IT IS/CS 5180 – Mobile Application Development

Project Report - UNConnect

Group 10B-2	Niner ID
Ramamoorthy, Ganesh	800887691
Priyanka Jha	800864817
Lingakumar, Rakesh Balan	800859703

December 15, 2015

Group 10B-2 - UNConnect

Table of Content

Group 10B-2 - UNConnect

Abstract/ Executive Summary

Our project "***UNConnect***" is a social application that should enable users to connect and share content, messages and media with other users.

We have developed a mobile application as part of Mobile Application course project, which will provide users with a profile that can be used to share their images, send and receive messages, maintain albums. This app can be easily connected using the FB and Twitter Login as well.

The main purpose of our application is to provide a platform for UNC Charlotte Students to be connected and share their updates real-time.

Introduction

This section describes the overview of functionalities provided by our application "UNConnect". Our application provides following functionalities.

a. User Profile – Every user in system will have a profile which can contain their profile picture, Name, Gender, Albums and Messages.
b. User Login/Sign up - To user the application each user must either create their own login credentials or can use FB and Twitter login credentials.
c. Albums – Users can maintain their Albums, they can add photos, and choose to share their album with other user through privacy settings.
d. Messages – Users can send and receive messages based on their privacy settings. Users can reply and send media files in messages.
e. Push notifications – Based on the privacy setting, user can send and receive push notifications about events happening in their profile from other users.
f. Privacy – this feature allows user to control the access of their profile, messages and albums.

For details description and working of each feature, Please refer the Detail View section.

Group 10B-2 - UNConnect

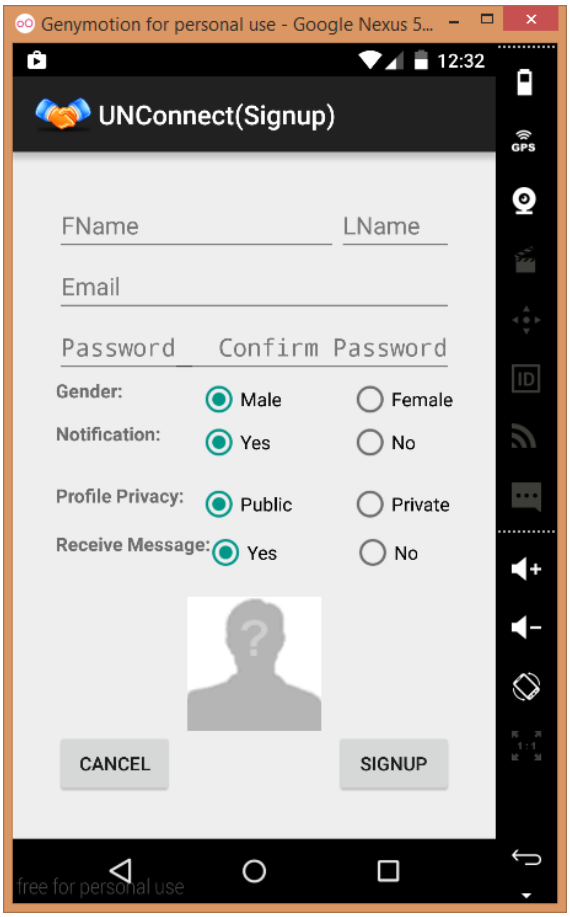
Detail View of Application

Parse API: We have used Parse platform and APIs to store all the application data. A Parse app is created "MAD PROJECT" and all the objects are stored and retrieved using Parse queries.

Android studio is used for the development of the application.

Login & Sign up Feature: The application Login and Sign up functionality enables the user to create credential with the application. The application will maintain user data objects. User can also login using FB and Twitter credentials. The application supports FB and Twitter login.

a. Application Sign up Page :

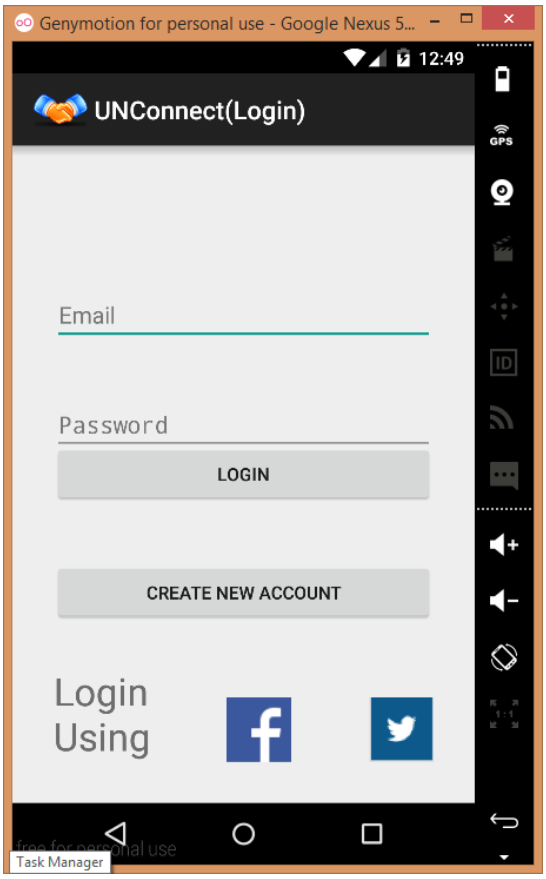


In application signup page user will fill all the details as shown in screenshot and can choose a profile picture. Users' privacy will be decided based on the radio button selection made in this page.

