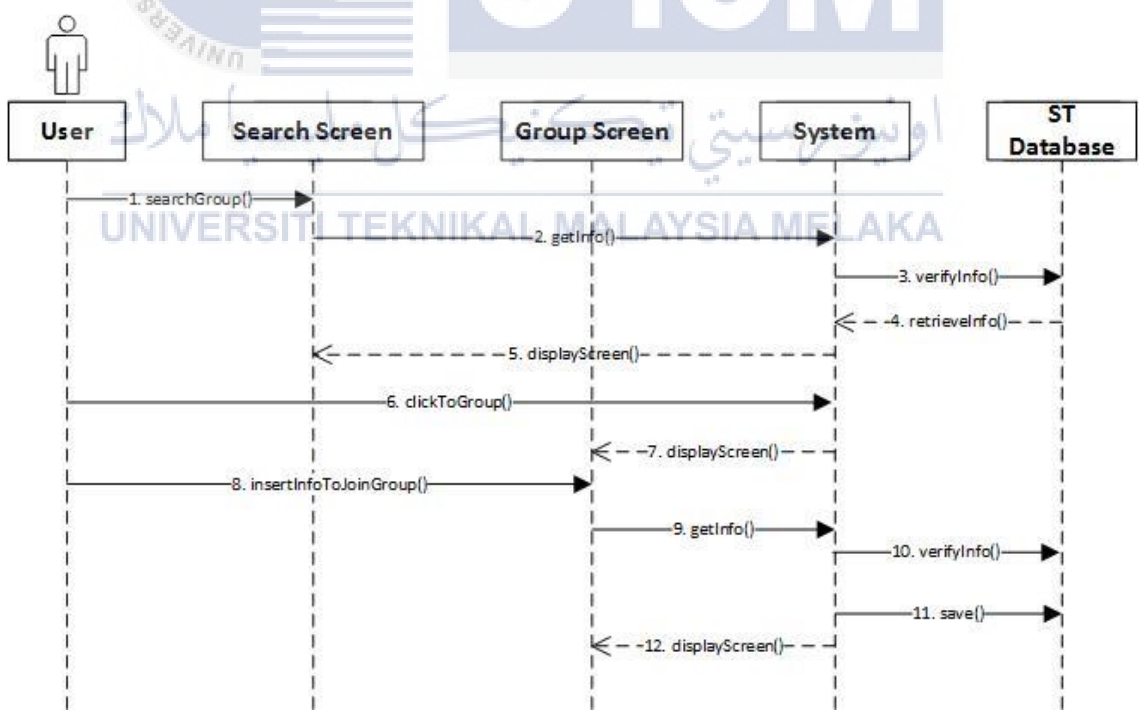
Figure 4.19 Sequence diagram of join group

For join group module, first user need to search a group and system will verify it and display the group info to the user. Then, user click onto the group and insert the info to join the group. System will verify and save it and back to the group page.
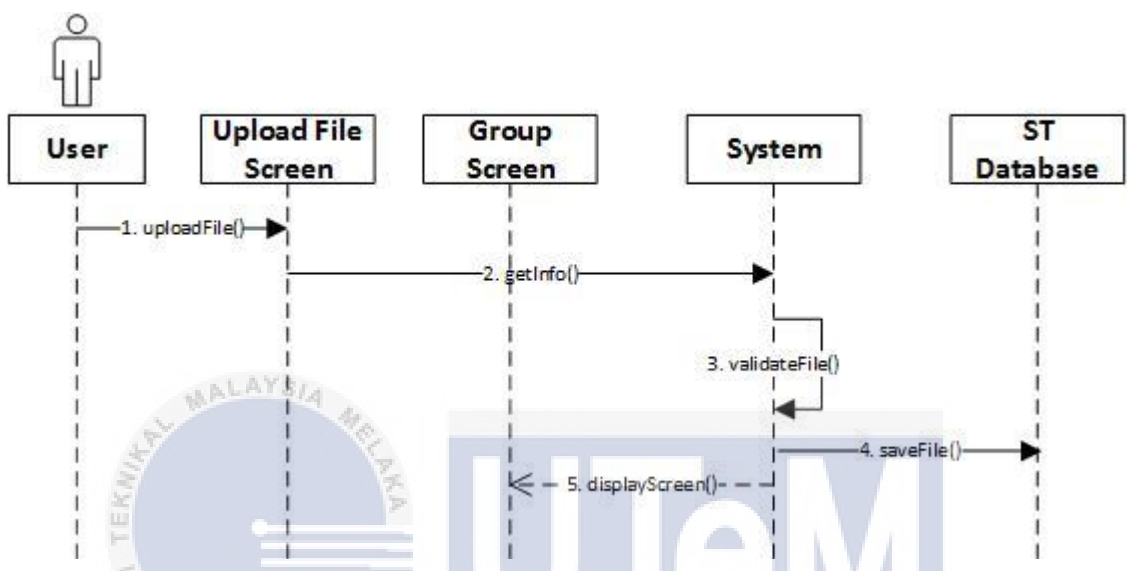
Figure 4.20 Sequence diagram of upload file

For upload file, user need to upload a file and insert the info of the file. Then, system will validate the file size and type, if it is success, database will save the file and system display back to group page.
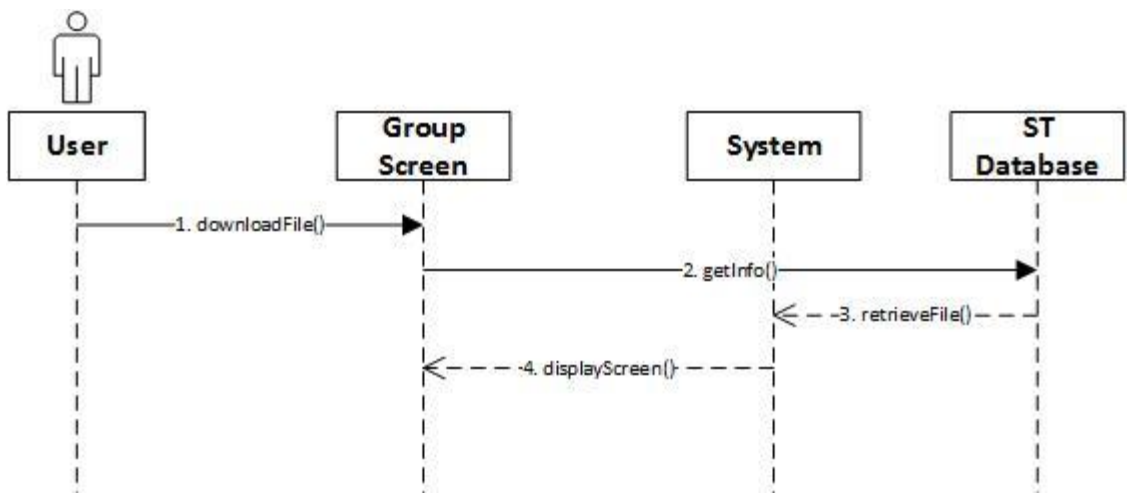
Figure 4.21 Sequence diagram of download file

