

Final Project Report

1. Project Name:

Your Notes

2. Build by:

Lanyixuan (Lanny) Xu

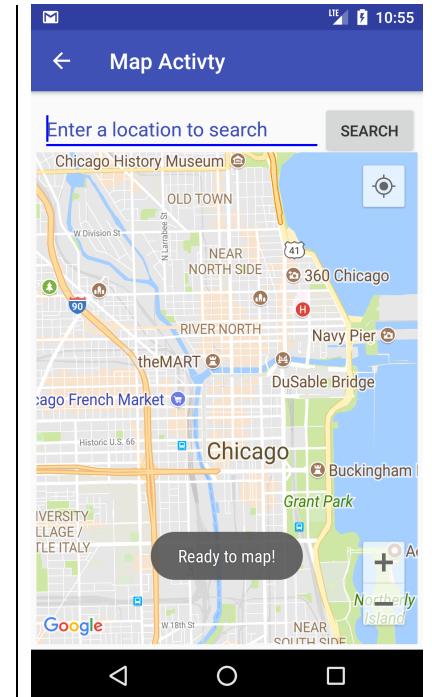
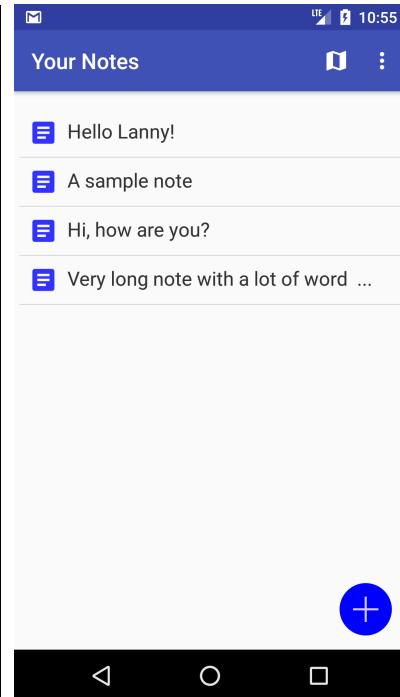
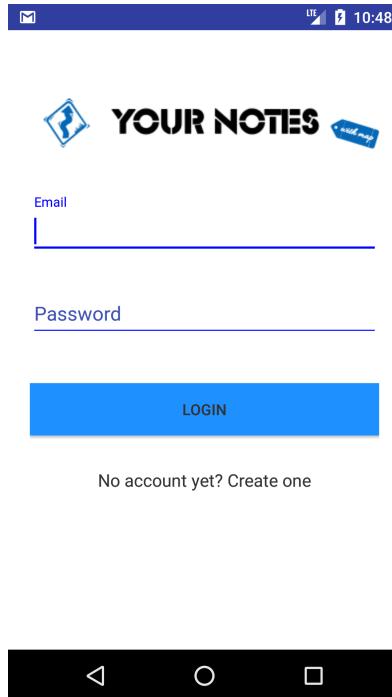
3. Overview:

This app is used for taking notes and searching locations on map.

