

DEVELOPING FINAL YEAR PROJECT MANAGEMENT SYSTEM RUNNING ON ANDROID APPS

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Abstract— The aims of this project is to manage the activity of Final Year Project course by developing a Final Year Project Management System which is running on android apps. The apps help the supervisor to monitor and evaluate their students work progress. It also help the students to communicate and send report progress to supervisor thus this apps make the Final Year Project become convenient and easy. This apps was developed by using Android Studio, Parse.com and Sinch.com. The android studio are Java base language were develop by google and it is an open source mobile operating system. The Parse.com is a hosted service, providing backend service for android platform act as a database. While Sinch.com was used to support the Parse.com for capability to make calling and messaging apps for free. This apps provide several menu which users can send report, view report, calling, messaging, email, view students profile and many others which will be explain further more throughout this paper.

Keywords—Android Studio, Parse.Com and Sinch.com.

I. INTRODUCTION

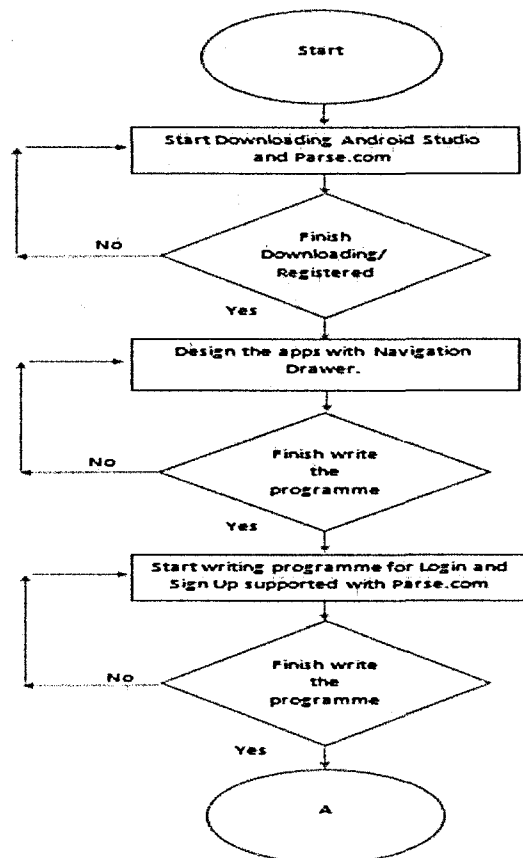
The Final Year project is a compulsory component for the undergraduate master course in UiTM especially in faculty of electrical engineering. The objective of the course is to develop problem solving, analysis, synthesis and evaluation skill. Along the way of the courses, supervisor will hold a series of meeting with students with the aims of to supervise and monitor their project progress. Unfortunately during the process, it is difficult for the supervisor and students to have a frequent meeting with each other's. Therefore the supervisor will have a difficulty to monitor and evaluate the project progress of their students. In solving the problem, thus we have created the Final Year Project Management System running on android apps.