For download file user only need to click on download button and if the process is success, system display back to group page.
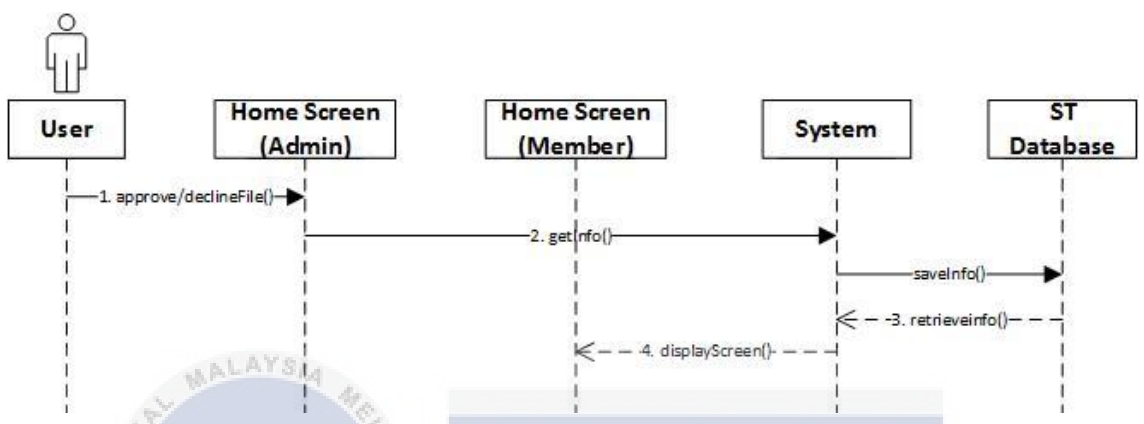
Figure 4.22 Sequence diagram of approve/decline file

For approve/decline file, only the admin of the group have the right to access to this function. User can choose to approve or decline the file and the system will save the info to database and at the end system display the save info to member.
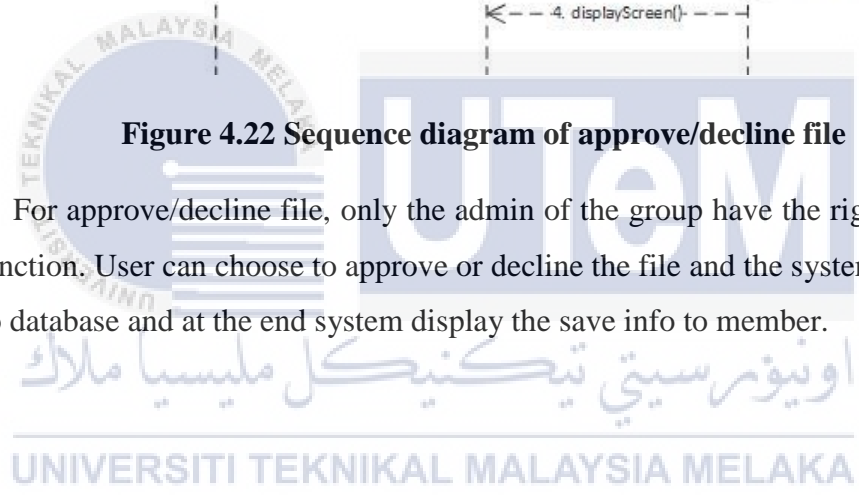
4.3.2 Physical Database Design

Table name: LOGIN

Description: This table contains the data that need to be used when user login to the system.

Table 4.10 Table login

Attribute Name	Description	Type	Required	Constraint	FK Reference Table

| email | User's email | varchar(50) | Yes | PK | |
| password | Password of user's account | varchar(255) | Yes | | |

Table name: USER

Description: This table contains all the data of a user.

Table 4.11 Table user

Attribute Name	Description	Type	Required	Constraint	FK Reference Table
userID	User identification number	varchar(15)	Yes	PK	
fullName	User's full name	varchar(50)	Yes		
faculty	User's faculty	varchar(10)	Yes		
position	User's position, either student or lecturer	varchar(15)	Yes		
userConfirm	The account activation of the user, whether it is not activated[0] or activated[1]	enum(0,1)	Yes		

confirmCode	A code that generated randomly for the account activation purpose	varchar(15)	Yes		
university	User's university	varchar(50)	Yes		
picPath	The directory path that store the user's profile photo	varchar(300)	Yes		
email	User's email	varchar(50)	Yes	FK	LOGIN

Table name: GROUP

Description: This table contains all the data of a group that created by user.

Table 4.12 Table group

Attribute Name	Description	Type	Required	Constraint	FK Reference Table
groupID	Group identification number	int(11)	Yes	PK	
groupName	The name of the group	varchar(60)	Yes		
groupStatus	The status of the group, either	enum(0,1)	Yes		

	closed[0] or public[1]				
groupKey	A code for closed group created by group admin	varchar(20)	No		

Table name: USER_GROUP

Description: This table is the bridge between table USER and table GROUP.

Table 4.13 Table user_group

Attribute Name	Description	Type	Required	Constraint	FK Reference Table
userGroupID	User Group identification number	int(11)	Yes	PK	
userID	User identification number	varchar(15)	Yes	PK, FK	USER
groupID	Group identification number	int(11)	Yes	PK, FK	GROUP
userGroupPosition	The position of the user in a group, either admin or member	varchar(15)	Yes		

Table name: FILE

Description: This table contains all the data of a file that uploaded by user.

Table 4.14 Table file

Attribute Name	Description	Type	Required	Constraint	FK Reference Table
fileID	File identification number	int(11)	Yes	PK	
fileName	The name of the file	varchar(60)	Yes		
fname	The original name of the file	varchar(300)	Yes		
filePath	The directory path that store the file	varchar(300)	Yes		
dateTime	Date and time the file uploaded	timestamp	Yes		
fileConfirm	The status of the file, whether it is pending[0], approved[1] or declined[2]	enum(0,1,2)	Yes		

fileDesc	The description of the file	varchar(300)	Yes		
remark	The remark for the declined file	varchar(300)	No		
appDecDate	The approved or declined date and time of the file	timestamp	No		
userGroupID	User_Group identification number	int(11)	Yes	FK	USER_GROUP

4.4. Conclusion

This chapter focuses on diagram to define the architecture of system. With these diagram, ambiguity can be eliminated. It is easier to implement the system if the system is design before implement since the developer will get the idea on what to do. The implementation of system will describe in the next chapter.

CHAPTER V

IMPLEMENTATION

5.1 Introduction

The previous chapter describe the design of the system which included all the high level design and detailed design. In this chapter, the discussion will focus on the implementation of the system which include software development environment setup, software configuration management and implementation status.

5.2 Software Development Environment Setup

The software development environment is an environment that build up the activities in the software development cycle, including configuration management and

project and team management. Therefore, the setup of software development environment of a project is important to ensure the system run smoothly.

Hardware that used to setup the environment is the laptop with the specification as below:

Table 5.1 Specification of laptop

Specification	Requirement
Windows Edition	Windows 8.1 Single Language
Processor	Intel®Core™ i5-4210U CPU @ 1.70GHz 2.40GHz
Installed memory (RAM)	8.00 GB
System Type	64-bit Operating System

Software that set up the development environment as below:

Table 5.2 Software requirement

Software/Resource	Requirement
PHP Engine	PHP Version 5.6.25 (included in WAMP)
Web Server	Apache Version 2.4.23 (included in WAMP)
Database Server	MySQL Version 5.7.14 (included in WAMP)
Text Editor	Atom
Front end Framework	Materialize

5.3 Software Configuration Management

Software configuration management is the activity that will apply throughout the whole software process. As the changes can appear anytime, thus the purpose of software configuration management is to identify and control the changes and also make sure the change is being properly implemented. In this section, the configuration environment setup and version control procedure will be discussed.

5.3.1 Configuration Environment Setup

In order to develop Share Together system on Windows operating system, there are several things need to configure. First is to download and install the latest WAMP installer package from http://www.wampserver.com/en/. In this package, it includes the PHP engine, Apache HTTP Server, and MySQL database server. This all-in-one package help user from install each of the component separately.

Next is to download Atom installer from https://atom.io/ and then install it. Atom is the text editor that can help user to manage and edit the codes more orderly.

Besides, Share Together system used Materialize as the front-end framework. In the website http://materializecss.com/getting-started.html, download the materialize zip file and then follow the instructions to setup the framework.