Group 10B-2 - UNConnect

On clicking on sign up button, the user account is created and user will be taken to login page.

b. Application Login page:



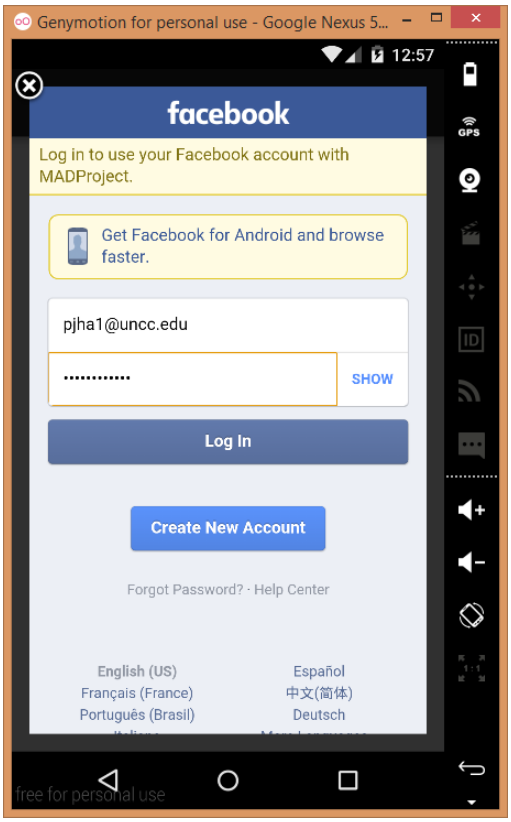
In login page user can login using email/password they have given while signing up in the application. Users can skip the signing up part and login in application using their Face Book and Twitter credentials as shown in screenshots. On successful login, the toast message will be displayed and user will be taken to profile page.

User detail will be inserted in ParseUser class.

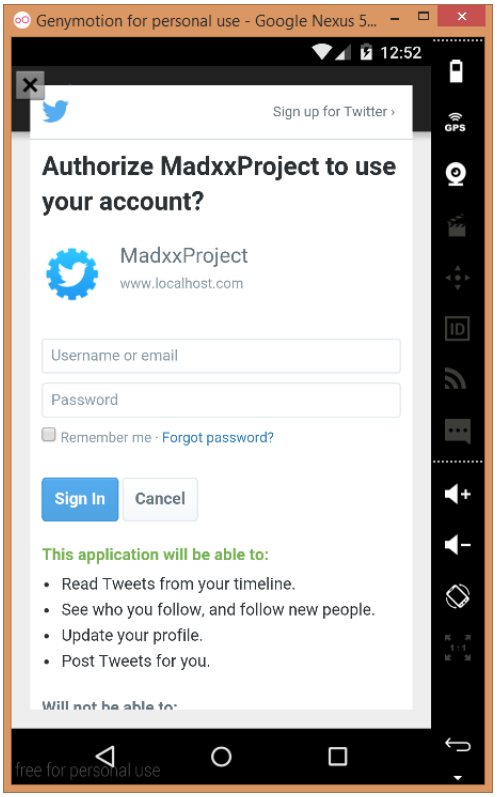
c. Login through FaceBook :

This will use Face book login page to login to our application.

Group 10B-2 - UNConnect

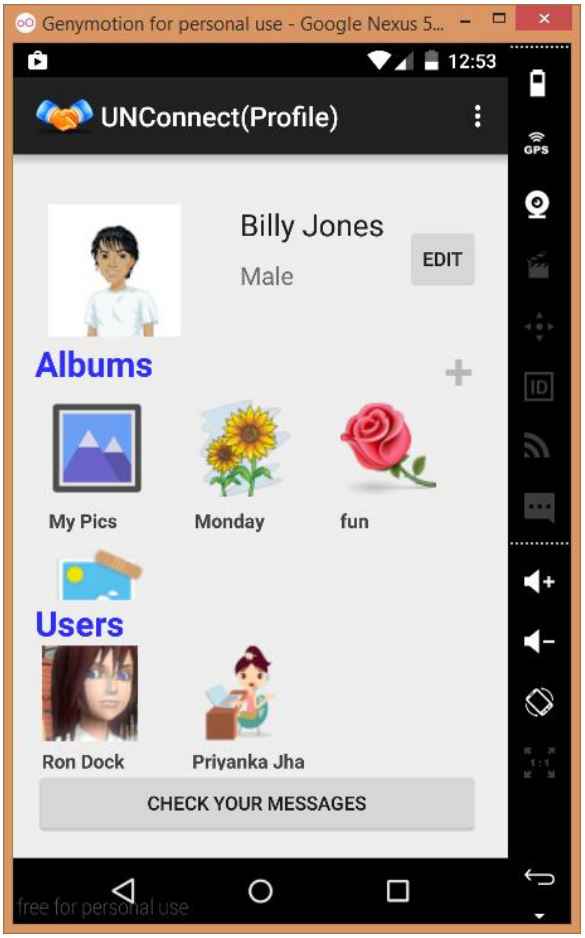


d. Login using Twitter:



Group 10B-2 - UNConnect

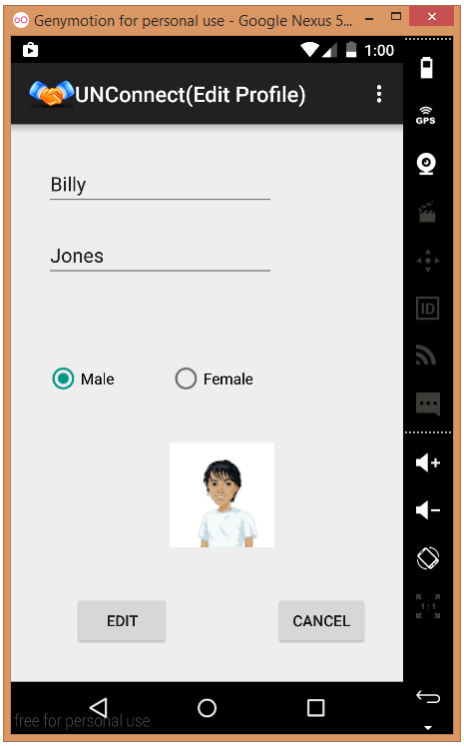
User's Profile: The user profile is the main window which shows user's profile details, albums created by user and other user's album if the privacy policy permits. User can add new album by creating on add button in the Album section. User can check other online users in the user section if their privacy policy permits.



Above figure shows the profile page of Billy jones, which shows his profile picture, gender and all the albums which are either created by him or publicly available to be viewed or invited/shared with him. Check message button will take to the message section of the application. On clicking on other user, user profile will open and details can be viewed. Similarly, on clicking on Album the album details will be displayed.

