



LEXTRAT

FINAL PROJECT REPORT

OCT 2019

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APPLICATION



There are moments that we, University of Sydney (USYD) students, have to stay on campus waiting for something for some reasons, or just want to do some meaningful things to kill time. Auditing a lecture being held around us would be a desirable idea. This is the motivation of our project, and it is named as "Lextra", a combination of "Lecture" and "Extra".

Here are the reasons why it matters. To begin, it could increase the enthusiasm of lecturers. Our group has conducted an oral survey with three lecturers, asking about how they feel when other faculty students attend their lectures as a way of killing time or personal interest. They all show a positive attitude and are willing to see more students in their

lectures. Our group deduces by guiding students to self-interested lecture theatres could give fuel to lecturers' enthusiasm, and hence the quality of lectures could be enhanced.

Another reason is that by auditing lectures being held, one of the influences is that students' interests could be discovered. Attending other faculties' lectures presents students unusual experiences they do not have in their faculty. It could help students border their view, spotting any potential business problems. For instance, one of the founders of Harrison A.I. was studying a medical degree when he started to learn A.I. as a personal interest. He spotted the potential business values by combining

A.I. with medical problems and are earning millions of dollars. Therefore, we conclude that using our app could lead to a similar result. Students could discover more possible business value.

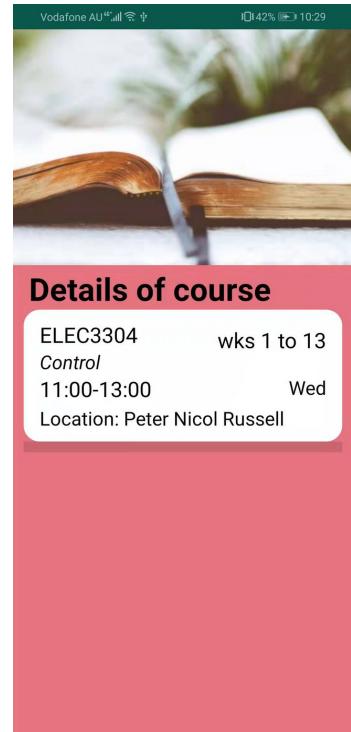
In conclusion, Our application matters because it could help students discover potential business value and could help lecturers be more enthusiastic about teaching.