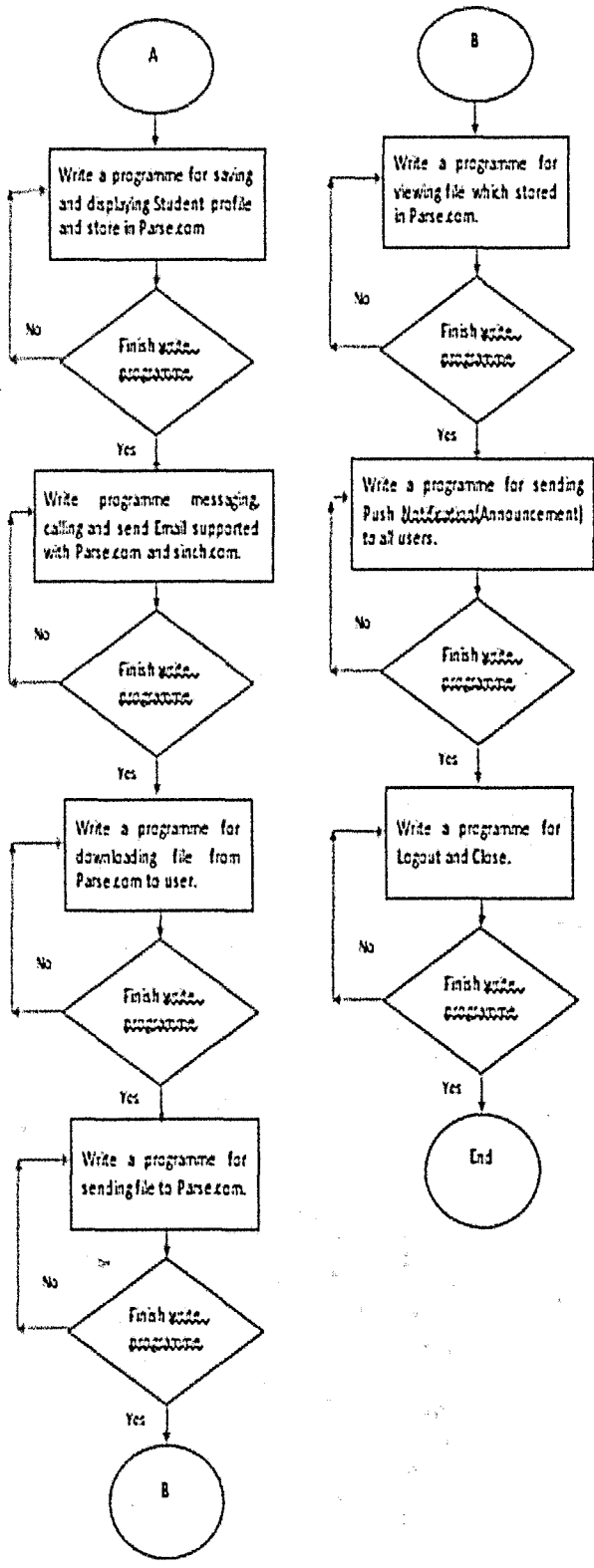
This apps will help supervisor to monitor and evaluate the work progress of students just by using smartphone and tablet. According to [1] stated that in recent year mobile phone have become most common technology tool among people to communicate, computing ability and many others. It also help student to communicate and send progress report to supervisor. Therefore, by creating the Final Year Project management System and running it on android apps will make the final year project become easy and interesting.

II. METHODOLOGY

First able we need to download Android Studio from developer.android.com/sdk website. They provide free software to programmer and first stable build was released in December 2014 and it replaced the Eclipse Android Development Tolls (ADT). After that we signed up with Parse.com to use all the facilities provided. Parse.com provide free for Push Notification and free for first 20G for Core which it can store data such as document file, image, video, music and many others. Then registered with Sinch.com. After we have done all that, then we can start to write our programme in Android Studio.

A. Flowchart of Overall Project





B. Parse.com

First we need to download Parse sdk library which now it was Parse-1.8.3 but the number will be change because it will always be update. Then we need to copy the Application Id and Client Key write it to our line of code like example below:

```

Parse.enableLocalDatastore(this);
Parse.initialize(this, "APP_ID", "CLIENT_KEY");
  
```

This line of code will be written on one java class called Application.java. After that, our apps will be able to connect with Parse.com.

Parse.com provide a lot of item for the programmer to use starting from ParseObject, ParseQuery, ParseUsers, ParseFile, Push Notification, and many others. In ParseObject programmer can create table where it can be use to save a lot of kind of data such text, document file like docx and pdf. Programmer also can save data like music, video, picture and many others. The code word to create table in Parse.com is ParseObject:

```

ParseObject tablename = new ParseObject("tablename");
tablename.put("NAME", "Syazwan" );
tablename.saveInBackground();
  
```

ParseQuery was used to query and retrieve data from the ParseObject table in Parse.com. While ParseFile was used to store and retrieve file data like music, video, picture and others. In Parse.com Push Notification was used to send push notification to users although users are logout from the apps.

C. Navigation Drawer

This apps is using navigation drawer as it backbone design because it is suitable to use for students and lecturers. The Navigation Drawer is a panel that display the apps main navigation option on the left side of the screen. It will be hidden most of the time until user swipes it finger from the left edge of the screen or touches an icon on the action bar. The Android Studio has given some design template for the programmer to choose and some of template are navigation drawer but there are still some code that programmer need to make before this navigation drawer can work.