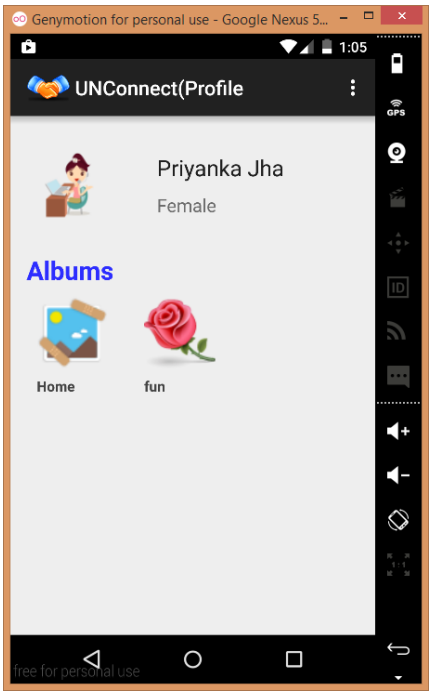
User can edit their profile by clicking on Edit button. It will open the edit profile fragment as shown in figure.

Group 10B-2 - UNConnect



The values are pre populated and basic details cab be modified like Name, gender and profile pic.

If user click on other user profile, basic details of his profile and public albums will be visible all being non editable as shown in figure.



Group 10B-2 - UNConnect

User's Album:

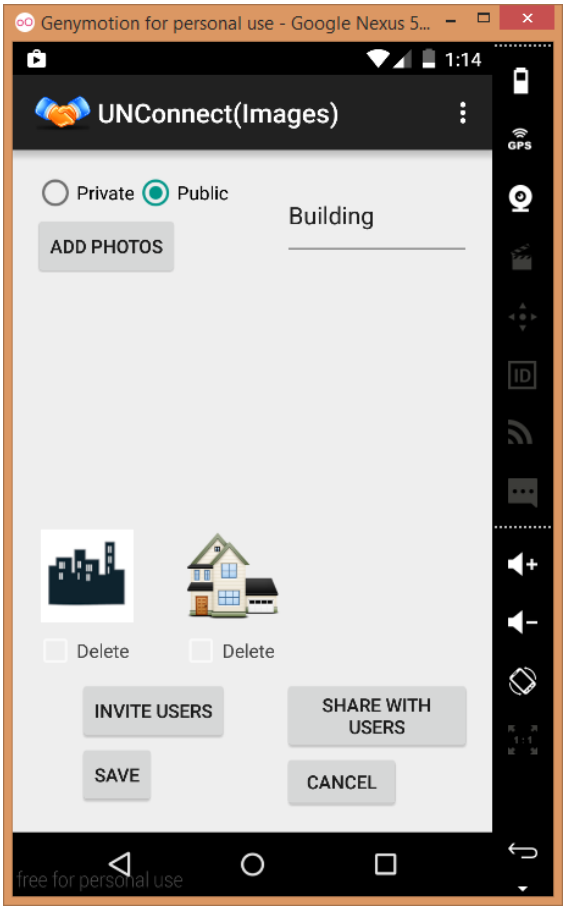
The album feature allows user to add photos and save photos in the application under a album name. User can create album, add photos and delete the album and photos from the album, user can view their and other's album based on privacy policy. User can share their album with other user and can invite other users to add photos to their album. Users can control the visibility and accessibility of their album by making it public/private.

a. New Album creation screen :

Below screenshot shows the album creation screen with album title,

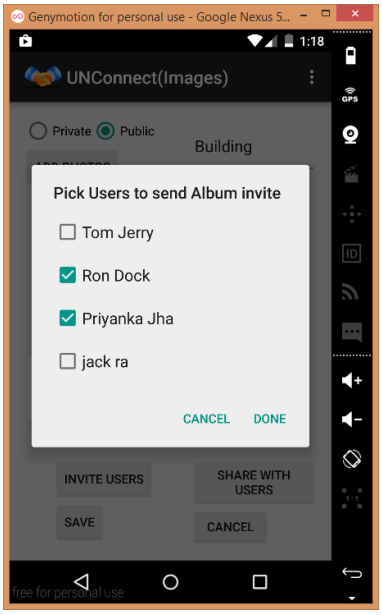
Privacy (Public/Private), album photos and the invited and shared buttons.

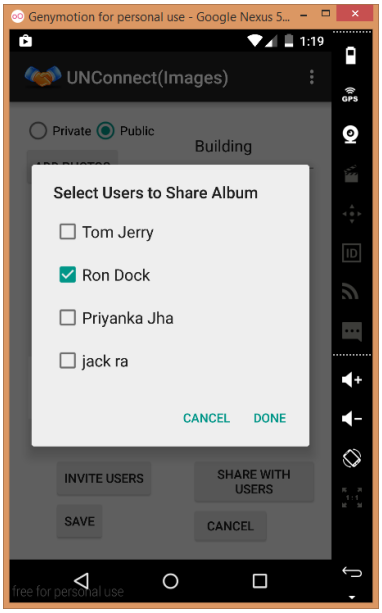
Photos can be deleted by clicking on delete checkbox button.



Group 10B-2 - UNConnect

Shared and invited users can be viewed by clicking on shared and invited users buttons as shown in screenshot, alert checkbox will be popped and users can be selected.

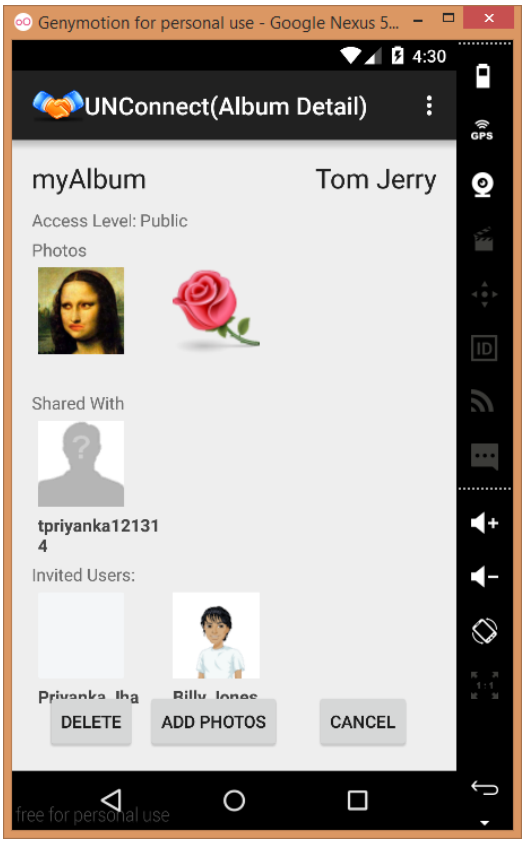




Album data for each user is maintained in parse by creating an “Album” class and an “AlbumImage” class.