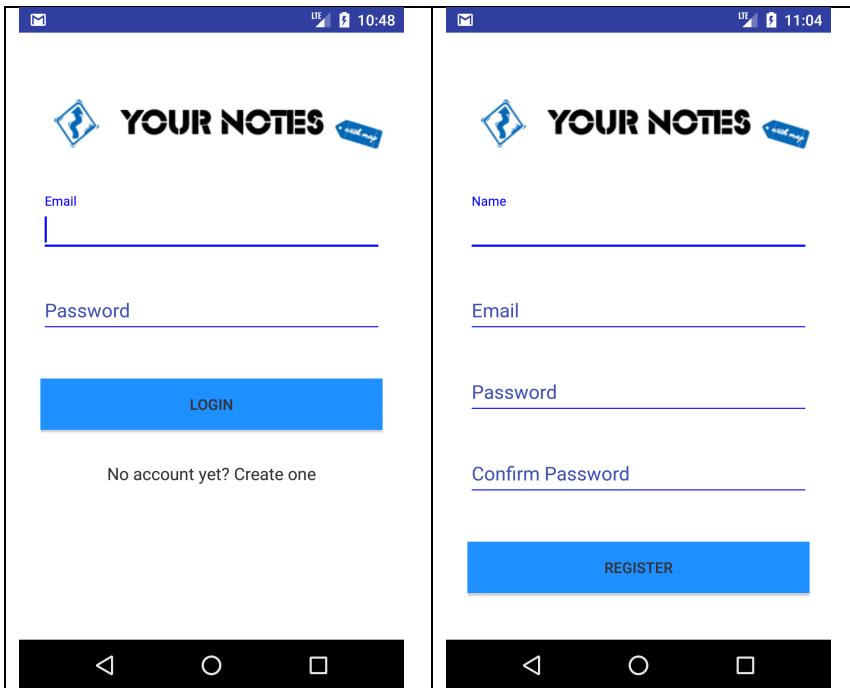
After registration, users can log in and use the app (Users' information is stored in SQLite database). In the main screen, users will see a list of already created notes and they are able to create an empty note, edit an existing note, and delete either one note or all of the notes.

There is a map button on the menu bar, after tapping that button, users can search for certain location, see their current location, drag and place markers, click on a marker to show detailed information about it and draw lines between locations.

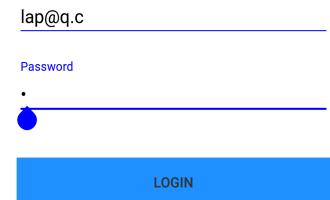
4. Main screens:



1. Log in/ Registration:

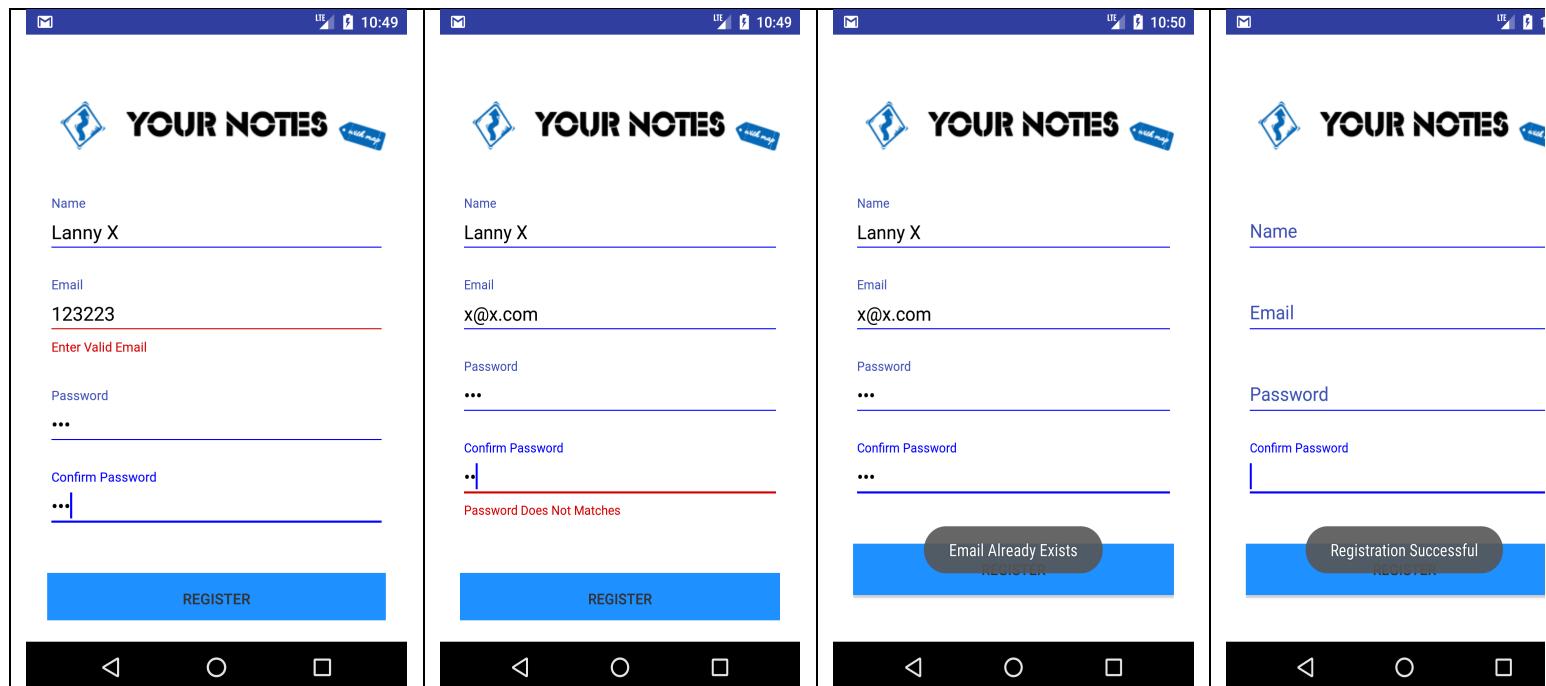


The entry screen of this app, if users don't have an account, they can create one in registration view. Log in page will check to validate the input text fields and verify login credentials from SQLite for format errors, not match errors, or wrong email/ password error.

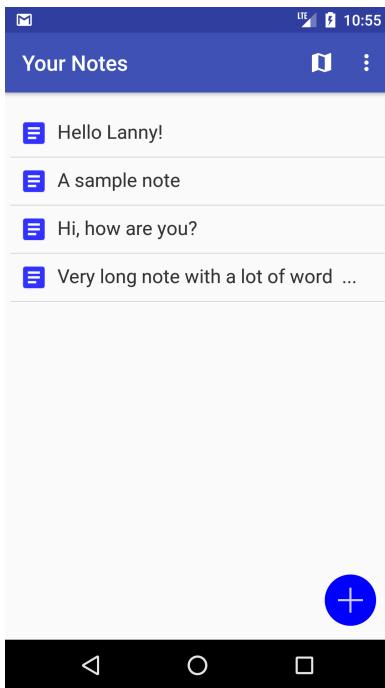


All the information is stored in SQLite database, the registration will validate the input text fields and post data to SQLite, and it checks for text/email format, password not match error, email exists warning. It will pop a successful message in the end.

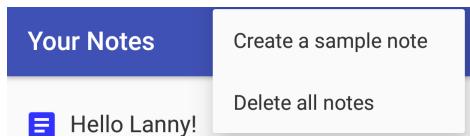
No account yet? Create one
Wrong Email or Password



2. Notes List view:



Users can choose from touch on any row, floating button or menu option from the screen and navigate to next activity.



Create a sample note in list view as shown. Or delete all notes.



By tapping this button, it will lead to create new notes activity.

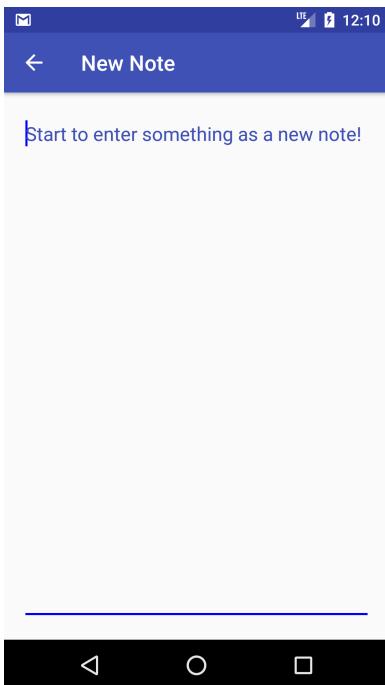
≡ A sample note

Users can update and delete certain note by selecting on that row and see the details of it.