5.3.2 Version Control Procedure

The version control procedure of Share Together system is shown as below:

Table 5.3 Version control procedure

Version	Description
1.0	The initial version of the system contains user interface and connection to database.
2.0	The second version of the system contains the authentication function and profile management function.

3.0	The third version of the system contains the function that allow user to manage the group and file.
4.0	The fourth version of the system that has the restriction on the size and type of the file that upload to a group.
5.0	The fifth version which is also the final version of the system. Notification for the approved and declined file is added.

5.4 Implementation Status

There are 4 main modules in this system. The first module is authentication. The authentication module includes 2 submodules which are registration and reset password. Registration submodule is first developed. The registered user is will receive an email for the account activation purpose. After activated the account, user is able to login to the system. The reset password function is allow user to reset the password in case user forget the login password. The whole authentication module took 2 weeks to complete.

The next module is edit profile. In this module, there are change password and edit profile photo functions. User is able to change the password and choose a photo from pc library to set as profile photo. This module took a week to complete.

Manage group is the third module of the system. There are create group, search group, and join group in this module. User is allow to create a public group or secret group. Besides, user can search a group and then join it. If it is a secret group, a group key is needed in order to join the group. This module took 3 weeks to complete.

The last module is manage file. User is able to upload file to the group they joined. At the same time, user is allow to download the files that post in the group they joined. For admin of a group, they have the right to approve or decline the file that uploaded by a member. This module took the longest time to develop, which is 5 weeks.

The table below shows the implementation status of each module.

Table 5.4 Implementation status

No.	Module	Duration of complete (week)
1	Authentication	2
2	Edit Profile	1
3	Manage Group	3
4	Manage File	5

5.5 Conclusion

As a conclusion, this chapter give a clear view on how the development environment setup for Share Together system. It is important to have a proper configuration environment setup in order to make sure the development of the system going smoothly. Besides, version control procedure and implementation status are importance in providing a guide for future references.

CHAPTER VI

TESTING

6.1 Introduction

Testing phase is important in software development lifecycle because it is the process of evaluating a system whether it satisfies objectives of the system and user requirements or not. In order to complete the testing phase, test plan should be prepared and the test strategy also need to identify. After that, prepare test cases that included test data and expected outcomes. Testing results are needed to record and analyze for the improvement purpose.

6.2 Test Plan

In this section, test organization described personnel involved in the testing activities. Test environment is the description of the location of testing will be carried out and also the hardware used in the testing process. Lastly, test schedule defined the duration and cycle of the testing that are conducted.

6.2.1 Test Organization

The personnel that involved in the project are developer and users. As Share Together is design for education purpose, thus the users of the system are lecturers and students. Two lecturers and three students has been selected to test the system. Each personnel have their own responsibility in the testing phase.

Developer is responsible in preparing the test cases and also participating in the unit testing, integration testing and system testing. Besides, developer need to review the testing results and make necessary changes on source codes. For the users, they are responsible in executing the testing process and give the feedback.

6.2.2 Test Environment

All testers have carried out the testing process under same test environment. They are using laptop with Windows 8.1 Single Language 64 bit operating system. The browser that used to test the system is Google Chrome.

6.2.3 Test Schedule

The table below shows the test schedule for the project.

Table 6.1 Test schedule

Test Activity	Start Date	End Date
Unit Testing	15 July 2017	20 July 2017
Integration Testing	21 July 2017	25 July 2017
System Testing	25 July 2017	05 August 2017

6.3 Test Strategy

The test strategy that use to test the system are both white box and black box testing. For the white box testing, it only include developer. The white box testing are undergo during unit testing and integration testing. For black box testing, it include both developer and users. Black box testing are conducted after test cases are prepared.

6.3.1 Classes of tests

a) Unit Testing – Each components in the system are tested by the developer by checking the source codes of every function. It is important to validate that each of the units are perform well.

b) Integration Testing – After all the units of the system have been found to be performing well and error free, each of the individual units are integrated and

tested as a group. The purpose is to expose error in the interfaces and the interaction between the integrated units. This level of testing also include only developer.

c) System Testing – A complete and integrated system is tested by developer and users. Test cases are designed and the tester need to follow the instructions in order to conduct the testing. It is important to evaluate the system whether meet the requirements and objectives or not.

6.4. Test Design

In this section, the test description and test data will be documented.
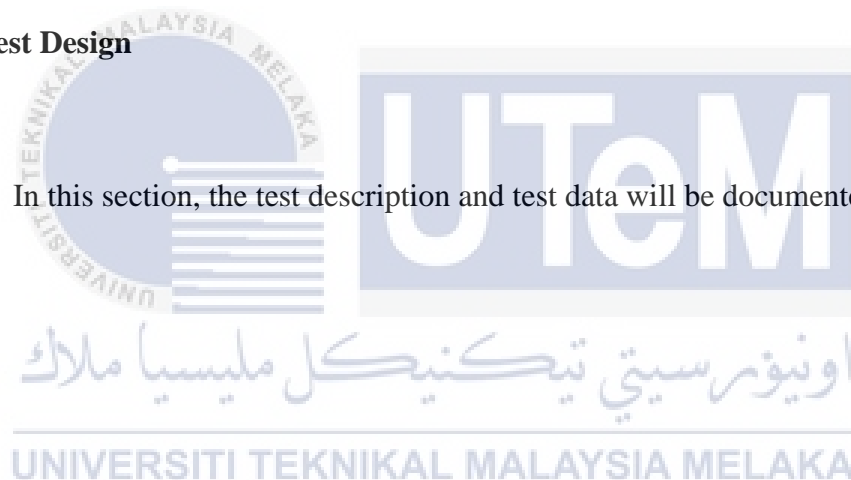
6.4.1 Test Description

Test description which included test case ID, test requirement, step, and expected result is designed as below.

Table 6.2 Authentication test cases

Test Case ID	Test Requirement	Steps	Expected Result
TC_01_01	Validate that user is not able to login with valid email and valid password if user not yet activate the account through email.	1. Insert test data. 2. Click login button.	User not able to login and system displayed error message.
TC_01_02	Validate that user is able to login with valid email and password.	1. Login to google mail (qiaohan0311@gmail.com) with password (123456) and activate the share together account with the link received. 2. Insert test data. 3. Click login button.	User successfully login to user main page.

TC_01_03	Validate that user is not able to login with valid email but invalid password.	1. Insert test data. 2. Click login button.	User not able to login and system displayed error message.
TC_01_04	Validate that user is not able to login with invalid email but valid password.	1. Insert test data. 2. Click login button.	User not able to login and system displayed error message.
TC_01_05	Validate that user is not able to login with either email or password is empty.	1. Insert test data. 2. Click login button.	User not able to login and system displayed error message.
TC_01_06	Validate that error message will be displayed if login with empty email and password fields.	1. Insert test data. 2. Click login button.	User not able to login and system displayed error message.

Table 6.3 Registration test cases

Test Case ID	Test Requirement	Steps	Expected Result
TC_02_01	Validate that user is able to register with valid ID, valid email and valid password.	1. Insert test data. 2. Click register button.	User successfully register to the system.
TC_02_02	Validate that user is not able to register with invalid ID, valid email and valid password.	1. Insert test data. 2. Click register button.	User not able to register and system displayed error message.
TC_02_03	Validate that user is not able to register with valid ID, invalid email and valid password.	1. Insert test data. 2. Click register button.	User not able to register and system displayed error message.
TC_02_04	Validate that user is not able to register with valid ID, valid email and invalid password length. (password length at least 6 character)	1. Insert test data. 2. Click register button.	User not able to register and system displayed error message.

TC_02_05	Validate that user is not able to register if one of the registration input field is empty.	1. Insert test data. 2. Click register button.	User not able to register and system displayed error message.
TC_02_06	Validate that error message will be displayed if register with empty all the fields.	1. Insert test data. 2. Click register button.	User not able to register and system displayed error message.