Group 10B-2 - UNConnect

b. Album Detail View Page:

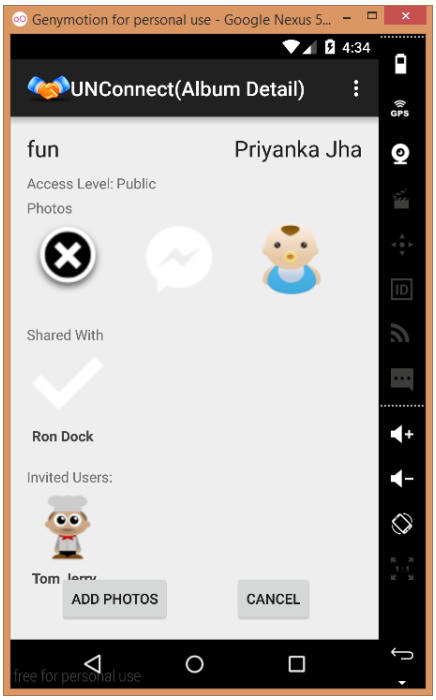


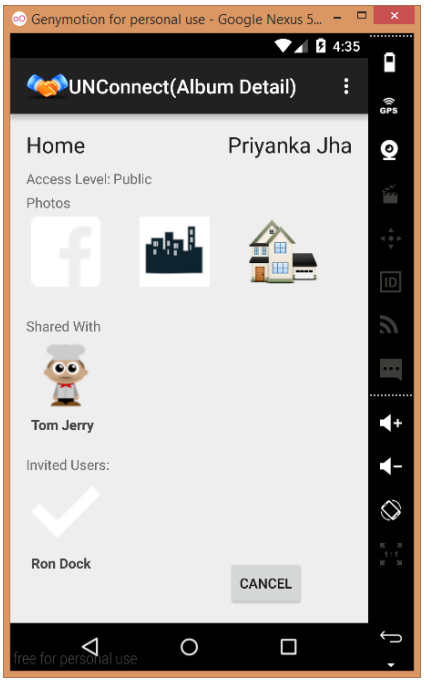
The screenshot shows the album detail view page. It shows the access level, owner name, photos and shared/invited users list.

User can add image to the album and delete the album (If owner).

If the album will be viewed from invited user profile “delete” button will not be visible and from shared user profile or public album both the delete/add image button will not be visible as shown in screen shot.

Group 10B-2 - UNConnect

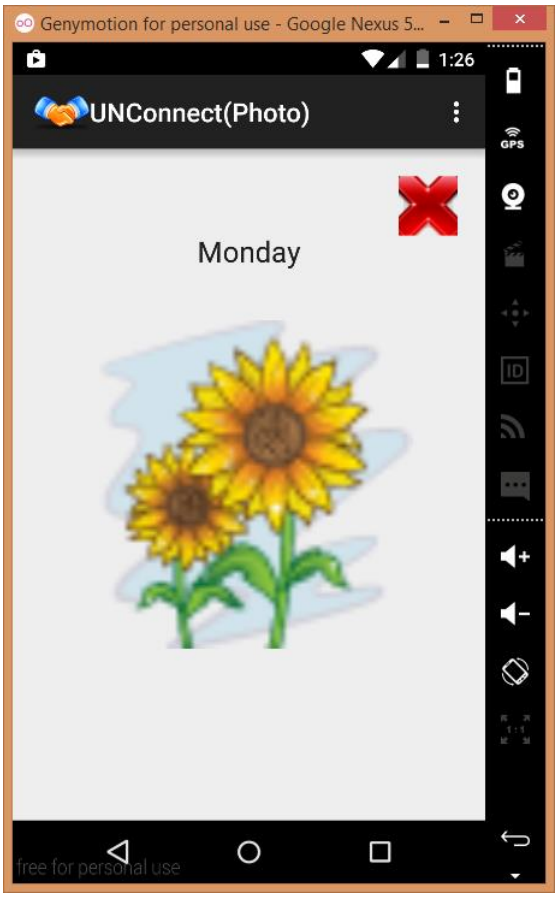




c. Individual Image view :

Each image of the album can be opened and viewed in full screen as shown in screenshot.

Group 10B-2 - UNConnect

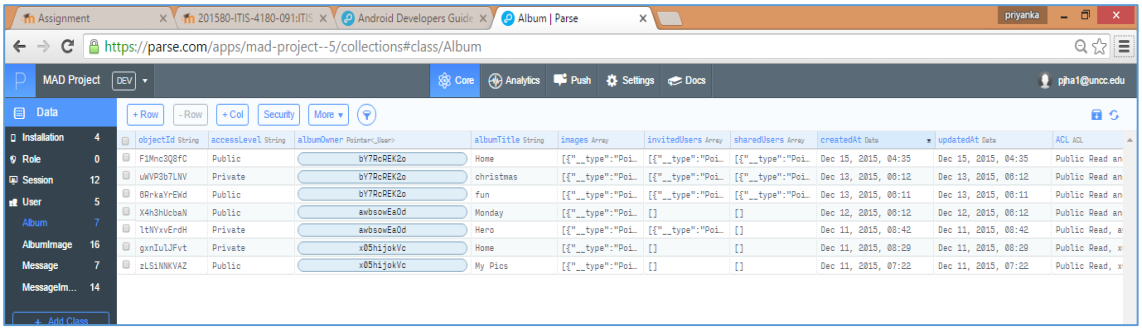


The image of album titled 'Monday' can be viewed in full screen it can be closed using red cross button at the top right.