This map button will take users to the map activity.

3. “New Note” activity



Users can type in whatever they want to this note, and when they are done. Hit “←” button will save the note and take them back to Note List view.
Newly created note will appear in top of the list.

4. Note Editor -- Updating and Deleting note

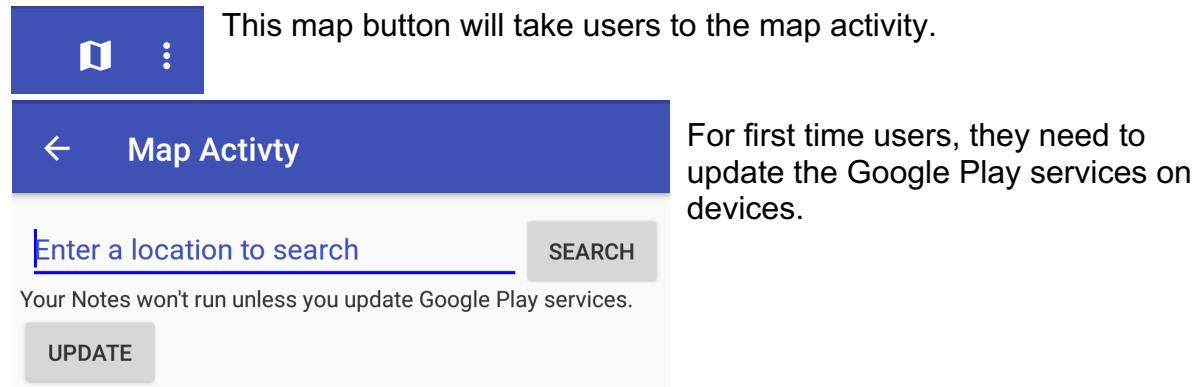
A sample note

Users can update and delete certain note by selecting on that row, app will navigate to Note Editor.

Two screenshots of a mobile application. The left screenshot shows the "Note Editor" screen with a single note: "A sample note update!!". The right screenshot shows the "Your Notes" screen with four notes listed: "Hello Lanny!", "A sample note update!!", "Hi, how are you?", and "Very long note with a lot of word ...". A blue circular button with a plus sign is visible at the bottom of the right screenshot's navigation bar.

See the screenshot, it updated note successfully.

5. Map activity, users can hit back button to go back to the Note list view.



1) Show users' current location.

<p>Map Activity</p> <p>Enter a location to search</p> <p>SEARCH</p> <p>Ready to map!</p>	<p>Map Activity</p> <p>Enter a location to search</p> <p>SEARCH</p> <p>Allow Your Notes to access this device's location?</p> <p>DENY ALLOW</p>	<p>Map Activity</p> <p>Enter a location to search</p> <p>SEARCH</p> <p>MyLocation button clicked</p>
Click the button as highlighted.	First time users will be asked to allow access device's location	Shows the message, and take the user from Chicago to current location!

2) Search location on the map:

Start like this.	Type "New York" in search box.	Show the message and show the map of NY.

3) Showing location information.



When user click on the marker, the app will show a detailed information about this location. Right now, it shows the latitude.



4) Users can drag the marker and place it to somewhere else or place new marker. It's easier to show in the demo.

5) Drawing activity: after place a second marker, draw line between them.

<p>Start from New York, long press on the screen to drop a second marker, and draw a line between them.</p>	<p>Start from New York, search Los Angeles from search box, app will drop a marker on there, and draw a line.</p>	<p>For fun, start from Chicago, Search for "Sydney", draw a line between.</p>

Final Project Discussion:

Featured APIs:

1) List View and detailed editable detailed view.

List view will show a partial note in one line on the main screen. And when select a certain note, the screen will change to the detailed view. User can input text in, and update it. The result will reflect on List view screen.

2) Touch input, touch events and Drawing.