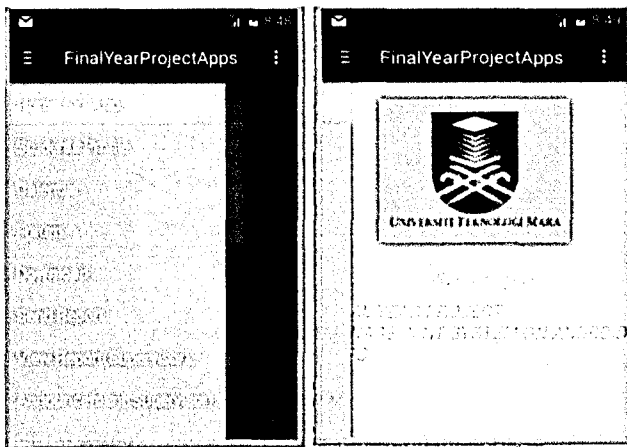


Figure 1: Navigation Drawer

D. Overall View of The Apps function.

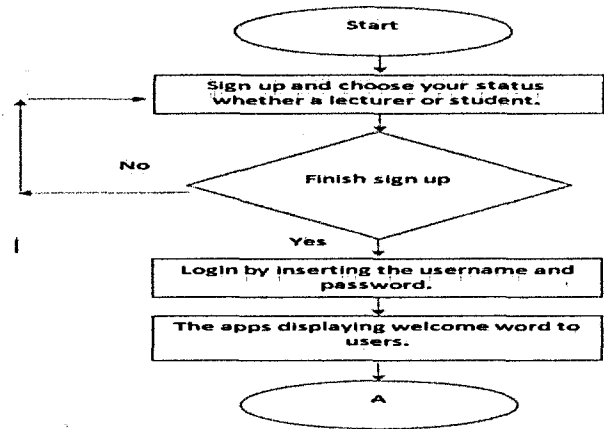
Each user must sign up first before they can use the apps. In sign up menu, users must fill up their username, password and status. If the users are supervisor then they need to select the supervisor button and the same thing also happen if users were student , After that, every users can login to the apps because their data have already stored in Parse.com.

In the main user interface, the apps will display the menus on the left side of the smartphone screen. This apps had about eight menus to use by the users. Some of the menus were Students Profile, Calendar, Forum, Download, Send Report, View report, Announcement and link to UiTM web site.

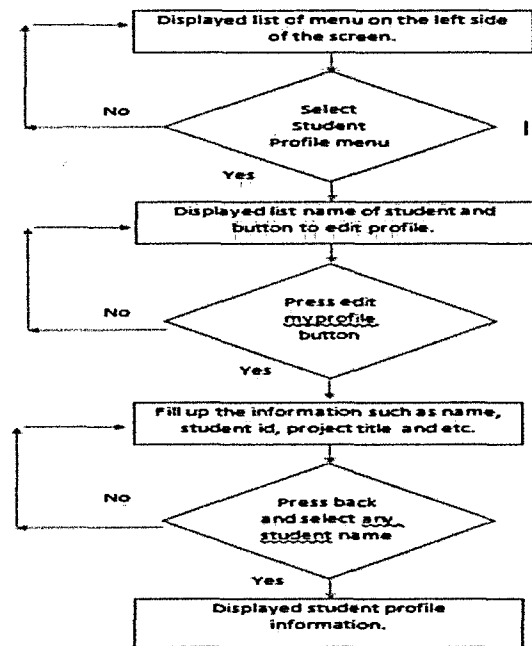
Every users can use the students profile to view students information and only students were allowed to edit their profile data. Users also can use the calendar menu to view date. Then this apps have Forum menus which this menu contain 3 submenus such as Chatting, Calling and Send Email. Thus, in Forum menu users can use it to chatting, calling and Send Email free without charge.

In Download menu, users can use it to download forms which those forms were related to Final Year Project forms and many others. Then, this apps have Send Report menu which were used by the students to send their progress report to supervisor. Send Report menu only allowed students to access it.

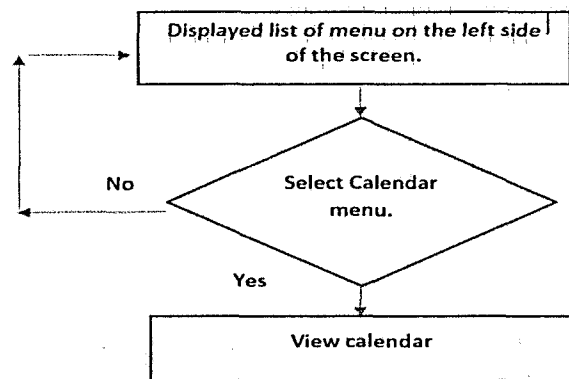
In View Report menu supervisor can use it to view students submitted progress report. This menu only allowed supervisor to use it. Then this apps have Announcement menu which was used by the supervisor to send announcement to all students under her supervise. This menu only allowed supervisor to use it. The last menu was used to open UiTM official web site and student portal.