WORKFLOW



Type the UoS and tap the search icon will display this UoS's detail



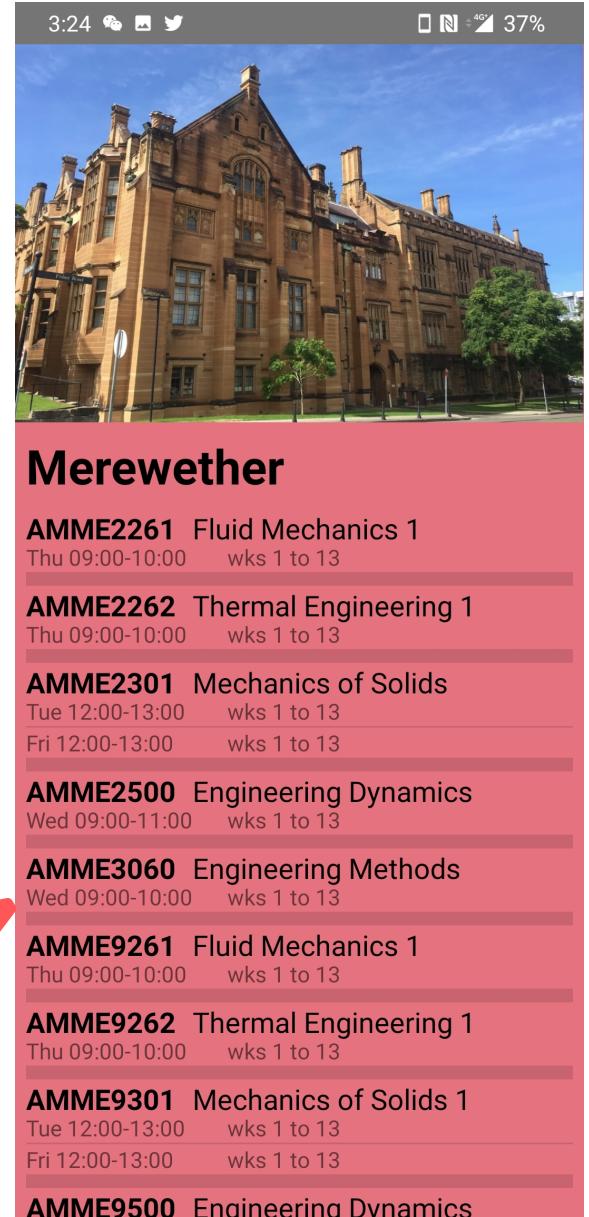
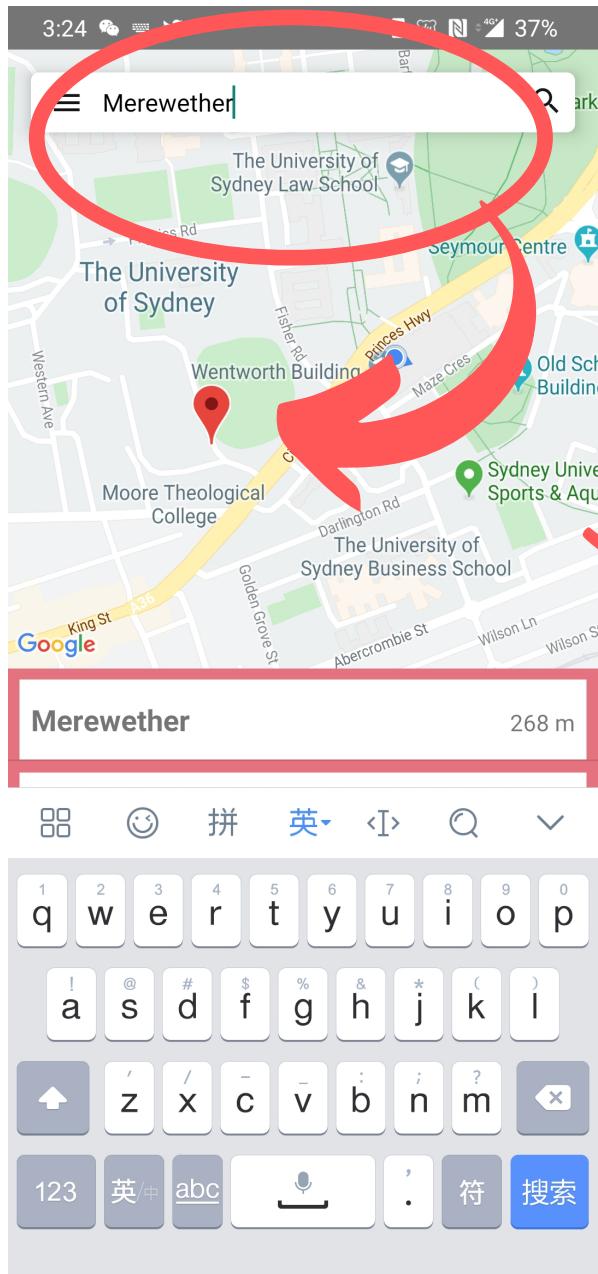
1. Choose one building