In the proposal, I thought the drawing activity could be useful in notes part. But after looking into the lecture and power point. I decided to implement a line drawing function in the map activity. Even though it is not as 100% percent same as the sample code provided. I used the idea and successfully make several touch events to work: long press the screen will place a marker on map, and record its position; after clicking on this marker, user can drag it and move around; then place a second marker on map use the same long click method; and draw a line between them.

3) Google map API, not covered in class.

As I proposed, I decided to add a map API in this project. First, I had to get a Google Maps API key to make it work. Then, added the Google Play services library. Last, set the map to show. And after that, I added search features to display map based on its latitude; show current location feature so user can press one button and get to where the device is located and show the map; adding and placing markers like I have mentioned above.

4) SQLite database, not covered in class.

I am not sure if this should count as APIs, but databases are not covered in class. And after doing some researches, I decided to use SQLite because it comes with android and it is very light. I used SQLite to store user's registration information and the notes editor activity.

Biggest Challenges:

Using google map API and SQLite database are both somewhat challenge to me, because I decided to implement both of them, I then started to learn them. Contrary to normal production procedure, using what I know to build an application. However, learning is fun, and I don't regret to spend time on studying new materials which are not covered in class.

Limitation of my app:

I think the whole app is still very raw and simple, and there should have many possible ways to improve it and make it a better and more complex app to use. The sign in and registration are ok, but user's information can be extracted and each user sign in can see the notes created by themselves.

- Users can sign in using social networks' account.
- The notes can store more type of the input resources other than plain text.
- Users can share the notes via social network.
- The UI can be more user-friendly. Etc.

Mobile Application Development Experience: Encountered Limitation:

This is actually my first time to use IntelliJ, I have heard about it but I only used Eclipse before. So, this android studio is kind like a new experience to me. But I really like the studio, I think it is very powerful, because there are so many options that are very helpful: find the declaration in path, option+ return to optimize the code, right click → refactor as well as right click → optimize import.

However, when I was developing my final project, I found there are some flaws to android SDK and Studio. First of all, the SDK version evolves very quick and the build tools goes along with it too, some of the method are deprecated. And when I encountered some other problems, I searched online and found a way to solve it, but because it was earlier and different SDK, that solution did not work.

For example, in my map activity class, I learned to use .getMap() method to show the map. But because the getMap method is deprecated, I was forced to replace it with the getMapAsnc method and need to implement more for the activity. Because SDK version updates so quickly, I was a little worried if my very same code will run successfully next year.

Secondly, during my development of the final project, in order to build my project, the android Studio required me to make changes in manifest file and build.gradle(both project and module). I had to manually enter dependencies and other stuff, which kind make me nervous. I was afraid that I may enter something wrong and crashes the whole project. But luckily, that did not happen.

Overall experience:

Overall, this whole quarter of learning Android application development has been a great experience. After each coding assignment, the feeling when I saw how my own app started to run, and ran properly as I expected is very magical and hard to describe. I still remembered my second app – the simple calculator. I couldn't be happier to see it really worked.

I have taken applied algorithms, databases and programming language classes before. But none of those class gave me this visual feedback and sense of achievement like this class did.

Like I have mentioned above, the Android Studio is very powerful, I enjoyed using it. Another positive experience is by completing this “Your Notes” project, I have learnt the full cycle of developing an application. From the backend – SQLite database to Java code that makes the whole application running. To the frontend, user interface part – by implementing different views and xml files to make the application looks good.

I believe this kind of project and experience will help me a lot on resume and finding jobs in the future.

I didn't really have a bad experience during this quarter's study or being as an Android developer. Besides what I mentioned above in encountered limitation part. I still think the deprecated functions or methods are a bit annoying. And with the Kotlin came out, I am certain that in the future more and more java functions will deprecate and I will need to read more Kotlin documents to develop an Android app. But I guess that is not entirely a bad thing.

In conclusion, I have learned a great deal about Android, Java and OOD from this course, and I look forward to be a mobile app developer in the future. And I want to thank you, professor Jia, for teaching me this quarter, I hope you enjoyed the holidays!