Table 6.4 Reset password test cases

Test Case ID	Test Requirement	Steps	Expected Result
TC_03_01	Validate that user is able to reset password with valid ID, and the new password is match with re-type new password.	1. Insert ID and click submit button. 2. Go to google mail (qiaohan0311@gmail.com) and click the link received. 3. Insert new password and retype it. 4. Click submit button.	User is successfully reset the password.

TC_03_02	Validate that user is not able to reset password if the ID is invalid.	1. Insert ID and click submit button.	User is not able to reset password and system displayed error message.
TC_03_03	Validate that user is not able to reset password if the user not yet activate the account through email.	1. Insert ID and click submit button.	User is not able to reset password and system displayed error message.
TC_03_04	Validate that user is not able to reset password with valid ID but the new password is not match with re-type new password.	1. Insert ID and click submit button. 2. Go to google mail (qiaohan0311@gmail.com) and click the link received. 3. Insert new password and retype it. 4. Click submit button.	User is not able to reset password and system displayed error message.

Table 6.5 Manage profile test cases

Test Case ID	Test Requirement	Steps	Expected Result

TC_04_01	Validate that user is able to edit the profile photo with a photo.	1. Choose the photo to upload and click upload button.	Profile photo is successfully changed.
TC_04_02	Validate that user is able to change the password with valid old password, and the new password is match with retype new password.	1. Insert data. 2. Click "Submit".	Password is successfully changed.
TC_04_03	Validate that user is not able to change the password with invalid old password, but the new password is match with retype new password.	1. Insert data. 2. Click "Submit".	Password is not able to change and an error message is displayed.
TC_04_04	Validate that user is not able to change the password with valid old password, but the new password is not match	1. Insert data. 2. Click "Submit".	Password is not able to change and an error message is displayed.

	with retype new password.		
TC_04_05	Validate that user is not able to change the password with valid old password, but empty new password and empty retype new password.	1. Insert data. 2. Click "Submit".	Password is not able to change and an error message is displayed.
TC_04_06	Validate that user is not able to change the password with empty old password, but new password is match with retype new password.	1. Insert data. 2. Click "Submit".	Password is not able to change and an error message is displayed.
TC_04_07	Validate that user is not able to change the password with empty old password, empty new password and empty retype new password.	1. Insert data. 2. Click "Submit".	Password is not able to change and an error message is displayed.

Table 6.6 Create group test cases

Test Case ID	Test Requirement	Steps	Expected Result
TC_05_01	Validate that user is able to create a public group with a valid group name and select a valid group type.	1. Insert data. 2. Click "Create".	User is successfully create a public group.
TC_05_02	Validate that user is able to create a closed group with a valid group name, valid group key and select a valid group type.	1. Insert data. 2. Click "Create".	User is successfully create a closed group.
TC_05_03	Validate that user is not able to create a public group with a valid group name but do not select the group type.	1. Insert data. 2. Click "Create".	User is not able to create a group and an error message displayed.

TC_05_04	Validate that user is not able to create a public group with an existing group name but select a valid group type.	1. Insert data. 2. Click "Create".	User is not able to create a group and an error message displayed.
TC_05_05	Validate that user is not able to create a public group with empty group name and empty group type.	1. Insert data. 2. Click "Create".	User is not able to create a group and an error message displayed.
TC_05_06	Validate that user is not able to create a closed group with a valid group name, valid group key, but do not select the group type.	1. Insert data. 2. Click "Create".	User is not able to create a group and an error message displayed.
TC_05_07	Validate that user is not able to create a closed group with a valid group name, and select a valid	1. Insert data. 2. Click "Create".	User is not able to create a group and an error message displayed.

	group type, but with empty group key.		
TC_05_08	Validate that a group admin is able to delete the group page.	1. Go to Database Design group. 2. Click Delete Group button. 3. Click OK button.	User is successfully delete the group.

Table 6.7 Join group test case

Test Case ID	Test Requirement	Steps	Expected Result
TC_06_01	Validate that user is able to search an existing group with a valid existing group name.	1. Insert data. 2. Click "Search".	User successfully search a group.
TC_06_02	Validate that user is able to join a public group.	1. Search the group with the given group name. 2. Click "Join" button.	User successfully join a public group.
TC_06_03	Validate that user is able to join a closed group with a valid group key.	1. Search the group with the given group name. 2. Click "Join" button.	User successfully join a closed group.

		3. Insert group key and click submit button.	
TC_06_04	Validate that user is not able to join a closed group with an invalid group key.	1. Search the group with the given group name. 2. Click "Join" button. 3. Insert group key and click submit button.	User is not able to join a closed group and an error message is displayed.
TC_06_05	Validate that a group member is able to unfollow a group.	1. Search the group with the given group name. 2. Click Unfollow Group button. 3. Click Ok button.	User is successfully unfollow the group.

Tabe 6.8 Upload file test cases

Test Case ID	Test Requirement	Steps	Expected Result
TC_07_01	Validate that user (group admin/member) is able to upload a file with a valid file type and valid	1. Go to Hubungan Etnik group. 2. Click Upload File button. 3. Choose the file. 4. Insert File Name.	User is successfully upload a file.

	file size, valid file name and valid file description.	5. Insert File Description. 6. Click Upload button.	
TC_07_02	Validate that user (group admin/member) is not able to upload a file with an invalid file type but valid file size, valid file name and valid file description.	1. Go to Hubungan Etnik group. 2. Click Upload File button. 3. Choose the file. 4. Insert File Name. 5. Insert File Description. 6. Click Upload button.	User is not able to upload a file and system display error message.
TC_07_03	Validate that user (group admin/member) is not able to upload a file with a valid file type but invalid file size, valid file name and valid file description.	1. Go to Hubungan Etnik group. 2. Click Upload File button. 3. Choose the file. 4. Insert File Name. 5. Insert File Description. 6. Click Upload button.	User is not able to upload a file and system display error message.
TC_07_04	Validate that user (group admin/member) is not able to upload a file with	1. Go to Hubungan Etnik group. 2. Click Upload File button. 3. Choose the file.	User is not able to upload a file and system display error message.

	valid file type and valid file size, empty file name but a valid file description.	4. Insert File Name. 5. Insert File Description. 6. Click Upload button.	
TC_07_05	Validate that user (group admin/member) is not able to upload a file with valid file type and valid file size, valid file name but empty file description.	1. Go to Hubungan Etnik group. 2. Click Upload File button. 3. Choose the file. 4. Insert File Name. 5. Insert File Description. 6. Click Upload button.	User is not able to upload a file and system display error message.
TC_07_06	Validate that user (group admin/member) is not able to upload a file with not select a file, empty file name and empty file description.	1. Go to Hubungan Etnik group. 2. Click Upload File button. 3. Choose the file. 4. Insert File Name. 5. Insert File Description. 6. Click Upload button.	User is not able to upload a file and system display error message.

Table 6.9 Download file test cases

Test Case ID	Test Requirement	Steps	Expected Result
TC_08_01	Validate that user (group admin/member) is able to download an uploaded file in a group.	1. Go to Titas group. 2. Click Download button.	User is successfully download an uploaded file.

Table 6.10 Approve/decline file test cases

Test Case ID	Test Requirement	Steps	Expected Result
TC_09_01	Validate that group admin is able to approve an uploaded file by a group member.	1. Go to Home page. 2. Click Requested tab. 3. Click Approve button.	User is successfully approved a file.
TC_09_02	Validate that group admin is able to decline an uploaded file by a group	1. Go to Home page. 2. Click Requested tab. 3. Click Decline button. 4. Insert the decline reason.	User is successfully declined a file.

| TC_09_03 | Validate that group admin is not able to decline an uploaded file by a group member with empty decline reason. | 1. Go to Home page.
2. Click Requested tab.
3. Click Decline button.
4. Insert the decline reason.
5. Click Submit button. | User is not able to decline a file and system display error message. |

(Above continues from previous page) ... member with a decline reason. | 5. Click Submit button. | |

6.4.2 Test Data

The test data which are going to use in the testing process have been tabulated as below.

