Interface Design Report

Vtutor

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1. Problem description and motivation

A considerable number of students have a hard time dealing with their course materials. It is obvious that the time of office hours is usually too short to help all students with their study. Especially during the exam period, the academic pressure and even the inefficient time management make student hard to be fully prepared for the upcoming exams. Therefore, students really wants to find tutors with similar major and from the same university in order to help them with course materials.

From the tutors' perspective of view, they want to increase the number of their students. However, the current teaching websites are inefficient because of limited users, inconvenient conversations and scattered locations between tutors and students. In our opinions, if there is an application on mobile platform, this issue could be effectively solved.

As for the problems and disabilities from students and tutors. We decide to make a new mobile application that can help students and tutors at the same time. The application that we designed should have the following properties: it allows tutors to post their ads on the list. Correspondingly, students can search through the list in order to find what lecture they want to get helped with. Moreover, students and tutors can chat online and make appointments directly. Lastly, the application should support the safe and quick online payment function, and students can leave feedbacks after the lecture. Overall, the design of the application should be satisfied and enjoyable to use.

2. Existing solutions that address the same problem/need

There are some solutions that address these problems:
The first solution is a website: Help Hub (https://helphub.me/).

When students need help, they can post questions on the question board and chose the right subjects that relate to their question. Tutors who have included that subject in their profile will receive a reminder in their inbox. Tutors will be notified via email and the question will appear in their inbox. They can choose to respond to the question directly from their inbox and the answer will be sent to the students. All the users can see this response through the question board.
Students can receive tutoring through chat or video/voice calls. If tutors or students want to meet face by face, students can use search to find the tutors who meet student's requirements and chat with the tutor that they preferred. On the other side, tutors can post their ads on the website and wait for the students to connect them. Tutors can use the calendar to schedule sessions and request payments automatically. Students can either "tip" over chat or request a video/phone session from their profile and pay the fee.

The second solution is **findAtutor.ca (**https://findatutor.ca/find/tutor/4/0/1/8**)**

This is a website for Canadian students to find tutors. Students can use the search options in the search box to find a list of potential tutors. Student can find the search box on every page of this website. Students can also use map to find tutors who are in the same area with the student. In the search box, students are able to select different levels of tutors, such as high school tutors, elementary tutors. This website provides an efficient way for tutor post their advertising. Tutors can have all their advertising in one place. With a listing on this website.
Tutor will have the control of their advertising. They can post advertising when they need clients, and clearing the list when they don't want to do tutoring. Tutors can also join the community of private tutors, find support and resources in the tutor's forum. This can help a tutor grow his own business.

3. Your proposed solution in terms of the "idea"

In order to help both students and tutors. We decided to design a mobile app that can help student to find tutors easily. The reason we chose mobile app is that most people carry their cell phones all the time. Therefore, our app could be used almost at any place and any time. On one hand, students could find tutors through “Recommendation” from the system, and “Search” tutors who are in the same area. On the other hand, tutors could post ads through the system. Users could find their targets easily, because this application would attract plenty of users due to the convenient and useful system. When student and tutor made a deal, they could set an alarm in the calendar of the app. This calendar would remind tutors and students before the meeting come. After a tutoring, students can either pay by cash, credit card, debit card or PayPal through the app. Students could also leave feedbacks for tutors. The rating of tutors would affect the rank of them in search list.

4. Personas we developed:

Personal 1: Teresa (student)

Teresa is a 20 years old math major student, who lives in Victoria. She takes 5 courses this semester. Teresa has some problems with her math 202, she usually finds the class assignments is hard to understand and complete. Even though she spends lots of time on it and attend every lecture. Since she feels struggling, she goes to office hours and tutorials, but she thinks this can only provide limited help. Besides, tutorial cannot provide too much help for understanding the course material and assignments. Unfortunately, Teresa almost failed her midterm, she doesn’t want that to be happened again on her final exam. Therefore, she really wants to find a similar program tutor to help her with high teaching quality that help her with the course materials.

Personal 2: John (tutor)

John is a 23 years old graduate student majored in Math at Uvic. He lives with himself and rents an apartment in downtown Victoria. He usually spends big amount of money on his rental. The rent price is increasing with a fast rate in Victoria. Furthermore, he also needs extra money for his study research. John also wants to help those students who is struggling with math in Uvic. As for these reasons, he starts thinking about being a tutor to help him pay the bills. He doesn't how to starts, he used to posted to his lecture advertisement on several websites, but still no one replies. John wants to find an application that he can easily posted his teaching course information and students from the same university or even local area are able to see it.