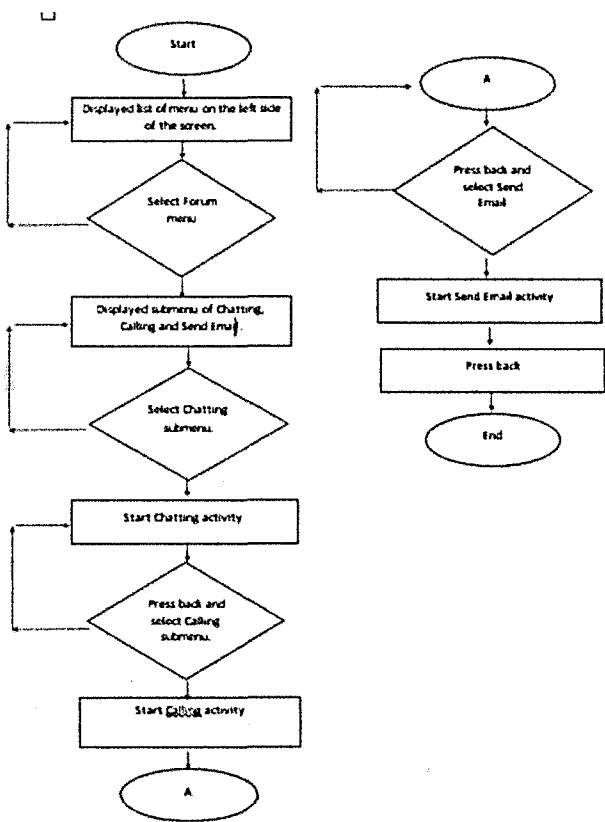
Flow Chart 1: Flow chart of sign up and login.



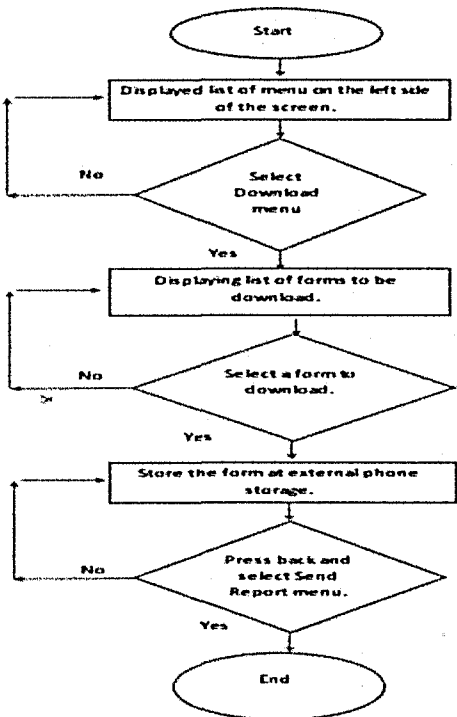
Flow Chart 2: Flow chart of Student Profile menu.



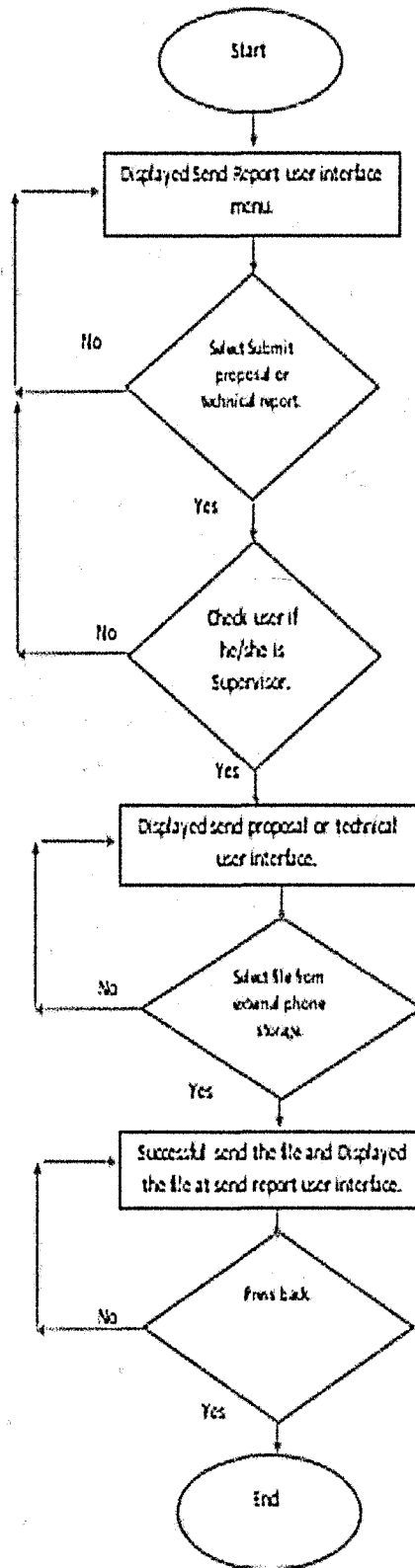
Flow Chart 3: Flow chart of Calendar menu.



