Proposal for Orbital 2020

Team Name:
AcademicSOS

Proposed Level of Achievement:
Apollo 11

Motivation

What happens if you still do not understand a concept in one of the modules, even after looking through the module forum in Luminus, re-watching lecture webcasts, browsing online videos as well as attending face-to-face tutorials of a module?

The next likely step you will take will be either sending email to Professor via Microsoft Outlook or message the Teaching Assistant of your allocated tutorial slot via WhatsApp or Telegram personally for help. Most of the time replies normally take hours and even days depending on the busy schedules and availability of the Professor or the Teaching Assistant. In the worst-case scenario, the replies through emails and phone messages might not give you a clear understanding you are looking for.

At this point, it seems better to look into the conventional way of face-to-face consultation to clarify all the problems you have in mind all at one go. However, the next question you will ponder is how to arrange a meet up with the Professor or the Teaching Assistant since it is so hard to reach them through emails and messages?

The current methods of booking consultation are:

LumiNUS:
- However, not many people know of this feature in lumiNUS and tend to email professors instead.

Email:
- Professor emails get spammed very often and might miss out certain consultation emails if there are too many students emailing them around the same time.

Messaging:
- It is very informal and likewise, some TAs might be spammed by chats from their students and it is difficult to sort the chats between their friends or consultation requests.

Aim

We hope to make a consultation booking mobile application that allows fuss-free arrangement of physical consultation between students and teaching assistants (TAs) or professors. Consultations should be booked easily by students. Likewise, TAs should be able to approve these consultation bookings conveniently. Since the Professor is one of the busiest, all they have to do is to open up booking slots during their limited free time to entertain students with questions. Hence, the application also aims to help Professors and TAs out of the current situation where they are spammed by tons of emails and even messages every day.

User Stories

Students

1. As a student who has questions and problems even after re-watching lecture webcasts and attending face-to-face tutorials of a module, I want to seek help from TAs/Professors who can clarify my doubts.
2. I want to be able to book consultation appointments quickly.

TAs

1. I want to arrange consultation sessions with my students easily.
2. In some consultations, I prefer to meet a group of students who are facing the same issues so that I do not have to repeat my consultation with other students.

Professors

1. As a professor who wishes to help students, I want to be able to allocate free time to meet up with students in a face-to-face session.
2. Currently, my Outlook email inbox is filled by consultations requests.

Features and Timeline

The mobile application allows for students to book consultations quickly, TAs and Professors can easily approve of these consultation requests and schedule for a consultation day. At the same time, TAs and professors would not have to worry about receiving many emails regarding consultations.

The **Login** screen will determine the identity of the user whether the user is a student, TA or professor using the NUS email account. Depending on the different roles, the users will have different features to use.

Requests for consultation are for students to book a consultation slot with the TAs of their tutorial group. The consultation booking is only open to TAs and not to the professors as professors will most likely be very busy with managing the course.

Viewing of public consultation slots is where students can view the public consultation slots that are opened by TAs and professors. These public consultation slots are open to anyone in the course and students can join in on a first come first serve basis.

Viewing of consultation requests feature is for the TAs. TAs can choose to accept or reject consultation requests from their students. If they wish to reject the consultation booking, they have to state a reason why they are rejecting the students' request. (e.g. "I am not free that day, how about booking one on Tuesday at 4 pm?")

Suggesting a consultation slot can be used by the TA when he/she rejects a request because he is unavailable for that day, but if the TA wants to suggest another day for the consultation, he may do so with this feature.

Creating a consultation slot is used by TAs and Professors to create a public consultation slot where all students in the module can come for a consultation.

Upcoming consultation reminder reminds all users about the upcoming consultations one day before the actual consultation.

Demerit point system applies to students who request for consultation but did not turn up. This will result in them obtaining demerit points which will affect student's priority when requesting for consultation slots for that particular module of the current semester.

QR code will be used for attendance taking where TA/Professor will be able to let students scan QR code upon arrival for consultation and mark attendance for contact tracing purposes given the current Covid-19 coronavirus.

Login (3rd week of May)
- Login Screen
- Determining Student / TA / Professor

Requests for consultation (4th week of May)
- Request form to fill in (limit to 2 per week)
  - Size of group
  - Consultation topic textbox
  - Date field
  - Time field
- Add to database branch upon request

Viewing of consultation requests (1st week of June)
- View consultation requests in list view
  - Priority based on first request order & low demerit points
  - Buttons to accept / reject
    - Rejection reason
- Update database to reflect changes

Suggesting a consultation slot (2nd week of June)
- Button to suggest another consultation slot
  - Date field
  - Time field
- Update database to reflect changes

Viewing of public consultations (3rd week of June)
- Show consultations of the module selected in a list format
  - Button to join public consultation
  - Button to exit public consultation
- Update database to reflect changes

Upcoming consultation reminder (4th week of June)
- Reminds users when they have an upcoming consultation exactly 24 hours before the consultation

QR Code (1st week of July)
- Generation of QR Code
- Scanning of QR Code to retrieve consultation data
- Updating database based on QR code data

Demerit Point System (2nd week of July)
- If user do not show up on consultations, add demerit points

Tech Stack
1. React JS
2. React Native
3. Firebase by Google
   a. Real-time Database
4. node-qrcode by soldair (https://github.com/soldair/node-qrcode)

Qualifications

Kai Xiang
Programming Languages:
- C++, C#, Java

Project Experience:
- Involved in final year project design module in polytechnic, which requires the implementation of a LED Wifi-controlled cart using Arduino software and controlling the cart through an Android application built using MIT App Inventor.
- Represented polytechnic in Singapore Amazing Flying Machine Competition and involved in the design and fabrication of the parts of the quadcopter.

Marcus
Programming Languages:
- Java, Javascript, C#, VBA, Python

Project Experience:
- Created a facial recognition system for an office door (OpenCV in Python)
- Personal portfolio website (CSS, HTML, Javascript, Bootstrap)
- Anime Reminder telegram bot (Selenium, PyTelegramBotApi)
- 2D dodging of falling meteors game (C#)

Work Experience:
- Created an Android Application (Java) to communicate with embedded system (C)
- Automated spreadsheets for data cleaning (VBA)