5. Scenarios and use cases

Scenarios 1 : Teresa (student)

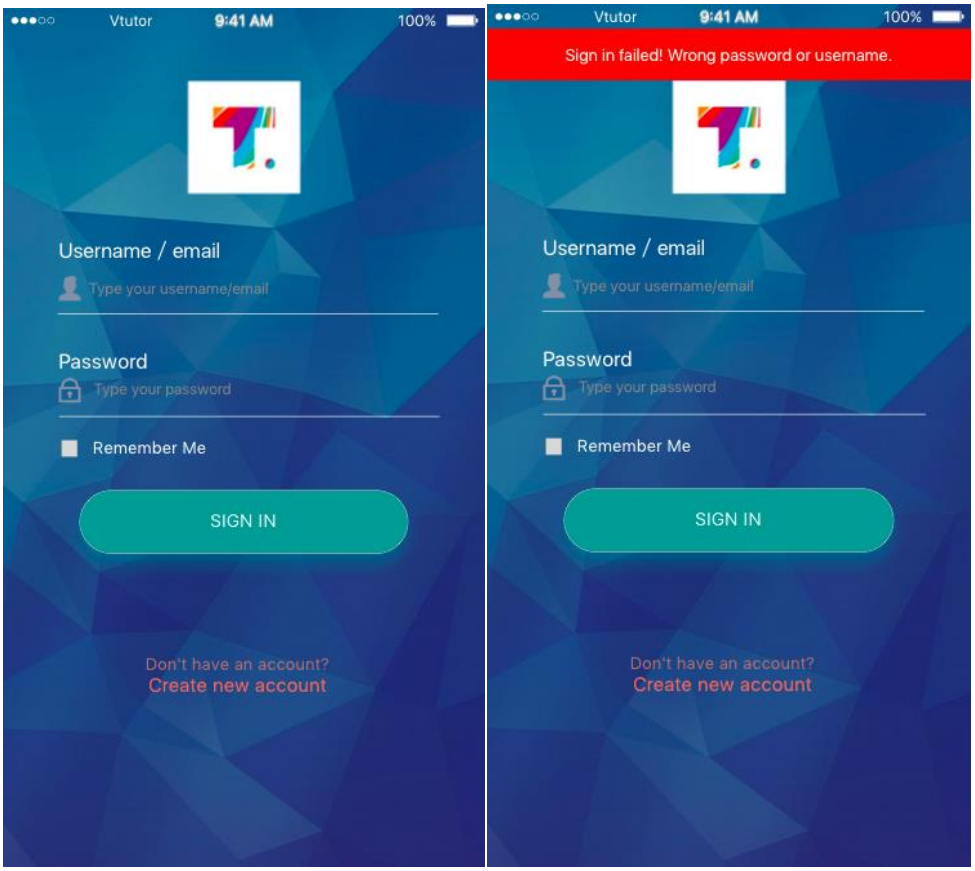
Teresa wanted to find a tutor who can help her pass the final exam. She opened the Vtutor app and looked through the tutors list there. She found an experienced Math 202 tutor with high evaluation and reasonable price. After that, Teresa got contact with this tutor and had a brief conversation with him, showing him her current situation and demand. Then they arranged their review plan, decided the payment method, and made appointments. After half a month's effort, with the help of the tutor, Teresa finally passed the course. At last, Teresa left a 5-star evaluation and his feedback to the tutor.

Scenarios 2: John (tutor)

John downloaded our app onto his phone. He opened the app, and created a user account, which can be used both as tutor and student. After he signed in, he completed the personal information form and related experiences background. Then, John described the specific fields that he is experienced and uploaded the personal transcript in order to prove his teaching abilities. At the same time, he began to look for the current student request which is related to his academic field. Unfortunately, there is no related information posted. So he decided to wait for a little bit to see if there is request from current students or not.
Two days later, John received a message from a student. They communicated using the chat function on app, and set up a time and location for the first meeting. Lastly, John got his paid and also the student received good teaching materials. They both gave each other good feedback and evaluations.

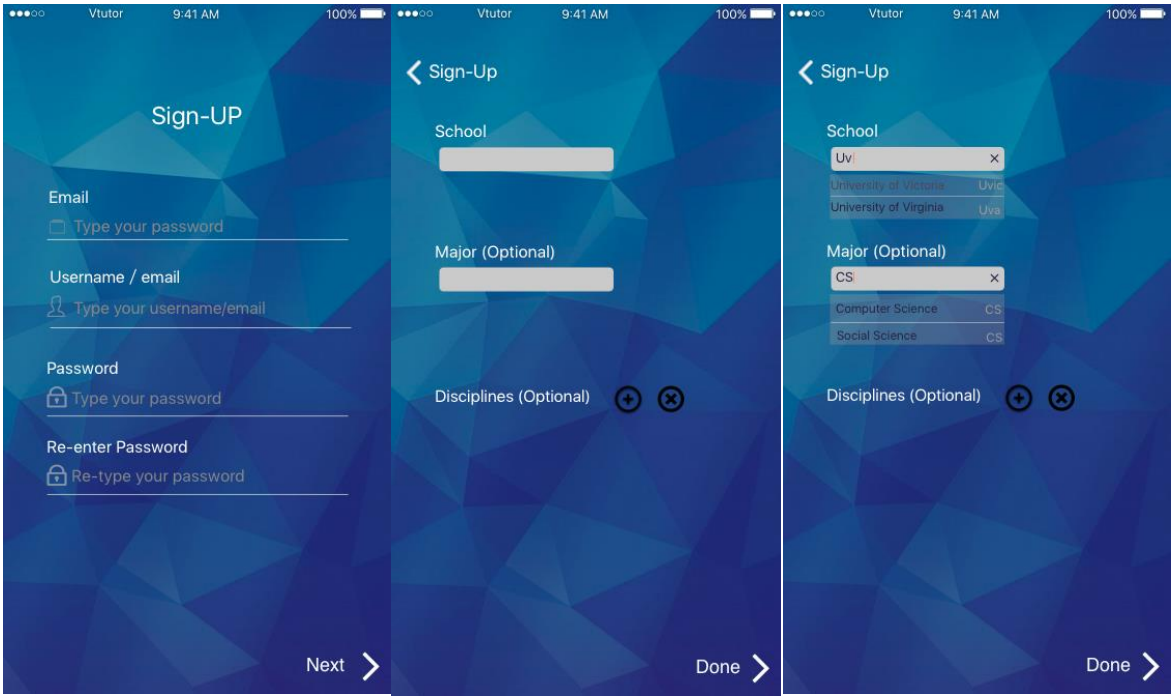
Use cases:

1) Login



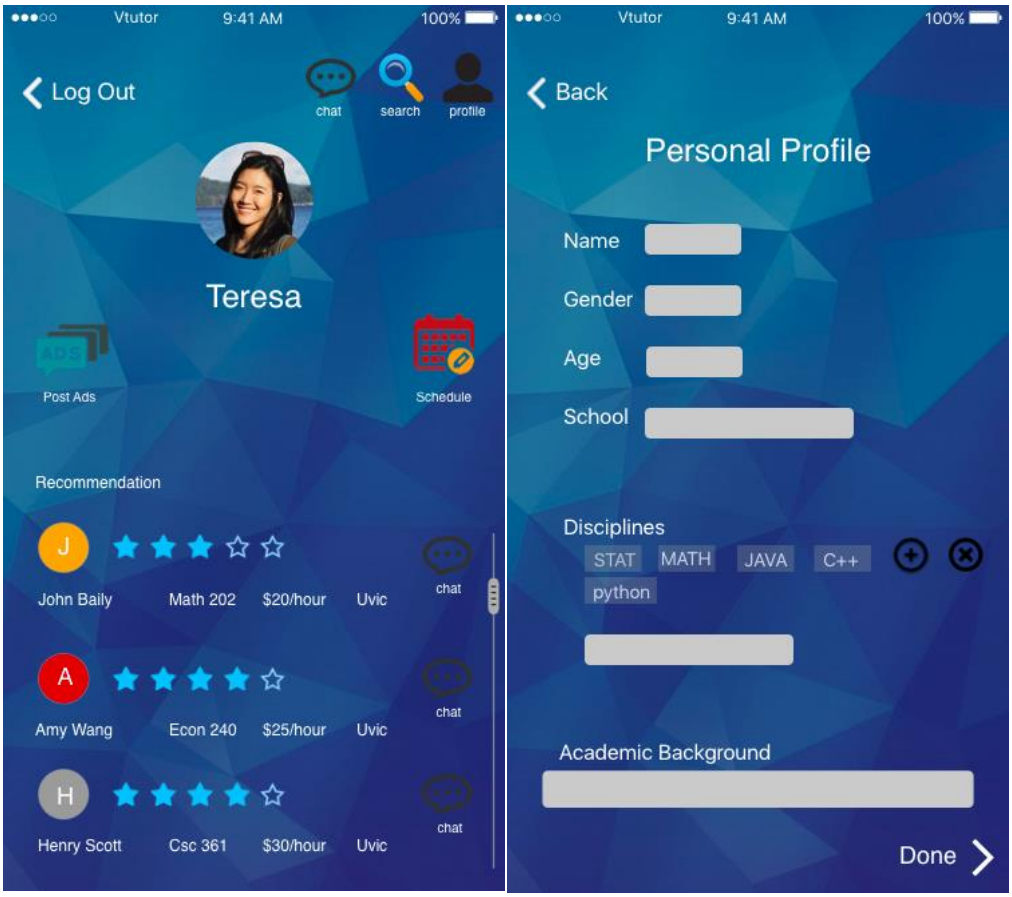
- The user types in their username and password through login page
- The system checks user's' account information and logins in if the information is correct
- The user wants to find out more information and the software use clause
- The system provides related information and description about the software

2) Sign up



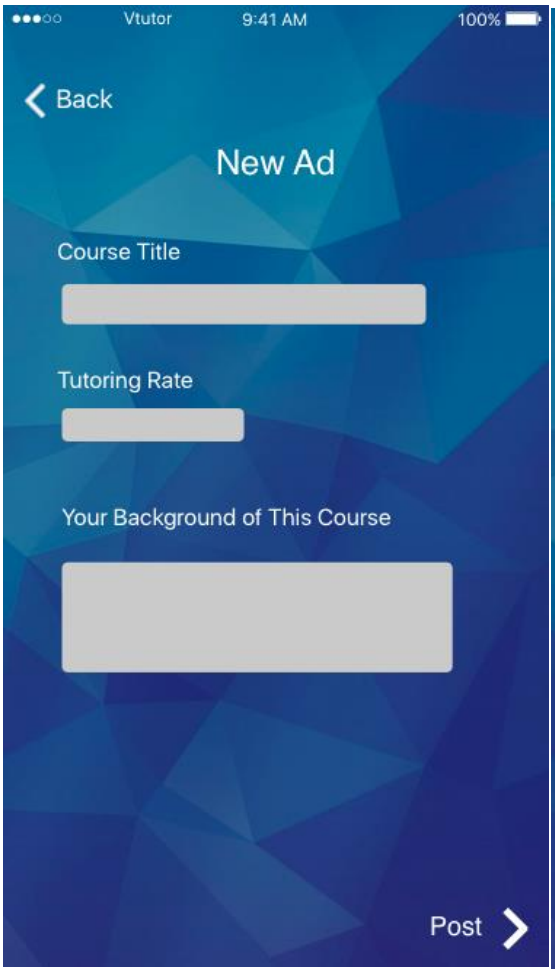
- The user wants to create new account.
- The system links to the signup page
- The user enters their account information
- The system links to the next page with specific personal information
- The user chooses their school, major and disciplines at the current page
- The system creates the account with the information users provided and logins in