2. Tap here would open google for direction



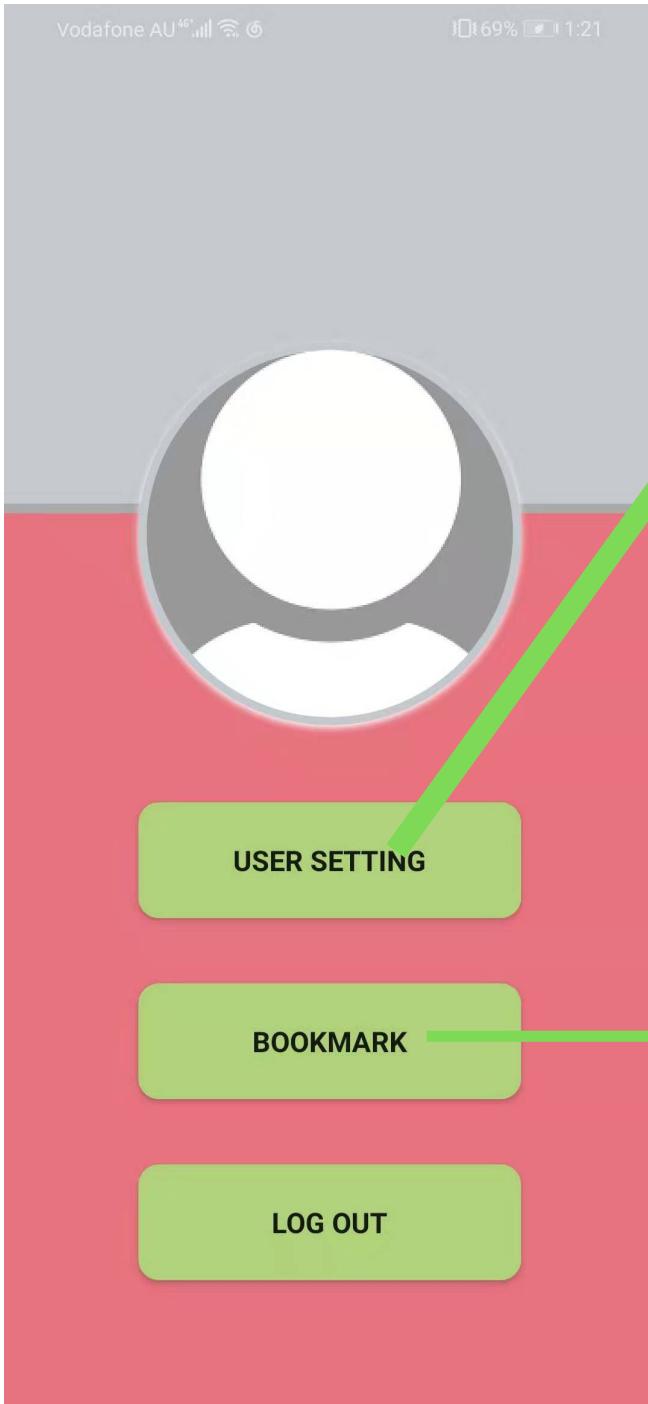
Google

WORKFLOW



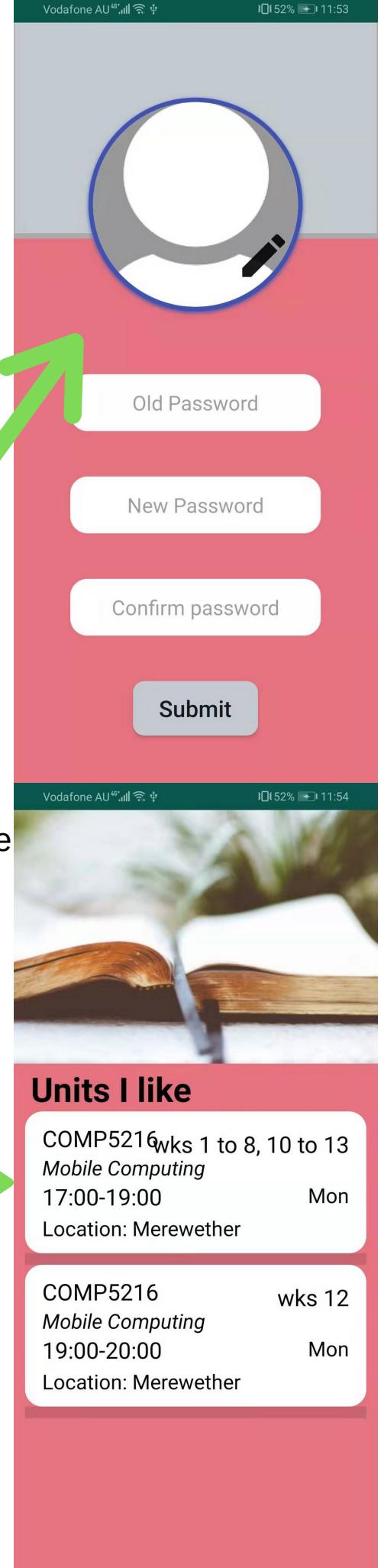
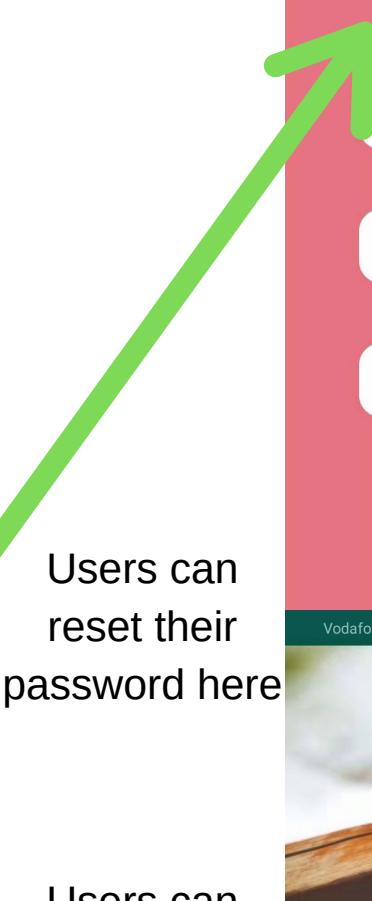
Building detail page