Table 6.11 Authentication test data

Test Case ID	Test Requirement	Steps	Test Data	Expected Result

TC_01_01	Validate that user is not able to login with valid email and valid password if user not yet activate the account through email.	1. Insert test data. 2. Click login button.	Email: "qiaohan0311@gmail.com" Password: "123456"	User not able to login and system displayed error message.
TC_01_02	Validate that user is able to login with valid email and password.	1. Login to google mail (qiaohan0311@gmail.com) with password (123456) and activate the share together account with the link received. 2. Insert test data. 3. Click login button.	Email: "qiaohan0311@gmail.com" Password: "123456"	User successfully login to user main page.
TC_01_03	Validate that user is not able to login with valid email but invalid password.	1. Insert test data. 2. Click login button.	Email: "qiaohan0311@gmail.com" Password: "12345678"	User not able to login and system displayed error message.

TC_01_04	Validate that user is not able to login with invalid email but valid password.	1. Insert test data. 2. Click login button.	Email: "qiaohan031@gmail.com" Password: "123456"	User not able to login and system displayed error message.
TC_01_05	Validate that user is not able to login with either email or password is empty.	1. Insert test data. 2. Click login button.	Email: "qiaohan0311@gmail.com" Password: " "	User not able to login and system displayed error message.
TC_01_06	Validate that error message will be displayed if login with empty email and password fields.	1. Insert test data. 2. Click login button.	Email: " " Password: " "	User not able to login and system displayed error message.

Table 6.12 Registration test data

Test Case ID	Test Requirement	Steps	Test Data	Expected Result
TC_02_01	Validate that user is able to register with valid ID,	1. Insert test data. 2. Click register button.	ID: "B031410116"	User successfully register to the system.

	valid email and valid password.		Email: "qiaohan0311@gmail.com" Email Conformation: "qiaohan0311@gmail.com" Password: "123456" Password Conformation: "123456"	
TC_02_02	Validate that user is not able to register with invalid ID, valid email and valid password.	1. Insert test data. 2. Click register button.	ID: "B012345678" Email: "qiaohan0311@gmail.com" Email Conformation: "qiaohan0311@gmail.com" Password: 123456" Password Conformation: "123456"	User not able to register and system displayed error message.
TC_02_03	Validate that user is not able to register with valid ID, invalid email and valid password.	1. Insert test data. 2. Click register button.	ID: "B031410116" Email: "qiaohan0311" Email Conformation: "qiaohan0311@gmail.com" Password: "123456"	User not able to register and system displayed error message.

			Password Conformation: "123456"	
TC_02_04	Validate that user is not able to register with valid ID, valid email and invalid password length. (password length at least 6 character)	1. Insert test data. 2. Click register button.	ID: "B031410116" Email: "qiaohan0311" Email Conformation: "qiaohan0311" Password: "123" Password Conformation: "123"	User not able to register and system displayed error message.
TC_02_05	Validate that user is not able to register if one of the registration input field is empty.	1. Insert test data. 2. Click register button.	ID: "B031410116" Email: "qiaohan0311@gmail.com" Email Conformation: " " Password: "123456" Password Conformation: "123456"	User not able to register and system displayed error message.
TC_02_06	Validate that error message will be displayed if register with empty all the fields.	1. Insert test data. 2. Click register button.	ID: " " Email: " " Email Conformation: " " Password: " "	User not able to register and system displayed error message.

			Password Conformation: " "	

Table 6.13 Reset password test data

Test Case ID	Test Requirement	Steps	Test Data	Expected Result
TC_03_01	Validate that user is able to reset password with valid ID, and the new password is match with re-type new password.	1. Insert ID and click submit button. 2. Go to google mail (qiaohan0311@gmail.com) and click the link received. 3. Insert new password and retype it. 4. Click submit button.	ID: "B031410116" Password: "1234567" Re-type Password: "1234567"	User is successfully reset the password.
TC_03_02	Validate that user is not able to reset password if the ID is invalid.	1. Insert ID and click submit button.	ID: "B0314102567"	User is not able to reset password and system displayed error message.
TC_03_03	Validate that user is not able to reset password if	1. Insert ID and click submit button.	ID: "B031410111"	User is not able to reset password and system

	the user not yet activate the account through email.			displayed error message.
TC_03_04	Validate that user is not able to reset password with valid ID but the new password is not match with re-type new password.	1. Insert ID and click submit button. 2. Go to google mail (qiaohan0311@gmail.com) and click the link received. 3. Insert new password and retype it. 4. Click submit button.	ID: "B031410116" Password: "654321" Re-type Password: "123456"	User is not able to reset password and system displayed error message.

Table 6.14 Manage profile test data

Test Case ID	Test Requirement	Steps	Test Data	Expected Result
TC_04_01	Validate that user is able to edit the profile photo with a photo.	1. Choose the photo to upload and click upload button.	Photo location: D:\fyp\photo\profile1.png	Profile photo is successfully changed.

TC_04_02	Validate that user is able to change the password with valid old password, and the new password is match with retype new password.	1. Insert data. 2. Click "Submit".	Old Password: "1234567" New Password: "123456" Re-type New Password: "123456"	Password is successfully changed.
TC_04_03	Validate that user is not able to change the password with invalid old password, but the new password is match with retype new password.	1. Insert data. 2. Click "Submit".	Old Password: "12345678" New Password: "654321" Re-type New Password: "654321"	Password is not able to change and an error message is displayed.
TC_04_04	Validate that user is not able to change the password with valid old password, but the new password is not match with retype new password.	1. Insert data. 2. Click "Submit".	Old Password: "123456" New Password: "258999" Re-type New Password: "259999"	Password is not able to change and an error message is displayed.

TC_04_05	Validate that user is not able to change the password with valid old password, but empty new password and empty retype new password.	1. Insert data. 2. Click "Submit".	Old Password: "123456" New Password: " " Re-type New Password: " "	Password is not able to change and an error message is displayed.
TC_04_06	Validate that user is not able to change the password with empty old password, but new password is match with retype new password.	1. Insert data. 2. Click "Submit".	Old Password: " " New Password: "654321" Re-type New Password: "654321"	Password is not able to change and an error message is displayed.
TC_04_07	Validate that user is not able to change the password with empty old password, empty new password and empty retype new password.	1. Insert data. 2. Click "Submit".	Old Password: " " New Password: " " Re-type New Password: " "	Password is not able to change and an error message is displayed.

Table 6.15 Create group test data

Test Case ID	Test Requirement	Steps	Test Data	Expected Result
TC_05_01	Validate that user is able to create a public group with a valid group name and select a valid group type.	1. Insert data. 2. Click "Create".	Group Name: "Database Design" Group Status: "Public"	User is successfully create a public group.
TC_05_02	Validate that user is able to create a closed group with a valid group name, valid group key and select a valid group type.	1. Insert data. 2. Click "Create".	Group Name: "Titas" Group Status: "Closed" Group Key: "titas2017"	User is successfully create a closed group.
TC_05_03	Validate that user is not able to create a public group with a valid group name but do not select the group type.	1. Insert data. 2. Click "Create".	Group Name: "English" Group Status: " "	User is not able to create a group and an error message displayed.
TC_05_04	Validate that user is not able to create a public group with an existing	1. Insert data. 2. Click "Create".	Group Name: "Database Design" Group Status: "Public"	User is not able to create a group and an error message displayed.

	group name but select a valid group type.			
TC_05_05	Validate that user is not able to create a public group with empty group name and empty group type.	1. Insert data. 2. Click "Create".	Group Name: " " Group Status: " "	User is not able to create a group and an error message displayed.
TC_05_06	Validate that user is not able to create a closed group with a valid group name, valid group key, but do not select the group type.	1. Insert data. 2. Click "Create".	Group Name: "History" Group Status: " " Group Key: "titas2017"	User is not able to create a group and an error message displayed.
TC_05_07	Validate that user is not able to create a closed group with a valid group name, and select a valid group type, but with empty group key.	1. Insert data. 2. Click "Create".	Group Name: "History" Group Status: "Closed" Group Key: " "	User is not able to create a group and an error message displayed.