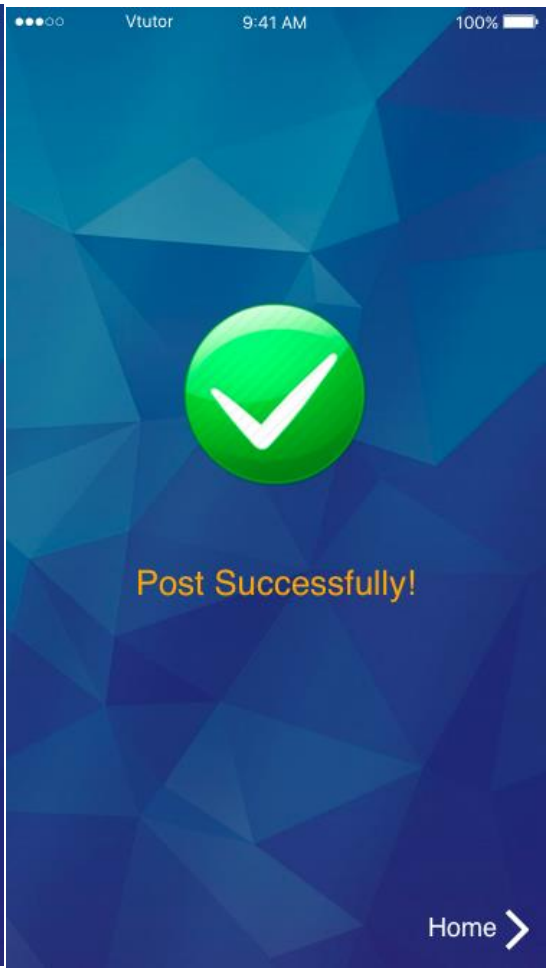
3) Edit profile & post ads (tutors only)



- The tutor wants to edit their personal profile
- The system links to the personal profile
- The tutor edits personal information in the profile page(Name,Gender, Age, School, disciplines, academic background and experiences)
- The system saves tutors information

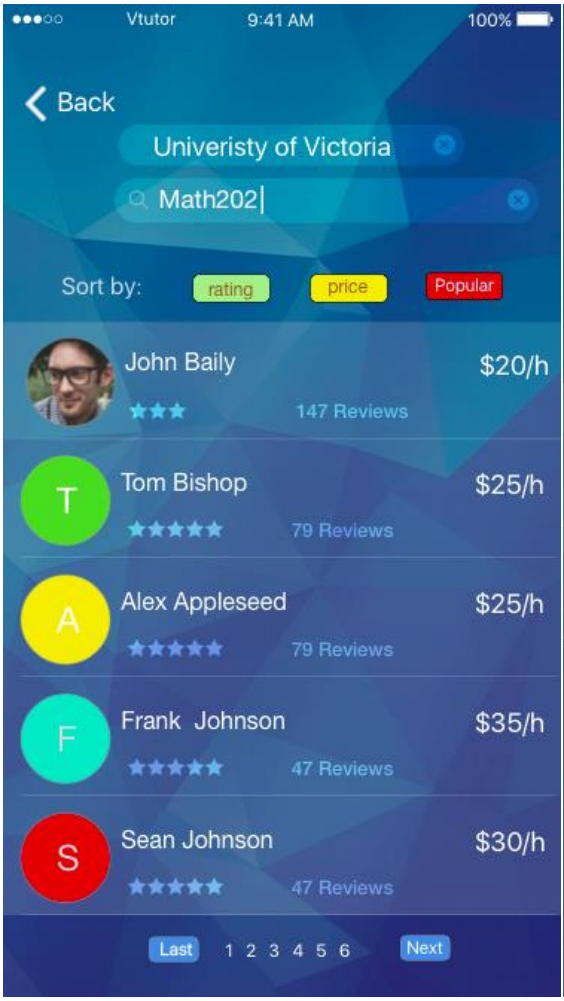
4) Post ads (tutors only)