Flow Chart 4: Flow chart of Forum menu.



Flow Chart 5: Flow chart of Download menu.



Flow Chart 6: Flow chart of Send Report menu.

E. Login and Sign Up

This app has a login and signup capability where it was supported by Parse.com. Every User must sign up first before they are allowed to use the app and they must select their status whether they are lecturer or student. Their username, password and status (lecturer or student) will be saved in Parse.com in a Table called User.

In Android Manifest xml, programmer had to write to `<uses-permission` which is Internet and Network State Permission before this app can access to the internet. The secret key was mentioned earlier was provided by Parse.com and it acts like a bridge between Parse.com and the app.

ObjectID	username	status	password
QtrkVHSxjJ	suzi	lecturer	
UQq100E12	norsuzita	lecturer	
3CVhKpuRIT	dmi21	lecturer	
mc2CqwC3xy	kamal	student	
R13eup1ebw	drsuzi	lecturer	
2Qck0S6ctX	drsyaza	lecturer	
PupzxZ126S	marian	student	
AHoCmS0ZJq	farah	student	
CvVfKpwpK0	hadi	student	
rFGxbAtbxY	ayub	student	
m4grvBnsjP	sima	student	
f6f1Kk1UGG	naim	student	
Kkhf2S6w19	syazwan	student	

Figure 2: User table in Parse.com which stored username, password and status.

In Android Studio it has two class for login and sign up and two xml also for login and sign up. Actually, in Android Studio xml was a graphical user interface while java class is the brain for the xml. Which means that java class is where the programmer writes the java base code.

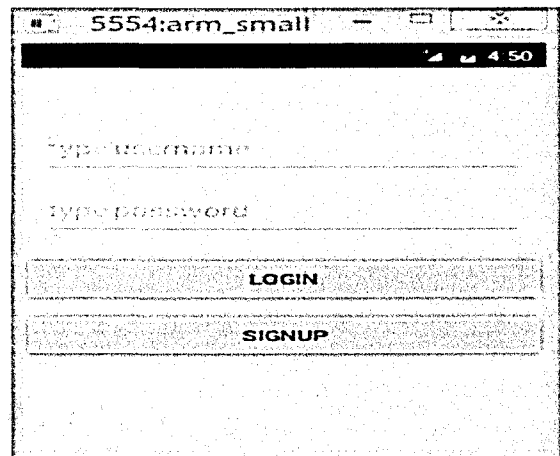
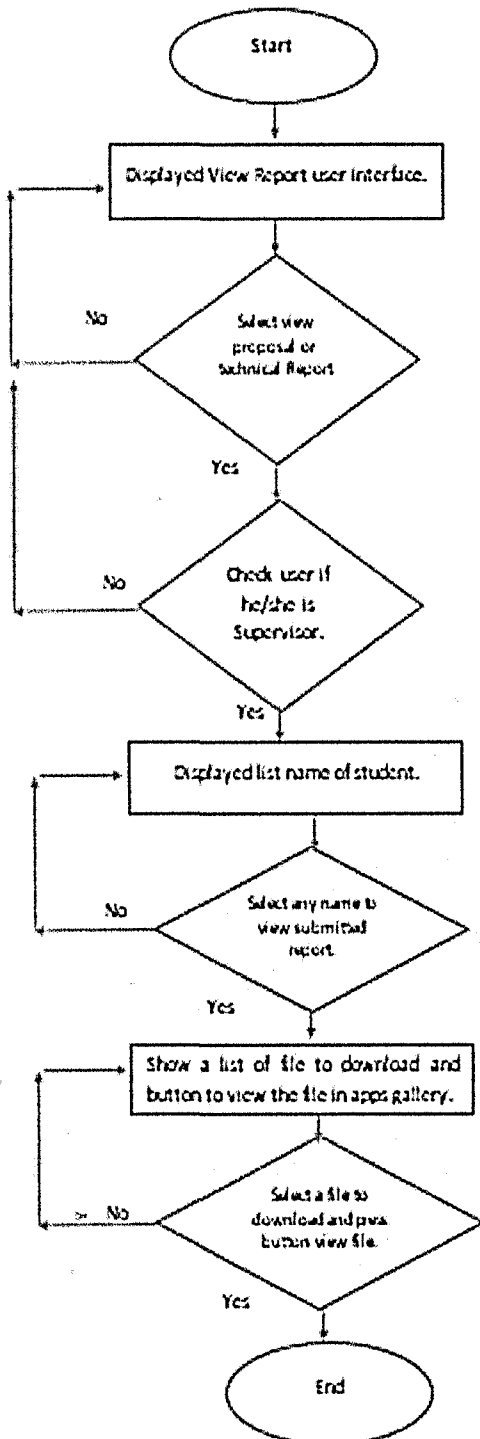