TC_05_08	Validate that a group admin is able to delete the group page.	1. Go to Database Design group. 2. Click Delete Group button. 3. Click OK button.	none	User is successfully delete the group.

Table 6.16 Join group test data

Test Case ID	Test Requirement	Steps	Test Data	Expected Result
TC_06_01	Validate that user is able to search an existing group with a valid existing group name.	1. Insert data. 2. Click "Search".	Group Name: Titas	User successfully search a group.
TC_06_02	Validate that user is able to join a public group.	1. Search the group with the given group name. 2. Click "Join" button.	Group Name: " Hubungan Etnik"	User successfully join a public group.
TC_06_03	Validate that user is able to join a closed group with a valid group key.	1. Search the group with the given group name. 2. Click "Join" button.	Group Name: "Titas" Group Key: "titas2017"	User successfully join a closed group.

		3. Insert group key and click submit button.		
TC_06_04	Validate that user is not able to join a closed group with an invalid group key.	1. Search the group with the given group name. 2. Click "Join" button. 3. Insert group key and click submit button.	Group Name: "Business" Group Key: "1234"	User is not able to join a closed group and an error message is displayed.
TC_06_05	Validate that a group member is able to unfollow a group.	1. Search the group with the given group name. 2. Click Unfollow Group button. 3. Click Ok button.	Group Name: "Titas"	User is successfully unfollow the group.

Table 6.17 Upload file test data

Test Case ID	Test Requirement	Steps	Test Data	Expected Result
TC_07_01	Validate that user (group admin/member) is able to upload a file with a valid	1. Go to Hubungan Etnik group.	File location: D:\fyp\file\hebab1.pdf (1,274KB)	User is successfully upload a file.

		2. Click Upload File button. 3. Choose the file. 4. Insert File Name. 5. Insert File Description. 6. Click Upload button.	File Name: "Hubungan Etnik Bab 1" File Description: "Pengenalan Hubungan Etnik"	
	file type and valid file size, valid file name and valid file description.			
TC_07_02	Validate that user (group admin/member) is not able to upload a file with an invalid file type but valid file size, valid file name and valid file description.	1. Go to Hubungan Etnik group. 2. Click Upload File button. 3. Choose the file. 4. Insert File Name. 5. Insert File Description. 6. Click Upload button.	File location: D:\fyp\file\testtype.php (13KB) File Name: "Hubungan Etnik Bab 1" File Description: "Pengenalan Hubungan Etnik"	User is not able to upload a file and system display error message.
TC_07_03	Validate that user (group admin/member) is not able to upload a file with a valid file type but invalid file size, valid file name and valid file description.	1. Go to Hubungan Etnik group. 2. Click Upload File button. 3. Choose the file. 4. Insert File Name.	File location: D:\fyp\file\testsize.pdf (8,855KB) File Name: "Hubungan Etnik Bab 1"	User is not able to upload a file and system display error message.

		5. Insert File Description. 6. Click Upload button.	File Description: "Pengenalan Hubungan Etnik"	
TC_07_04	Validate that user (group admin/member) is not able to upload a file with valid file type and valid file size, empty file name but a valid file description.	1. Go to Hubungan Etnik group. 2. Click Upload File button. 3. Choose the file. 4. Insert File Name. 5. Insert File Description. 6. Click Upload button.	File location: D:\fyp\file\bungaraya.jpg (1,274KB) File Name: " " File Description: "Gambar Bunga Raya"	User is not able to upload a file and system display error message.
TC_07_05	Validate that user (group admin/member) is not able to upload a file with valid file type and valid file size, valid file name but empty file description.	1. Go to Hubungan Etnik group. 2. Click Upload File button. 3. Choose the file. 4. Insert File Name. 5. Insert File Description. 6. Click Upload button.	File location: D:\fyp\file\passyear.docx (151KB) File Name: "Pass Year Question" File Description: " "	User is not able to upload a file and system display error message.

| TC_07_06 | Validate that user (group admin/member) is not able to upload a file with not select a file, empty file name and empty file description. | 1. Go to Hubungan Etnik group.
2. Click Upload File button.
3. Choose the file.
4. Insert File Name.
5. Insert File Description.
6. Click Upload button. | File location: none
File Name: " "
File Description: " " | User is not able to upload a file and system display error message. |

Login account:

Email – siti123@gmail.com, password - 1234567

Table 6.18 Download file test data

Test Case ID	Test Requirement	Steps	Test Data	Expected Result
TC_08_01	Validate that user (group admin/member) is able to download an uploaded file in a group.	1. Go to Titas group. 2. Click Download button.	Target file name: Ulasan Video	User is successfully download an uploaded file.

			Target file description: Contoh terbaik bagi ulasan video	

Table 6.19 Approve/Decline file test data

Test Case ID	Test Requirement	Steps	Test Data	Expected Result
TC_09_01	Validate that group admin is able to approve an uploaded file by a group member.	1. Go to Home page. 2. Click Requested tab. 3. Click Approve button.	Target file name: Resume Target file description: Sample resume	User is successfully approved a file.
TC_09_02	Validate that group admin is able to decline an uploaded file by a group member with a decline reason.	1. Go to Home page. 2. Click Requested tab. 3. Click Decline button. 4. Insert the decline reason. 5. Click Submit button.	Target file name: Chapter 4 Target file description: Chapter 4 Integration Decline reason: "not related file"	User is successfully declined a file.

TC_09_03	Validate that group admin is not able to decline an uploaded file by a group member with empty decline reason.	1. Go to Home page. 2. Click Requested tab. 3. Click Decline button. 4. Insert the decline reason. 5. Click Submit button.	Target file name: Exam Tips Target file description: exam tips details Decline reason: " "	User is not able to decline a file and system display error message.

6.5. Test Results and Analysis

The testing results is collected as below.

Table 6.20 Authentication test result

Test Case ID	Test Requirement	Expected Result	Actual Result	Test Status (P/F)
TC_01_01	Validate that user is not able to login with valid email and valid password if user not yet activate the account through email.	User not able to login and system displayed error message.	User not able to login and system displayed error message.	P
TC_01_02	Validate that user is able to login with valid email and password.	User successfully login to user main page.	User successfully login to user main page.	P
TC_01_03	Validate that user is not able to login with valid email but invalid password.	User not able to login and system displayed error message.	User not able to login and system displayed error message.	P
TC_01_04	Validate that user is not able to login with invalid email but valid password.	User not able to login and system displayed error message.	User not able to login and system displayed error message.	P
TC_01_05	Validate that user is not able to login with either email or password is empty.	User not able to login and system displayed error message.	User not able to login and system displayed error message.	P

TC_01_06	Validate that error message will be displayed if login with empty email and password fields.	User not able to login and system displayed error message.	User not able to login and system displayed error message.	P