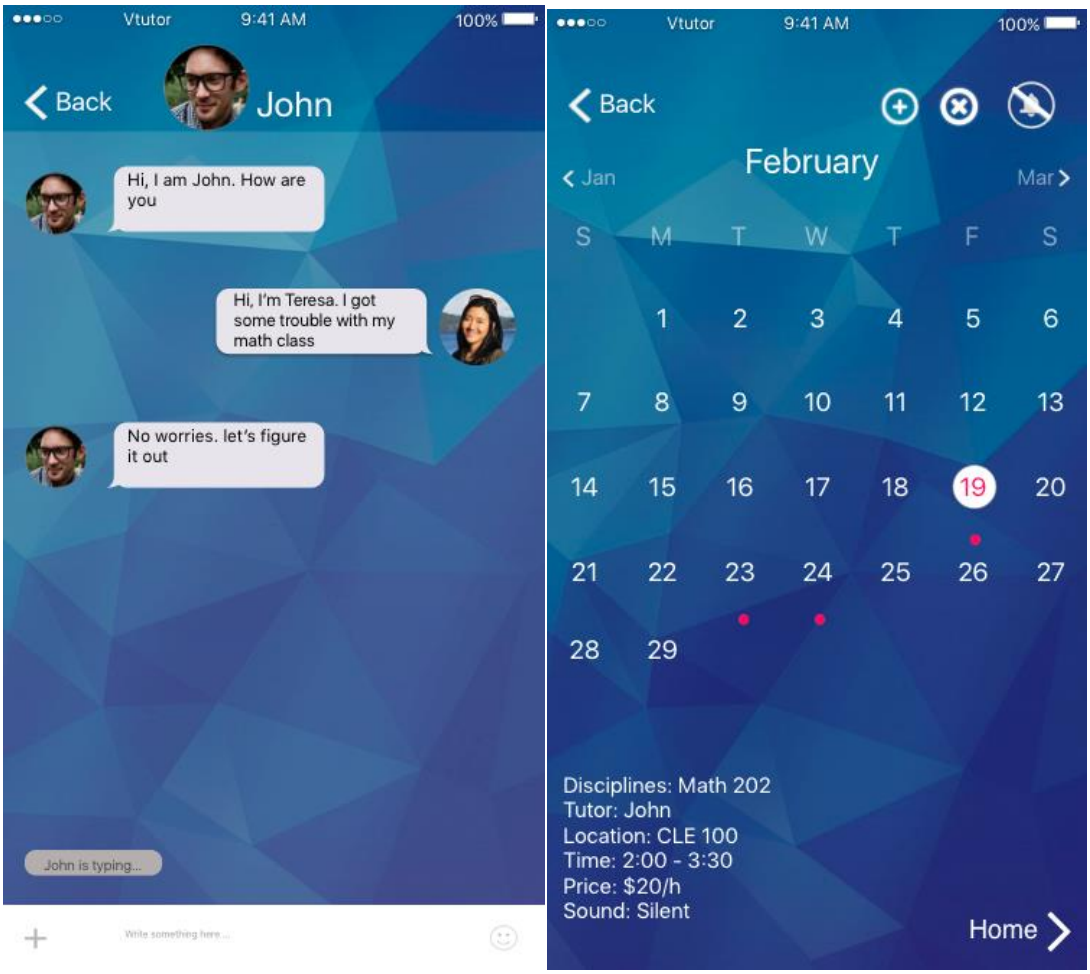
- The tutor want to post the ad through the main page
- The system links to the advertisement page
- The tutor enters the related course information
- The system posts the ad with the information that tutor provided

5) Search (students only)



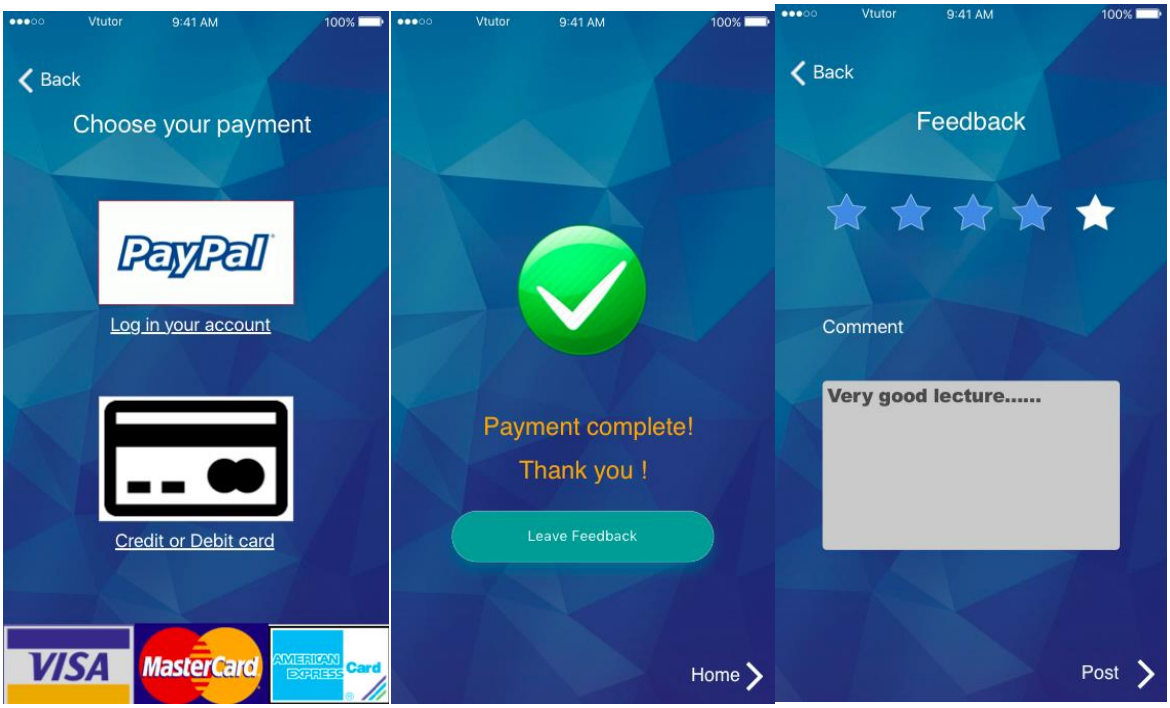
- The student wants search tutors
- The system then links to the search page
- The student types the course keywords in the search bar and chooses the university
- The system lists the related tutor found based on the search information with tutor's personal information and sorting by rating, price or popular