Figure 3: Login User Interface



Flow Chart 7: Flow chart of View Report menu.

F. Student Profile

Student Profile is where users whether lecturer or student can view other users information regarding their name, no phone, project title and many others. Each user especially student need to fill up the student profile to store their data into Parse.com. By using the Parse.com, we create the Table named *studentdata* to store the information of users. Then, we use Android Studio to query all data and display it on android platform.

Here we need to build up one java class with one of its xml layout. Statement below show how some of the code was written:

```
ParseObject studentdata = new ParseObject("studentdata");
studentdata.put("NAME", name);
studentdata.put("STUDENTID", student);
studentdata.put("TELEPHONE", telephone);
studentdata.put("PROJECT", project);
studentdata.put("STATUS", fulltime);
studentdata.saveInBackground();
```

objectId	Serial	NAME	PROJECT	STATUS	STUDENTID
z6SHNvQVY	Mohd. Naim	android	part time	2012537965	
aXWkLfbrn	Mohd. Ayub	ASTENA	Part Time	2012736976	
21eVKTJcuu	Faran	Apps Android	Part Time	2012647337	
SOMsPBFYOC	Mahamad Syazwan B. Maza	Satellite	Part Time	2012743975	
7ASnE9r2uD	Abdul hadi	Website	Part Time	3434343422	

Figure 4: studentdata Table in Parse.com

G. Forum

In Forum, users can chatting, calling and send email with each other. Chatting and calling were supported by Parse.com and Sinch.com where Parse.com provide database to store the message while Sinch.com provide capability to do the messaging and calling.

For chatting we make four (4) java class which are ListUserActivity, Messageservice, MessagingActivity and MessageAdapter. ListUserActivity class is where Android Studio handle the list of users that are store in parse.com and display it in ListView widget. While MessageService was a background service or programme use to support the messaging. MessageAdapter where the layout of the chatting was design and MessagingActivity where the chatting are code written.

There are only two (2) java class use to create the calling activity for this apps. The first one is Logincalling class and the other are calling class. Logincalling class is use to make a list of user to be display and choose among users. While calling was used to write the java code for calling activity.



Figure 5: List View of users

H. Send Report

Student will have the ability to send their report to supervisor by only using their fingertip. The process begin when the student select a file which they had captured and save it into phone storage. Then the apps will store the file into Parse.com. At View Report menu, where only supervisors are allow to enter this menu, supervisor can view the report after they had downloaded it.

objectId	Serial	laporan file	namaPelajar	created
190tbDjCxF	proposal.jpg	ayub	Jun 06,	
11eZqZ1YRb	proposal.jpg	ayub	Jun 05,	
eFYkQBcwv	proposal.jpg	farah	Jun 05,	
KpnK8GQq55	proposal.jpg	hadi	Jun 05,	
IXDC9r0188	proposal.jpg	naim	Jun 04,	

Figure 6: Table containing report send by students

I. ViewReport (Supervisor)

This menu only allow supervisor to use it. Where Supervisor can view and download the reports that were send by their students. They can view the report inside the apps gallery after they have downloaded it to the phone storage.

objectid	filename	studentid	studentname	createdat
0	dlZ30rM0QE	m4gnV6nsJP	sima	May 31, 2015, 02:39
0	1S3UyGR0z0	CvYfKwpK0	hadi	May 31, 2015, 02:38
35	nF5080G0xY	KkHf256w19	syazwan	May 31, 2015, 02:37
13	P1owdeMxHs	AH0Cm50ZJq	farah	May 31, 2015, 02:36
12	ej3dEK1c4s	KkHf256w19	syazwan	May 31, 2015, 02:35

Figure 7: Table containing report send by students

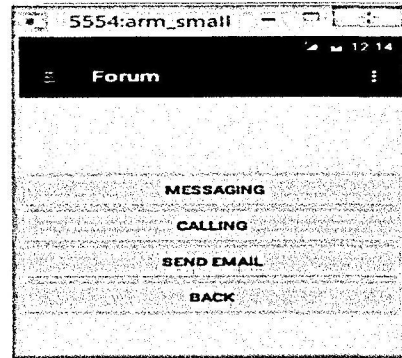


Figure 9: Forum menu with sub menus of Messaging, Calling and Send Email.