Table 6.21 Registration test result

Test Case ID	Test Requirement	Expected Result	Actual Result	Test Status (P/F)
TC_02_01	Validate that user is able to register with valid ID, valid email and valid password.	User successfully register to the system.	User successfully register to the system.	P
TC_02_02	Validate that user is not able to register with invalid ID, valid email and valid password.	User not able to register and system displayed error message.	User not able to register and system displayed error message.	P
TC_02_03	Validate that user is not able to register with valid ID, invalid email and valid password.	User not able to register and system displayed error message.	User not able to register and system displayed error message.	P
TC_02_04	Validate that user is not able to register with valid ID, valid email and invalid password length.	User not able to register and system displayed error message.	User not able to register and system displayed error message.	P

	(password length at least 6 character)			
TC_02_05	Validate that user is not able to register if one of the registration input field is empty.	User not able to register and system displayed error message.	User not able to register and system displayed error message.	P
TC_02_06	Validate that error message will be displayed if register with empty all the fields.	User not able to register and system displayed error message.	User not able to register and system displayed error message.	P

Table 6.22 Reset password test result

Test Case ID	Test Requirement	Expected Result	Actual Result	Test Status (P/F)
TC_03_01	Validate that user is able to reset password with valid ID, and the new password is match with re-type new password.	User is successfully reset the password.	User is successfully reset the password.	P
TC_03_02	Validate that user is not able to reset password if the ID is invalid.	User is not able to reset password and system displayed error message.	User is not able to reset password and system displayed error message.	P

| TC_03_03 | Validate that user is not able to reset password if the user not yet activate the account through email. | User is not able to reset password and system displayed error message. | User is not able to reset password and system displayed error message. | P |
| TC_03_04 | Validate that user is not able to reset password with valid ID but the new password is not match with re-type new password. | User is not able to reset password and system displayed error message. | User is not able to reset password and system displayed error message. | P |

Table 6.23 Manage profile test result

Test Case ID	Test Requirement	Expected Result	Actual Result	Test Status (P/F)
TC_04_01	Validate that user is able to edit the profile photo with a photo.	Profile photo is successfully changed.	Profile photo is successfully changed.	P
TC_04_02	Validate that user is able to change the password with valid old password, and the new password is match with retype new password.	Password is successfully changed.	Password is successfully changed.	P
TC_04_03	Validate that user is not able to change the	Password is not able to change and	Password is not able to change	P

	password with invalid old password, but the new password is match with retype new password.	an error message is displayed.	and an error message is displayed.	
TC_04_04	Validate that user is not able to change the password with valid old password, but the new password is not match with retype new password.	Password is not able to change and an error message is displayed.	Password is not able to change and an error message is displayed.	P
TC_04_05	Validate that user is not able to change the password with valid old password, but empty new password and empty retype new password.	Password is not able to change and an error message is displayed.	Password is not able to change and an error message is displayed.	P
TC_04_06	Validate that user is not able to change the password with empty old password, but new password is match with retype new password.	Password is not able to change and an error message is displayed.	Password is not able to change and an error message is displayed	P
TC_04_07	Validate that user is not able to change the password with empty old password, empty new password and	Password is not able to change and an error message is displayed.	Password is not able to change and an error message is displayed.	P

| | empty retype new password. | | | |

Table 6.24 Create group test result

Test Case ID	Test Requirement	Expected Result	Actual Result	Test Status (P/F)
TC_05_01	Validate that user is able to create a public group with a valid group name and select a valid group type.	User is successfully create a public group.	User is successfully create a public group.	P
TC_05_02	Validate that user is able to create a closed group with a valid group name, valid group key and select a valid group type.	User is successfully create a closed group.	User is successfully create a closed group.	P
TC_05_03	Validate that user is not able to create a public group with a valid group name but do not select the group type.	User is not able to create a group and an error message displayed.	User is not able to create a group and an error message displayed.	P
TC_05_04	Validate that user is not able to create a public group with an existing group name but select a valid group type.	User is not able to create a group and an error message displayed.	User is not able to create a group and an error message displayed.	P

TC_05_05	Validate that user is not able to create a public group with empty group name and empty group type.	User is not able to create a group and an error message displayed.	User is not able to create a group and an error message displayed.	P
TC_05_06	Validate that user is not able to create a closed group with a valid group name, valid group key, but do not select the group type.	User is not able to create a group and an error message displayed.	User is not able to create a group and an error message displayed.	P
TC_05_07	Validate that user is not able to create a closed group with a valid group name, and select a valid group type, but with empty group key.	User is not able to create a group and an error message displayed.	User is not able to create a group and an error message displayed.	P
TC_05_08	Validate that a group admin is able to delete the group page.	User is successfully delete the group.	User is successfully delete the group.	P

Table 6.25 Join group test result

Test Case ID	Test Requirement	Expected Result	Actual Result	Test Status (P/F)
TC_06_01	Validate that user is able to search an existing group with a	User successfully search a group.	User successfully search a group.	P

Test Case ID	Test Requirement	Expected Result	Actual Result	Test Status (P/F)
	valid existing group name.			
TC_06_02	Validate that user is able to join a public group.	User successfully join a public group.	User successfully join a public group.	P
TC_06_03	Validate that user is able to join a closed group with a valid group key.	User successfully join a closed group.	User successfully join a closed group.	P
TC_06_04	Validate that user is not able to join a closed group with an invalid group key.	User is not able to join a closed group and an error message is displayed.	User is not able to join a closed group and an error message is displayed.	P
TC_06_05	Validate that a group member is able to unfollow a group.	User is successfully unfollow the group.	User is successfully unfollow the group.	P

Table 6.26 Upload file test result

Test Case ID	Test Requirement	Expected Result	Actual Result	Test Status (P/F)
TC_07_01	Validate that user (group admin/member) is able to upload a file with a valid file type and valid file size,	User is successfully upload a file.	User is successfully upload a file.	P

	valid file name and valid file description.			
TC_07_02	Validate that user (group admin/member) is not able to upload a file with an invalid file type but valid file size, valid file name and valid file description.	User is not able to upload a file and system display error message.	User is not able to upload a file and system display error message.	P
TC_07_03	Validate that user (group admin/member) is not able to upload a file with a valid file type but invalid file size, valid file name and valid file description.	User is not able to upload a file and system display error message.	User is not able to upload a file and system display error message.	P
TC_07_04	Validate that user (group admin/member) is not able to upload a file with valid file type and valid file size, empty file name but a valid file description.	User is not able to upload a file and system display error message.	User is not able to upload a file and system display error message.	P
TC_07_05	Validate that user (group admin/member) is not able to upload a file with valid file type and	User is not able to upload a file and system display error message.	User is not able to upload a file and system display error message.	P

	valid file size, valid file name but empty file description.			
TC_07_06	Validate that user (group admin/member) is not able to upload a file with not select a file, empty file name and empty file description.	User is not able to upload a file and system display error message.	User is not able to upload a file and system display error message.	P

Table 6.27 Download file test result

Test Case ID	Test Requirement	Expected Result	Actual Result	Test Status (P/F)
TC_08_01	Validate that user (group admin/member) is able to download an uploaded file in a group.	User is successfully download an uploaded file.	User is successfully download an uploaded file.	P