6) Chat & appointment



- The user wants to communicate with their tutors and asks more questions
- The system links to the chat page.
- The user checks the calendar
- The system links to the calendar page
- The user adds the booked lecture in the calendar
- The system saves the current data in the calendar

7) Pay & feedback



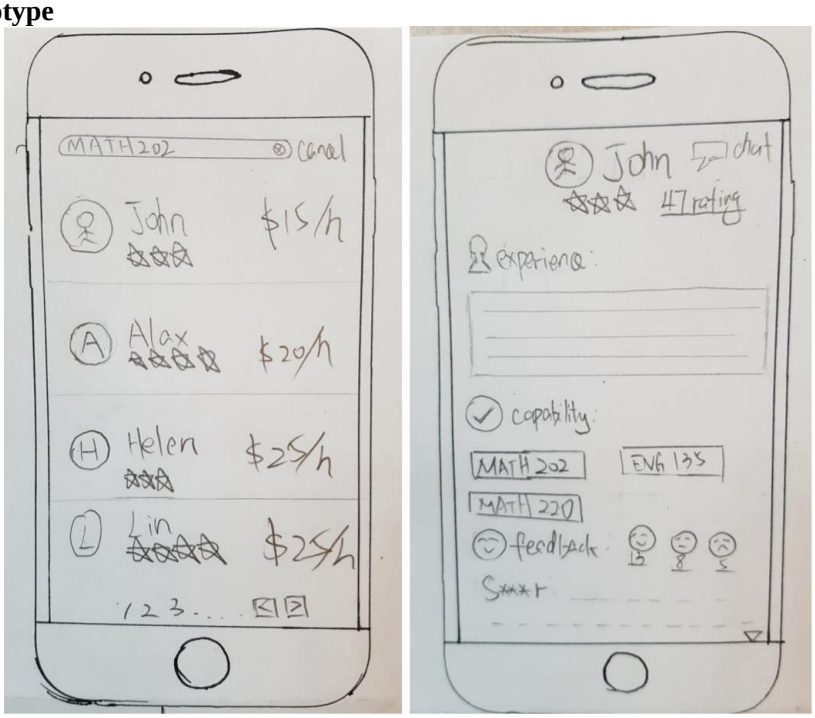
- The student pays the lecture fee and chooses the payment method through the app
- The system holds the bill and transfers to the tutor's account
- The user rates and leaves feedbacks to each other
- The system updates users' information based on the recent feedback

6. Evolution of the prototype:

Use case example: search for tutors

When developing software interface, it is extremely important to keep evaluating and updating the prototype based on the demand of our target users. In this light, we developed our prototype through several evaluation steps: pilot study, user observation, and interviews.

Low fidelity prototype



After the concept development process, we generated our low fidelity paper prototype based on the existing problems, proposed solutions, personas and scenarios we worked with. After that, we received some feedback from our classmates through their cognitive walkthrough during the lab time. For example, in the case of search function:

1. No back button on the screen
2. It does not hint users which part is clickable and which is not
3. The paper drawing lack of aesthetic.