d. Photos moderation by album owner

Screenshot to be put here

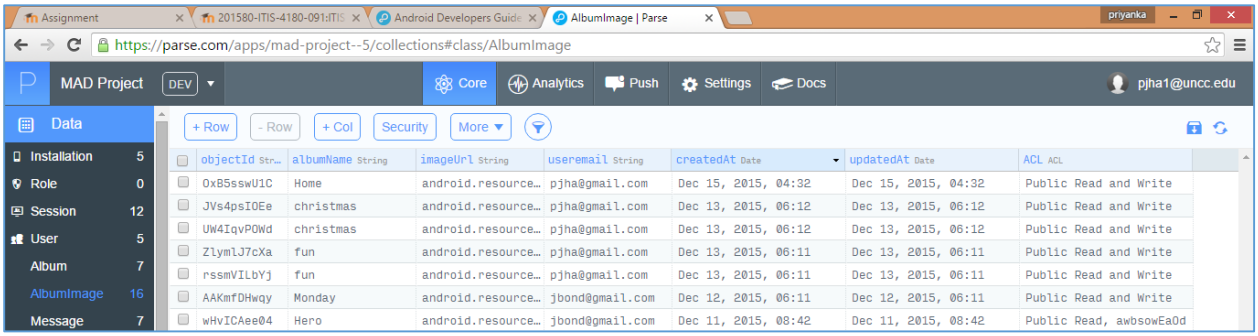
e. Parse Class – Album:



The array list is maintained for invited and shared users, access level column defines the access to the album. The pointer to the User class is used for owner, invited and shared columns.

Group 10B-2 - UNConnect

f. Parse Class – Album Image:

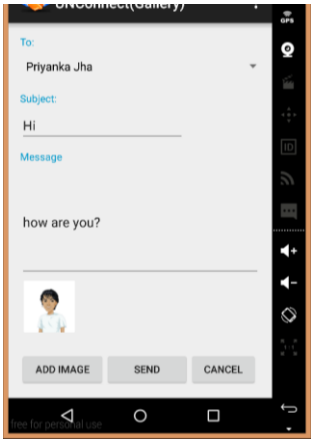


Shows the album image class holding all the images for each album. The Album class and Album Image class are linked to each other by using album name like a foreign key.

User Messaging:

The messaging feature allows user to communicate with other users; they can send messages to each other reply to the messages. Maintain an Inbox of read and unread messages. Users can share images also through the messages. All the Messages for a user are stored in Parse in "Message" class. The "MessageImage" class is holding all the images linked with a particular message. The user can opt to receive messages through their privacy policy. If a User is not entitled to receive message, other user will be notified through toast message to select other user. Following screenshots shows the details of message. The app is designed in such a way that user can access just their own inbox.

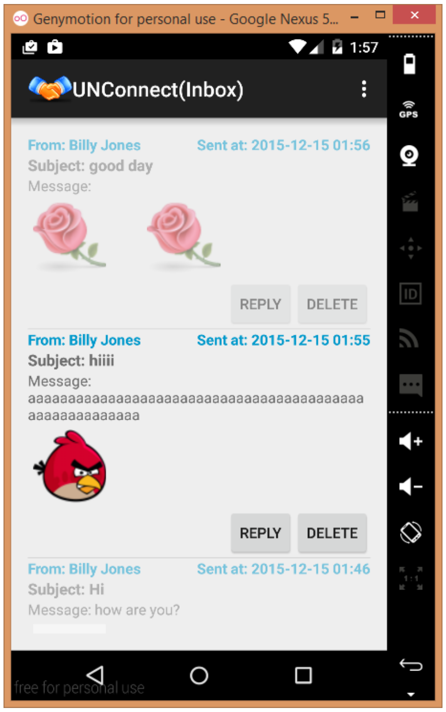
a. Compose Message layout:



On clicking on send button message will be sent to the user.

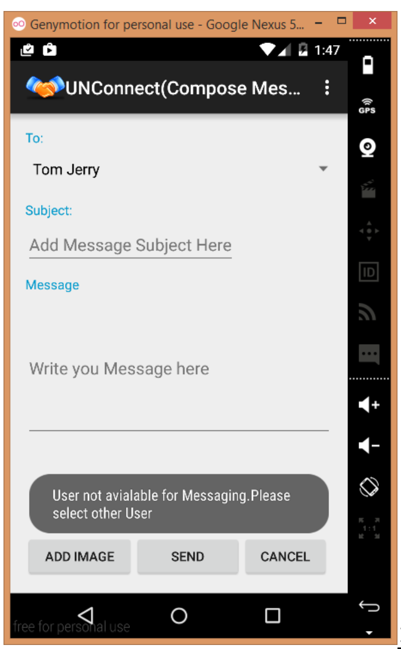
b. Message Inbox Layout:

Group 10B-2 - UNConnect



The figure clearly shows the read and unread messages with the read ones are faded gray to distinguish. User can click on reply button which will open the compose message fragment. Delete the message will delete the message and refresh the list.

c. User (no messaging) to receive toast message:

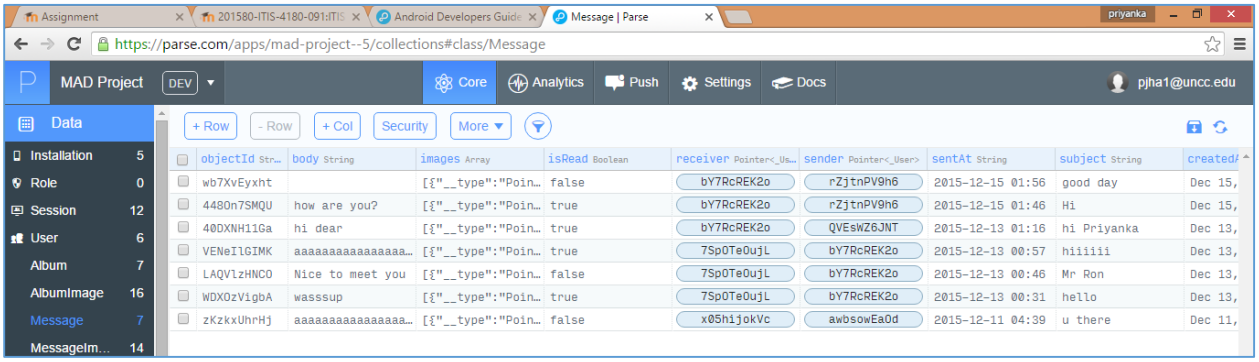


:

Group 10B-2 - UNConnect

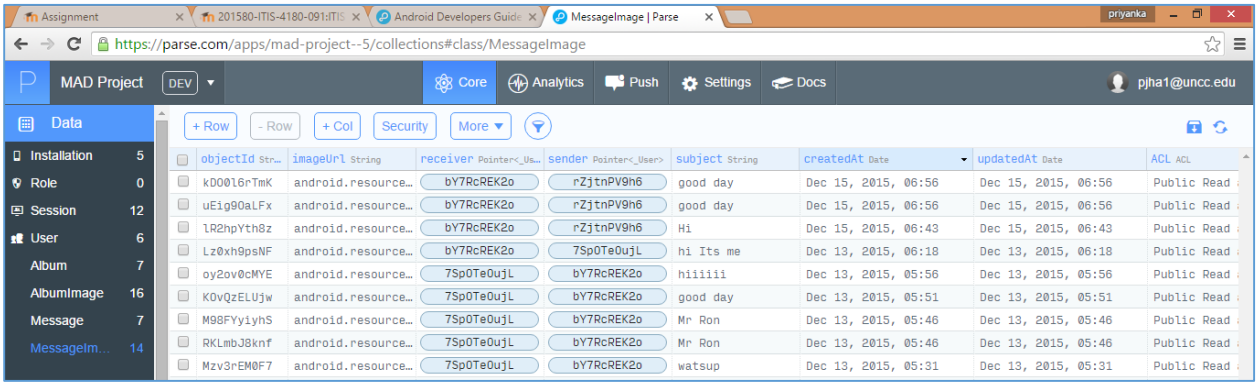
Since the user “Tom Jerry” has opted not to receive any messages. So on trying to send message to this user a Toast message will pop up.

d. Parse Message class:



Shows the message class with sender and receiver columns are the pointers to the User class. The “isRead” column decides if the message is read by user or not. The images column hold the pointer to the “Message Image” class holding images of each message.

e. Parse MessageImage class:



Shows the MessageImage class holding all the images for each message. The Message class and MessageImage class are linked to each other by using Message subject like a foreign key.

Privacy:

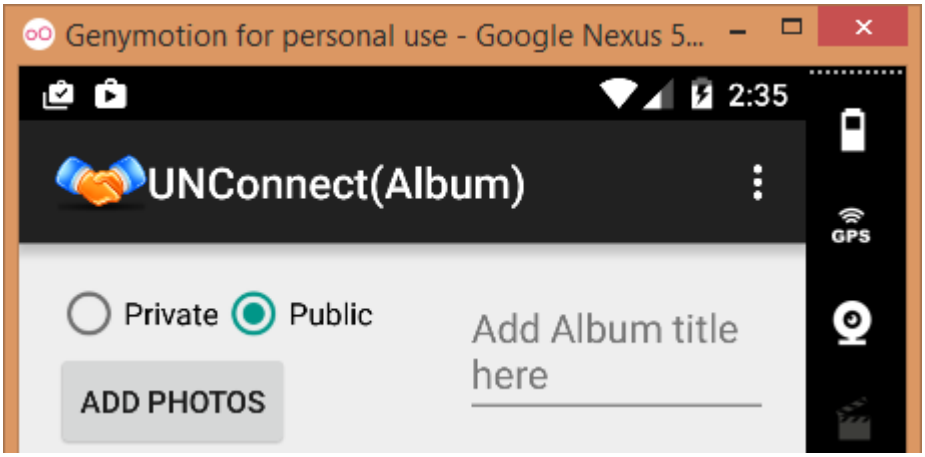
The privacy policy of application controls the exposure of data between users. The application mainly focuses on following privacy norms.

a. Privacy of Album

The user can control the visibility of their album by choosing the access level for each album. If “Public” then album is visible by all the users in the system. If

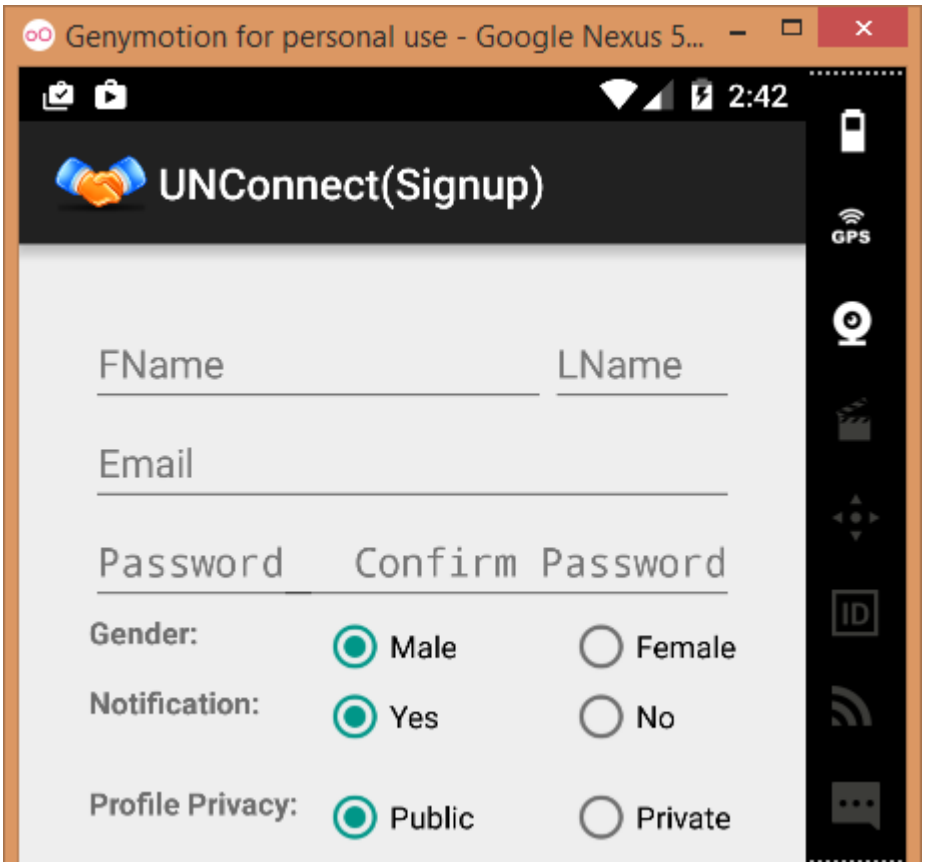
Group 10B-2 - UNConnect

"Private" then album is only visible by the owner or any other user who is invited to add photos to the album. This Privacy setting.



b. User Profile listing:

The users can control the visibility of their profile. If the user opt to stay private they can do so by selecting "Private" while crating account. The user profile will not be visible to other users if its private.