J. Announcement

This menu also was restricted to students, where students can't enter it. This menu allows the supervisor to send Push Notification to every users that use this apps. Parse.com allow it clients to use the Push Notification for free.

K. Logout

If the users intent to exit this apps they can use the Logout menu to completely exit from this apps.

III. DISCUSSION AND RESULT

This apps running perfectly without error but there is still many improvement can be done to achieve the objective of this project. Every single menus like Login and Signup were build according to the objective where there must be two different users to sign up for this apps it is lecturer and students.

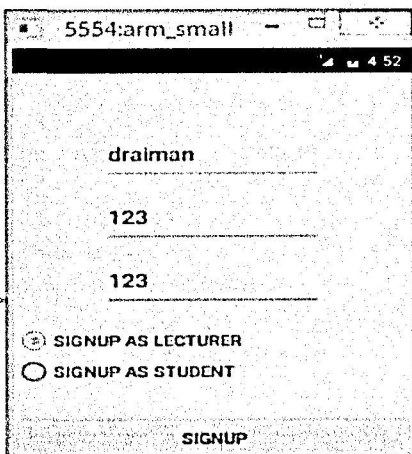


Figure 8: Sign up user interface

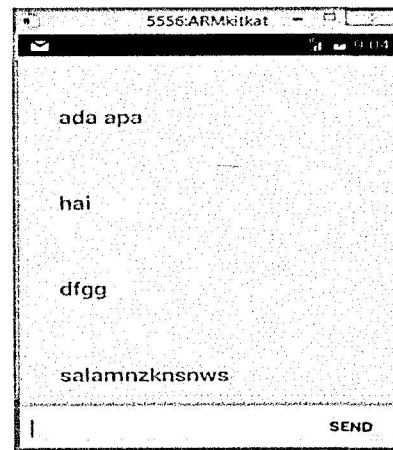


Figure 10: Chatting user interface

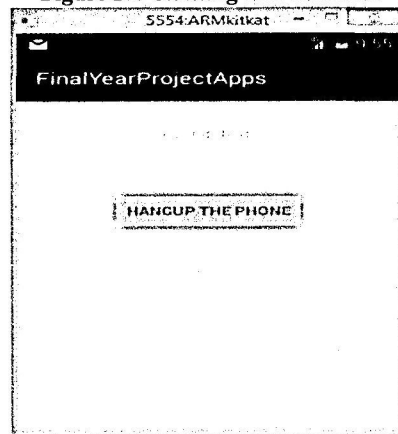


Figure 11: Calling user interface

In forum where it have chatting, calling and send email it were run perfectly. Every users can use this apps to messaging, chatting with other user with free if they have internet connection.

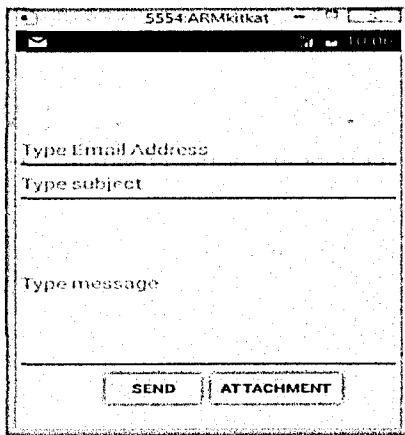


Figure 12: Send Email user interface

Download is menu where users can use it to download forms such as Technical Report Format, Proposal Report Fomat, Special Leave Form, Add or Drop Course Form and many others.

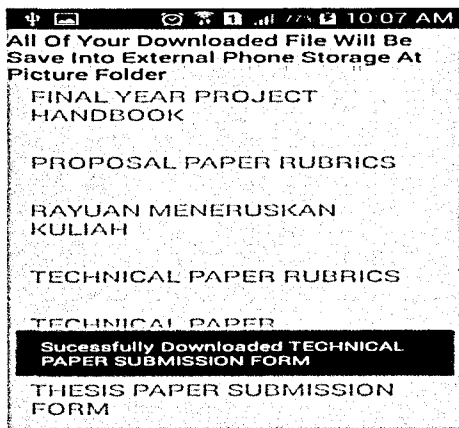


Figure 13: Download user interface

Then this apps have Send Report menu where used by students to send report. Figure below show its work.