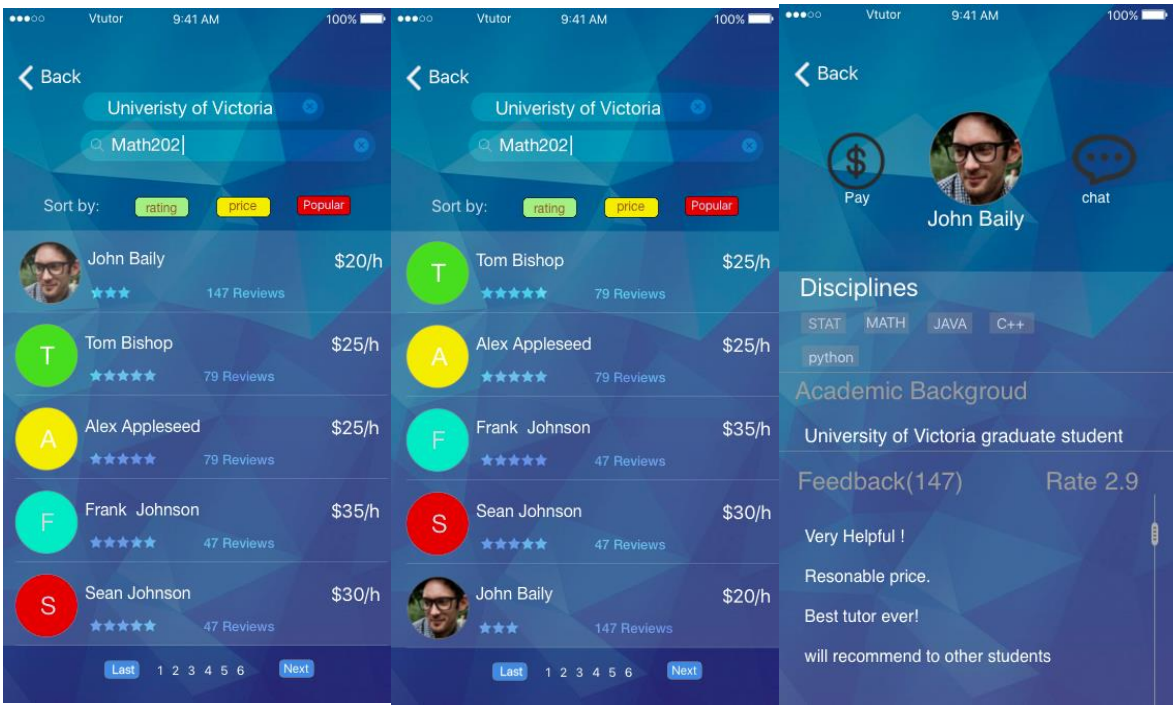
Medium fidelity prototype

Based on the feedback, we developed our medium fidelity prototype using Balsamiq. We added consistent back and next buttons on each page. In the "search" use case, we also added a school select box to narrow down the search result by what school the tutors were in. In addition, we made quite a few changes on the tutors' profile page to display info that are more clear and helpful. We replaced the experience input box with academic background info bar; we also replaced the capacity tags with disciplines labels as well, so that the tutor users can have a chance to show specific skills they have, instead of subjects they can teach. Moreover, we made a change on rating display, so that when calculating the average rating, the result would be more convincible.

We conducted a pilot study once we got our medium fidelity prototype. During the lab time, we showed our prototype to five of our classmates. And they were told to try the "search" use case we designed, answer some questions, and provide feedback based on their experience on our app. We first briefly explained the observation process, described the task, and asked them if there are questions; after that, we observed the whole process, took note of their behavior, collected data, measured the time, and filled our study handbook. In the end, we collected quite a few feedbacks from our testers.

1. They interface is simple and easy to read. (positive)
2. The information on the search list is all essential and good, no other information needed. (positive)
3. There's no tutoring rate showing on the tutor's info page. (negative)
4. Chat icon is hard to recognize. (negative)
5. Some buttons are not seem clickable. (negative)
6. Cannot sort the search result. (negative)

High fidelity prototype



Based on the findings of pilot study. We made several changes and updated our prototype using Sketch and Invision.

1. chose a dark blue wallpaper and set context color in light tint;
2. added three different sorting choices
3. updated new chat icon
4. Modified font size and button shape
5. found a profile picture for John
6. Decided to display tutor's full name instead of first name only

When we were considering displaying the tutoring rate on the tutor's info page, we suppose tutors might not have the same tutoring price on each of his course, therefore we kept our design.

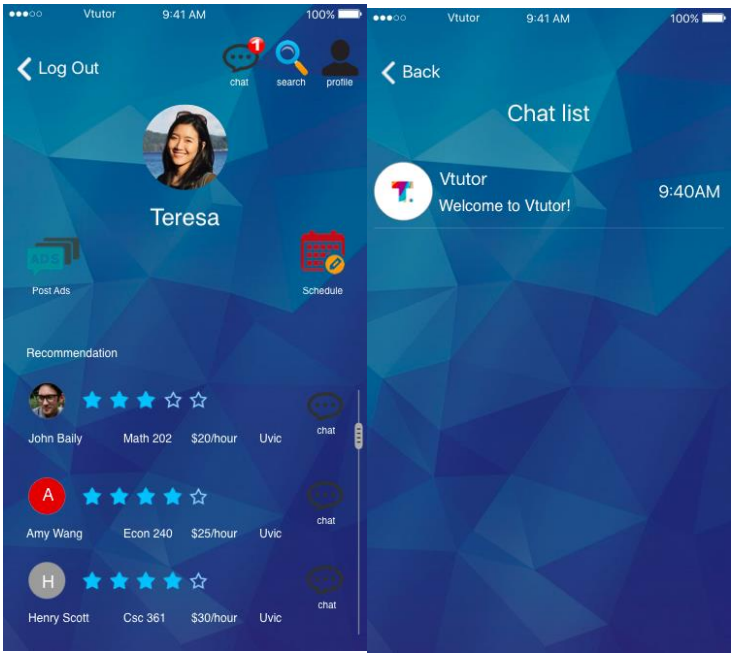
We recruited 10 testers and conducted observation and interview process using our updated prototype.