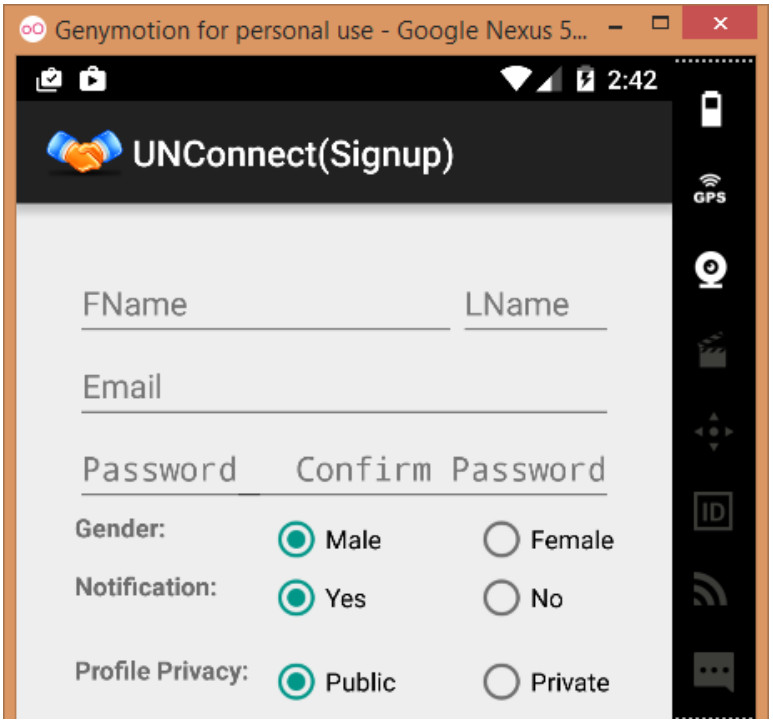


Group 10B-2 - UNConnect

c. Allow Push notification

The User can control the push notification also by selecting the YES/NO radio buttons at the time of creating their accounts. If YES then only users can be notified through push notification.

As of now, the application did not support the editing of all these privacy setting after creating profile as it was not the part of project requirement.

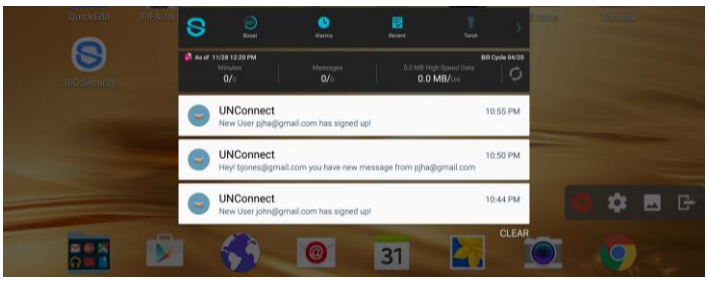


Push Notification:

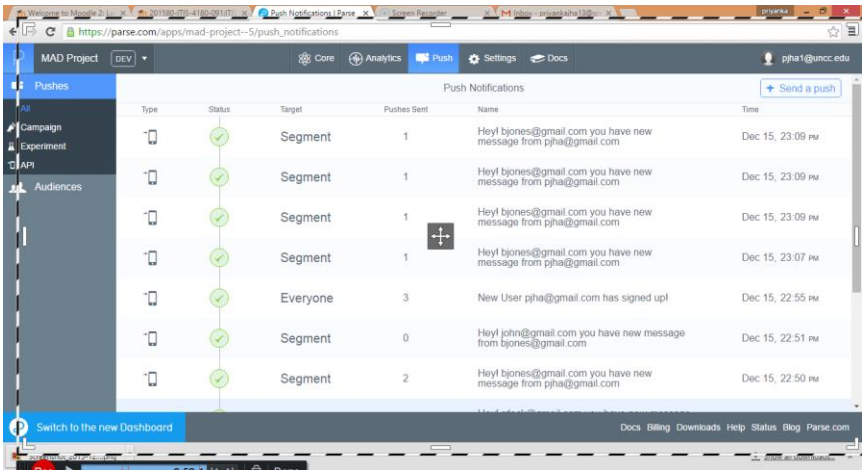
The Push notification is a way of notifying user real time about the activities happening in his profile. The push notification sends the message to the user about the events happening. User can opt to receive push notification as shown in privacy section.

a. When user A sends a message to user B:

User B will be notified real time on the activity done by user A. User b can take action accordingly.