WORKFLOW



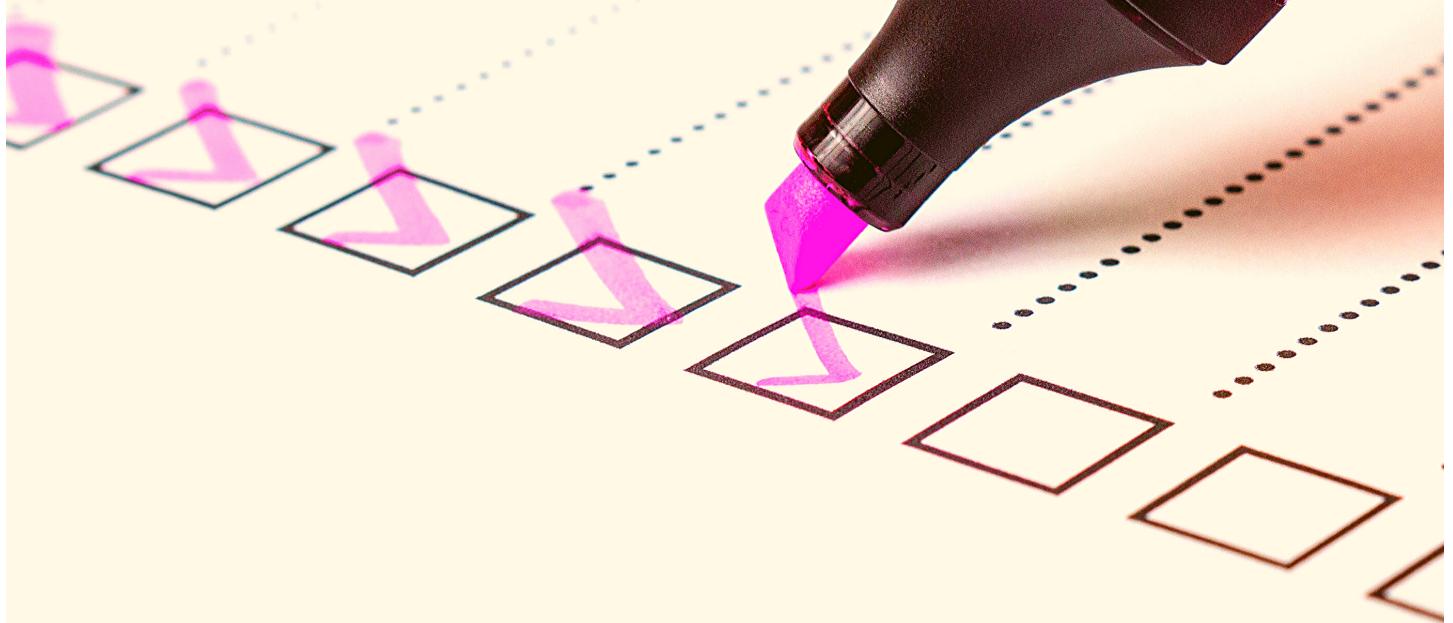
Users can
reset their
password here

Users can
view their
preferable
UoS



Sidebar

VALIDATION



As our application mainly focuses on fetching user's GPS position continuously, the optimisations are mostly about optimizing GPS configuration.