# of users	background	gender
2	undergrad CSC freshmen at Uvic	one male, one female
2	graduate social science students at Uvic	one male, one female
2	undergrad CSC TAs at Uvic	one male, one female
2	undergrad Math students at Uvic	one male, one female
2	people just graduated from University	one male, one female

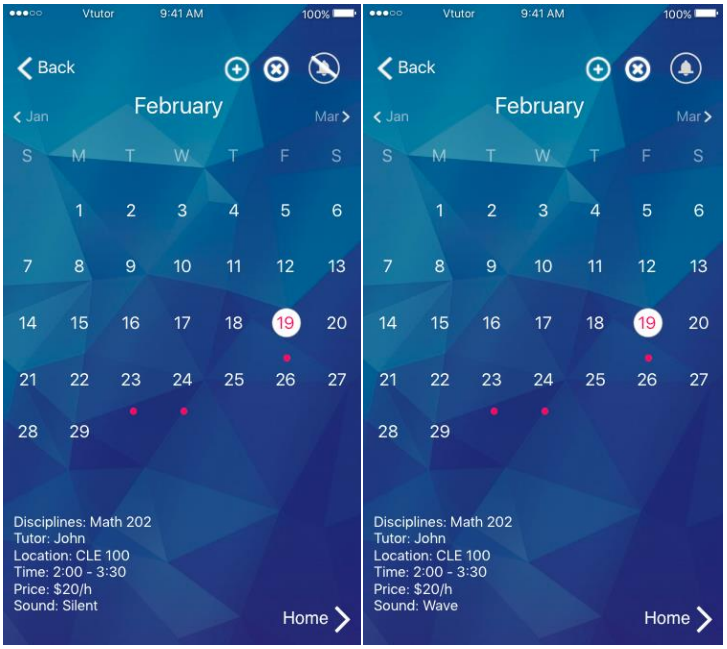
In the “search” case, the process went quite well, and there are not any confusions or misbehavior during the observation process. One of our testers suggested us to exchange the position of school and course input boxes since users are more accustomed to select school name before course title. We agreed with this point and put the school name upon course title in the end.

7. High fidelity prototype:

Link to prototype directly:
https://invis.io/WDCND7W6E



There will be notifications when new messages arrive. Users can easily check the new messages in Chat list.



To turn off the alarm, users can tap the “clock” icon. Then, it will be silent.

8. Future work:

Furthermore, in the future software development and update, users can access the application and share data with one single account through different platforms like mobile and website (This idea comes from the current mainstream application: Udacity, Amazon, etc.). In order to improve the user experience, tutors are also able to upload their course contents and documents through the application. After that, students can access the documents online or simply download them in order to review at any time they want. Moreover, in the future software maintenance, the importance and safety of online payment should not be ignored. We might include the user service team in order to solve the problem that comes from the payment. If students have issues dealing with their tutors or students feel unsatisfied after the lecture, they can open a request. Then user service team will take a look and help to solve the problem.

9. Lesson learned:

Project challenges:
The major challenge we faced was to figure out how to manage a large amount of information in a small screen. Since our tutoring app was supposed to support both students and tutors, so that it was a big challenge for us to merge the two types of functions on the same page. The initial idea we got was to separate the entire interface for tutors and students at the login page, but most of our testers thought it was confusing and troublesome to have different accounts when they use this app. Therefore, we decided to combine them together. Also, since we got lots of ideas to put on such a small screen; How to make the interface logical and concise was of crucial importance. We did want to make our application become user friendly. As more design going on, more challenges arose. Because it was hard to keep all of our ideas, we had to decide which functions we should really add to our application. Otherwise, it must make the system be complicated and unwieldy. Also, our group members had some disagreements about design details. Like the style, color, font, layout, and hierarchy of the system interface. Moreover, during the milestones, we found it was hard to differentiate the medium-fidelity prototype and high-fidelity prototype. We thought they might be very similar, even they could be designed using the design application.

Alternative solutions and key decisions
Even though we faced many challenges during the project, our group members had finally taken all the things out of it. For the functions, we discussed and figured out what was the main purpose of our system, then carefully selected functions that should be kept in our application. At last, we decided the “searching” function as our major part. Based on the major function, we added the “recommendation”, “chatting”, “in-app payment” and “schedule” functions to our application as the main parts. In addition, the way we solve the disagreements about design details was to browse plenty of templates. We discussed and filtrate the features of those templates. We selected some templates that we were interested in, then it became simple to design our own style when we were inspired. However, there were also some other key decisions we made, such as we decided to remove the “two login buttons design” after we received some negative feedback from the users who tried our prototype. That was not an easy decision, because we planned to design the “two login buttons” as our distinguishing feature in the beginning. Unfortunately, users felt the design

made them confused. Meanwhile, we finally decided to keep the “chatting” function, even though some users had questioned it. In their opinions, they thought we did not have to add the “chatting” function to such a tutor searching application. After a group discussion, we insisted that “chatting” function would be useful when users tried to contact a tutor directly, instead of sending emails.

Interesting & valuable

Overall, we think Seng 310 is a really interesting course. So, when we were working on the project in such an interesting course, there must be something made us fun. Firstly, we had to say those sketch applications were very fun to use. Especially, when we added the hyperlinks between pages, it was amazing to see those buttons could be clicked. Besides, the experience really developed our interests about design. In other words, the project did not only let us to apply the knowledge we learned in this course, but also inspired us to come up with new ideas and directions. As all of our group members are computer science students, we were always learning about code and principles of computer. This course and the project absolutely gave us something new. Design is also a considerable field that we could work on, which we thought that might be the most valuable thing for us during the project experience.