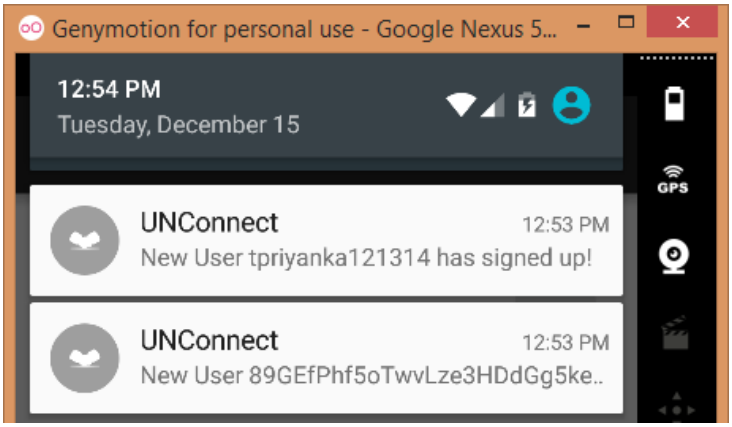


Group 10B-2 - UNConnect

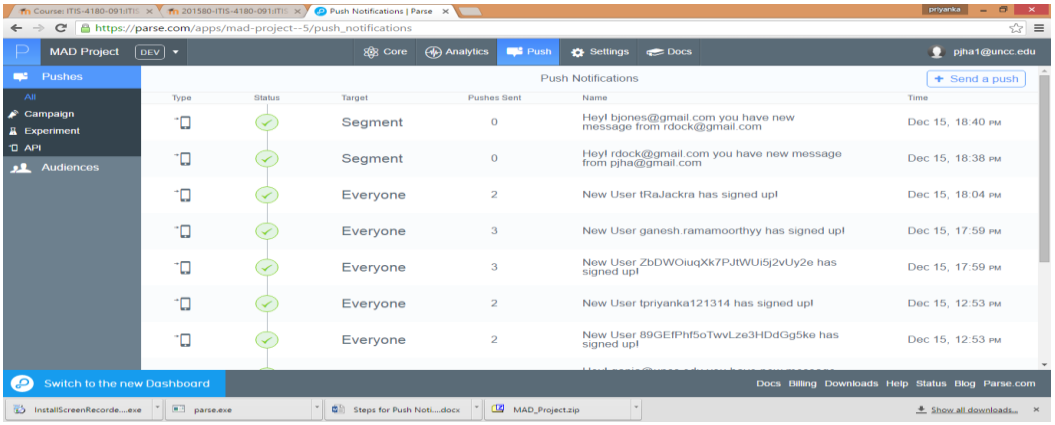


b. <u>When new User registers to the system:</u>

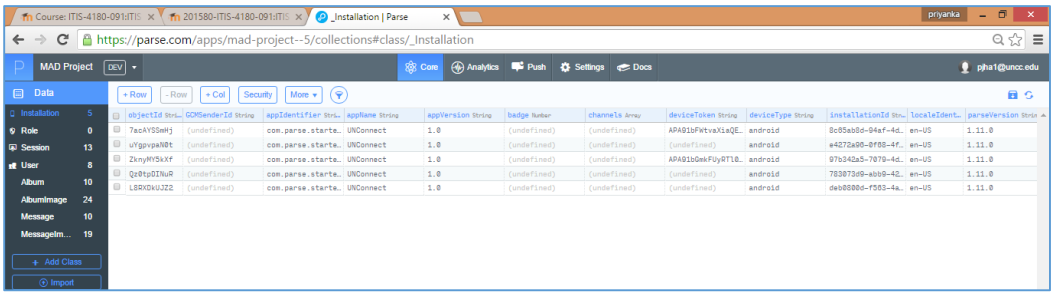
Whenever a new user registers the system the following push notification will be sent to all the users



Following screenshot shows the push notification window of Parse project



Group 10B-2 - UNConnect



Design Choices:

a. Using Fragments

We have chosen to design our application using fragments instead of basic Activities. Since fragments not only provides the backstack and life cycle features, but they are also more reusable than custom views. It is easier to communicate between each fragment using interfaces. Use of Intent is not flexible as passing data and receiving data requires lot of data encapsulations i.e. Parcealable etc.

b. Using Parse

We have discussed between Parse and SQLLite to be used to save data of the application. We selected parse mainly because parse API not only supports saving of data but the linking of each classes, implementation of queries is much more simple in Parse. Parse easily maintains user's profile and it's easy to fetch using pointers. Parse even provides adapters which can arrange the data in list view or grid view effectively. Integrating with FB and Twitter application was also very easy with Parse APIs.
Push notification functionality cannot be done so easily without the help of Parse APIs.

c. UI components:
The design of Application mostly focuses on images and titles than button, which is inspired by Facebook and other social application. This not only improves the look of the application but also makes it easy to understand by users thereby promoting user friendly design.

Implementation Status:

Following table provides the detail of completion status of our application.

Group 10B-2 - UNConnect

Sl No	Functionality	%age completed	Comment (if any)
1.	App login functionality	100	
2.	App Sign up	100	
3.	Login through Face Book	100	
4.	Login through Twitter	100	
5.	User Profile	100	
6.	Edit User profile	100	
7.	View other user's profile based on privacy policy	100	
8.	Create Album	100	
9	Control privacy of Album	100	
10.	Add delete photos to Album	100	
11.	Delete album	100	
12.	View Album Listing	100	
13.	View Album details	100	
14.	View Shared and Invited users	100	
15.	View each photo individually	100	
16.	Album and photos stored and managed in Parse	100	
17.	Owner can invite other users to add photos in album	100	
18.	Invited users can add photos	100	
19	Send message to other user	100	
20	Receive message from other user	100	
21	Set privacy for not receiving messages	100	

Group 10B-2 - UNConnect

22	Message should be able to contain text and photos	100	
23	User should access their own inbox	100	
24	User should be able to reply to message	100	
25	User should be able to delete message	100	
26	Inbox should distinguish between read/unread messages	100	
27	Message should have sender and time	100	
28	Push notification – When user A shares photo Album with User B	50	Could not make it work properly
29	When user A submits photo in User B's Album for photo verification.	0	Could not make it work
30	When User A sends Message to User B	100	
31	When new user registers the system	100	
32	Privacy of album – Private/Public	100	
33	Privacy of profile listing	100	
34	Privacy to receive push notification	100	

Group 10B-2 - UNConnect

Acknowledgement

We would like to thank Professor for the expert advice and encouragement. He explained each topic in depth and created interest which drives us in completing the project successfully.

We would also like to thank all the TAs for giving us a clear idea of the project and providing us with specific ideas about out project that were important in the demonstration point of view.

Conclusion

Therefore, to sum it up, we have created a mobile application for UNC Charlotte students name “UNConnect”. This app will help users to be updated with UNC events through album and messaging features. The users can also be secure about their privacy through our policies.

References

- http://stackoverflow.com/
- https://parse.com/docs/android/guide
- Course videos