Here is the list of optimizations:

- Choose low GPS accuracy for saving battery.
- Long GPS refresh interval as in use case, our app does not require intensive refresh interval.
- Close GPS services when users are not using GPS. For example, users are in other pages.
- Energy priority: select balance for energy priority when using GPS.
- Integrate 'SharedPreferences' API into authentication to reduce the times of login.

CHALLENGE & SETBACK



Here is the list of achieved goals proposed at the proposal phase:

- Users can create an account and can log in via their account.
- Users can reset their passwords.
- Users can search for a unit of study (UoS).
- Users can swipe the map to find nearby units of study.
- Users can long click to delete the bookmark.
- Users can click shown markers to open Google Maps for redirection.
- Users can view building information directly in the marker information page.

Here is the list of unachieved goals:

- Only allow University of Sydney (USYD) students to create an account.
- Users can filter UoS.
- Users can click shown UoS to view more information.
- Users can rate lectures.
- Users can see commencing UoSs.

CHALLENGE & SETBACK



Our group achieves 60% of the goals (the actual rate is higher, 75%, as some non-achieved goals are merged) proposed in the proposal phase. There are four reasons why our group cannot achieve the other 40% of the proposed functionalities.

- Some goals are merged into other goals.
- Underestimate the difficulty.
- Group member health condition.
- Non-proficient project management

To begin, the third unachieved goal, 'Users can filter UoS', is not achieved because our group find that it can be integrated into the autocomplete search functionality. Users can get a list of suggestions of UoS via autocomplete search. Hence, the goal, 'Users can filter UoS', is merged into the search functionality.

Another reason is the member's health condition. The developer developing the fourth to sixth unachieved goals needs special consideration in the last week, and cannot complete these functionalities on time. Therefore, after deliberation, our group decides to discard the fifth and sixth goals, and transform the fourth one into a similar functionality, 'Users can view UoS information directly in the marker information page'.

The next reason is an underestimation of the difficulty. For the first unachieved goal, 'only allow USYD students to create an account', its difficulty is underestimated. Our group notices it is challenging to verify if one user is a commencing USYD student, neither alumni nor USYD staff. Consequently, we decide to allow anyone to use our application.

CHALLENGE & SETBACK



The most significant reason is the lack of Project Management (PM). The lack of PM leads to an unclear milestone timeline, such that allocated tasks are not completed on time. It results in panic. On the other hand, the loss of risk management directs to a situation where risks are not handled. For instance, the member health risk is not handled properly at all such that some goals are not achieved. Therefore, poor PM in our group leads to the degradation of functionalities or the absence of proposed goals.

In conclusion, the reasons are:

- Some goals are merged into other goals.
- Group member health condition
- Underestimate the difficulty
- Non-proficient project management

NEXT STEP



At the end of this project, we actually did not achieve majority of the proposed functionalities. Hence, if possible in the future, the following steps would be executed chronologically:

1. Evaluate what is done perfectly and what needs improvement.
2. Appeal USYD funding and cooperation (provide API etc.)
3. Start next development circle.
4. Implement unachieved functionalities
 - a. Instead of displaying all lectures, display commencing lectures.
 - b. Allow users to view building details directly by tapping a marker.
 - c. Allow users to save preferred UoSs.

APPENDIX



Third-Party Resources

- Google Map API
- Firebase
- Figma for Graphic Design
- USYD online timetable
- Canva
- com.mikhaellopez:circularimageview:4.0.2
- SharedPreferences

Build and run our app in IDE

- Pull repository from Github or download the zip project file
- Open Android Studio.
- Open the project folder.
- Follow the instruction on Android Studio Official website:
<https://developer.android.com/studio/run>

Requirements for installing on devices

- Minimal SDK Version: 26
- GPS sensors should exist.