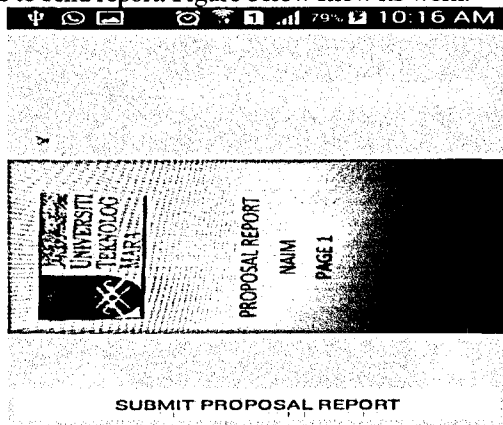


Figure 14: Send Report user interface

View Report menu was used only by supervisor to view students submitted report. Supervisor can view student submitted report after they have downloaded it.

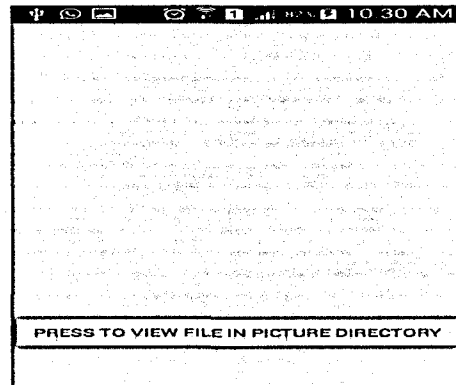


Figure 15: View Report user interface

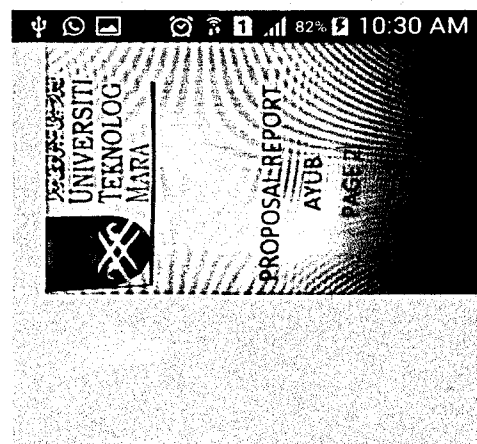


Figure 16: View Report gallery user interface

Push Notification menu was only allowed supervisor to use it. Supervisor can send announcement to all students under his supervise at the same moment. Figure below show its work.

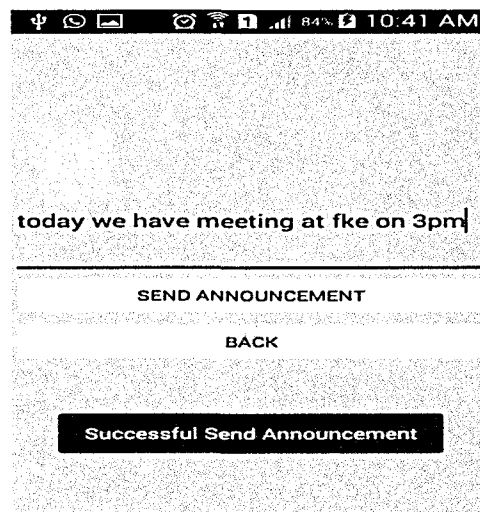


Figure 17: Announcement user interface

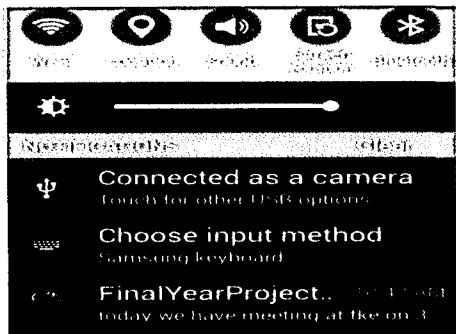


Figure 18: Announcement appear on notification bar on every users phone.

IV. CONCLUSION

Final Year Project Management System Running on Android Apps will help supervisor and students in doing their Final Year Project. It help them to communicate with each other although they are separated by far distance. In the future expansion there a lot improvement can be make for this apps such as make a group messaging, camera and many others.

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