Table 6.28 Approve/Decline file tets result

Test Case ID	Test Requirement	Expected Result	Actual Result	Test Status (P/F)
TC_09_01	Validate that group admin is able to approve	User is successfully approved a file.	User is successfully	P

|				
	an uploaded file by a group member.		approved a file.	
TC_09_02	Validate that group admin is able to decline an uploaded file by a group member with a decline reason.	User is successfully declined a file.	User is successfully declined a file.	P
TC_09_03	Validate that group admin is not able to decline an uploaded file by a group member with empty decline reason.	User is not able to decline a file and system display error message.	User is not able to decline a file and system display error message.	P
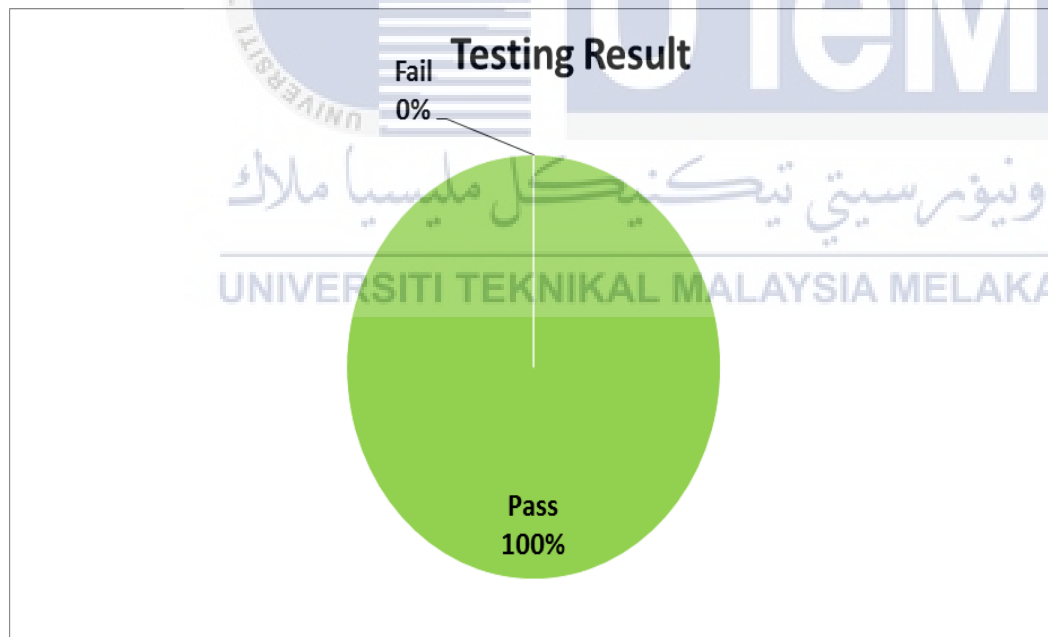
Figure 6.1 Testing result

Table 6.29 Testing Result

No. of test cases	Testing results (pass vs. fail)
46	100 % pass

In the testing process, a total of 46 test requirements and 46 test cases for Share Together System is created. After conducted the system test, the testing results shows of 100% pass, which means all of 46 test cases were executed smoothly. All of the actual results of the test cases are same as the corresponding expected results.

Although the testing results shows 100% pass, but there is small error occur to the interface of decline file. However, the error did not affect the result of TC_09_02 and TC_09_03. This error maybe due to the Javascript API of that interface module.

6.6. Conclusion

This chapter focuses on the testing activities which are creating test plan and test cases, executing test cases and performing functional testing. The analyzed results are included in this chapter. The testing has revealed some defects in the application which helped the application to be improved by working on the defects that have been detected.

CHAPTER VII

CONCLUSION

7.1 Introduction

This chapter will make an overall conclusion of the project. The observation on the weaknesses and strengths of the project will be discussed. Besides, the way to enhance the system also will be suggested.

7.2 Observation on Weaknesses and Strengths

Throughout the system development, there are some strengths and weaknesses can be found on Share Together system. Share Together provides a platform for student

and lecturer to share their teaching and learning materials. It is a platform only for student and lecturer and only for academic purpose. Student and lecturer can get and download the teaching and learning materials from the system. It is convenient for both lecturer and student as they no need to register and login into many social network site to check and get the teaching and learning materials. With the stated strength, we can say that the first objective of the project is achieved which the objective is to provide a platform for students and lecturers to share teaching and learning materials.

Besides, this system allows student and lecturer to create group. There are 2 type of groups which are public group and closed group. User can create a public group to share the information to whoever of the system. In the meanwhile, user is allow to create a closed group with a unique group key. Thus, only the user know the group key can join the group to share and 'enjoy' the content in the group. Moreover, user can unfollow a group when they found that they are not interested with the content of the group anymore. The admin of the group also has the right to delete the group maybe at the end of semester of their studies. From the view above, we know that the second objective (to allow students and lecturers to have their own groups for academic purposes) is achieved.

In addition, this system is very safe to use. This is because only the student ID or lecturer ID that existed in the university database can register to the system. As mentioned before, only student and lecturer are able to access to the system. Besides, the file that uploaded by a group member is not able to directly post on the group wall. The file will be pending for admin approval before post in the group. Admin has the right to decline the file if the content is not appropriate or the content is duplicate or not related to the group. Thus, the third objective of the system which is to improve security by authorizing the identity of students and lecturers and filtering the shared contents is achieved also.

Moreover, Share Together is a user friendly system which has simple interface design. This can help user to understand how to access it faster and easier. Besides, it is also mobile friendly system. The size of the page is responsive according to the size of the screen.

However, there are weaknesses on this system. First, Share Together is not develop in mobile application. It is only a web based system. Although it is mobile

friendly, but it is not as convenience as a mobile application. If it is developed with both mobile and web application, user can access the system anywhere and anytime as their preference. This is because some users like to access the system in a large screen (PC) and some users like to access the system in small screen (mobile).

The other weakness of the system is do not have chatting function. The lacking of the chatting function make students and lecturers are not able to have discussion on the content of the group. This weakness also decrease the connection between students and lecturers.

7.3 Propositions for Improvement

Based on the weaknesses stated on section 7.2, it is clear about the parts of the system that need to be improved. The first weakness of the system is do not have mobile application. As the mobile phone is so common today, the implementation of this system to mobile application will bring more benefit to users. By having mobile application, users can download the content of the group to their phone and able to view the downloaded content all the time.

The second weakness is there is no chatting function in the system. With adding this function, users are able to make a discussion on the system. Students can ask opinion from lecturers through the system. As a result, the connection between lecturers and students will become closer and students get the info from lecturers more easily.

7.4 Project Contribution

This project is develop for students and lecturers. It can help students and lecturers to have a proper platform for academic purpose. Thus, this system is able to contribute to the university which wish to have an integrate platform for lecturers and students in sharing the teaching and learning materials.

7.5 Conclusion

Share Together is a web based system that allow students and lecturers to sharing the teaching and learning information. As a conclusion, Share Together system has achieve all the objectives and scope of the project. I believe this system will give the best benefit to students and lecturers if the system is able to utilize in university. However, there are still some parts need to be enhance for more beneficial in future use.
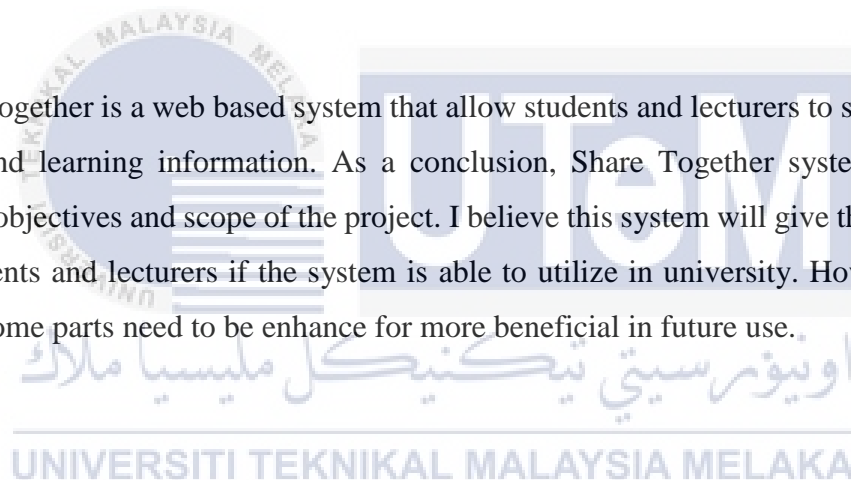
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