

### Testing Methodology

#### Module: Log in / Sign up

1. Load app up for first time by clicking on icon in app drawer
2. Click on student/tutor sign up button
3. Enter information into required fields and click submit
  - a. Verify in Parse the data is created correctly
4. Verify Email and reopen app in order to log in
5. Log in with incorrect credentials
  - a. Verify app gives correct error message
6. Log in with Correct credentials
  - a. Verify app loads correct information and loads correct number of pages in the pager

#### Module Search / Profile View:

1. As a student enter the the tutor search fragment by swiping to the right
2. Enter any search parameters
  - 2.1. Verify the app is correctly locating and serving the right tutors
3. Click on a tutor's username
  - 3.1. Verify app takes the student to the correct profile view for the given username
  - 3.2. Verify app loads data correctly
4. Click on messaging button and verify that it takes the student to the messaging activity
5. Click on view schedule button and verify it takes the student to the schedule activity and loads the schedule matching the tutor
6. Click on Start Session and verify it correctly opens up the venmo timer
7. Click on Write Review and verify it correctly takes the student to the review writing activity
  - 7.1. Write a test review and go back into the profile
    - 7.1.1. Verify the test review shows up on the profile (may require refresh of the profile)
    - 7.1.2. Verify all the information on the review matches what was inputted
  - 7.2. Write a second test review and go back into the profile
    - 7.2.1. Verify the new review overwrites the first review and doesn't alter the total number of reviews
8. Click on View All button and verify that it correctly loads all the reviews for the user

#### Messaging

1. As a student click on the messaging button for any tutor profile
  - 1.1. Verify the user is correctly taken to the messaging activity for the student and the tutor
2. Send a message to the tutor through the messaging activity
3. Have the tutor verify the message has been received and send a message back

- 3.1. Verify there is no way for tutors to contact students that have not messaged them before
4. Repeat a couple times and then exit out of messaging and enter it again
  - 4.1. Verify the chat log was correctly pulled from parse

#### Scheduling

1. As a user on the home page click on the My Schedule button
  - 1.1. If Student then the screen should load up a blank schedule
  - 1.2. If Tutor then the screen should load the correct schedule for that tutor
    - 1.2.1. Verify the buttons can be clicked and then click on Save
    - 1.2.2. Close and reopen the schedule activity and verify the data has been saved into and pulled from Parse correctly

#### Editing Profile

1. As a user click on edit profile button (pencil icon)
  - 1.1. Verify you are taken to the edit profile activity and the app correctly loads existing data for the user into the fields
  - 1.2. Edit every field and then click on the save button
  - 1.3. Exit back into the home page and verify Parse has the updated data
  - 1.4. View the user's profile on another device and verify Parse has the updated data

#### Venmo

1. As a user click on the start session button on an opposite user's profile
  - 1.1. Verify you are taken into the Venmo timer
2. Start and stop the timer over an interval
3. Click on the venmo button
4. Verify venmo loads correctly and charges the correct amount depending on the time on the timer times the hourly rate of the tutor

### **Problems Encountered During Testing**

Testing served its job very well in coming up with very many different ways for our app to crash. We were however able to fix most of the crashing issues, the remaining issues mostly concern with the timing of uploading and pulling objects to Parse causing erroneous results. We also originally intended to write programmatic unit testing into the app but after seeing the work required to learn and implement it in android studio, we decided against it in order to focus on getting what we could done.

### **Functions not working correctly**

- Occasionally, the list of users to message will show each user twice. The cause is unknown, although we suspect it may be caused when the user tries to access the messaging list too fast (before the client is able to start). This is uncommon, but has happened a few times.

- One possible method of resolution would be to display a progress bar while the Messaging Client is starting. We attempted to do this in the beginning of the quarter, but ran into problems with the progress bar never disappearing.
  - sometime when this occurs and you are already within a chat and chatting with someone, it will not send any messages, and if you go to their profile preview, it will be null and show a generic profile.
- Reviews can also sometimes be submitted twice despite code implemented to specifically avoid this
  - This is due to saving review objects using background threads in order to avoid locking the ui. If it is the first time the user has created a review and the save in background thread takes too long, the user can then submit a second review that won't overwrite the first review as intended
  - This can also lead to erroneous values for the number of reviews
- Search will occasionally crash due to unknown causes. We have attempted to debug, but the errors all have to do with Parse, and believe it is related to issues on Parse's end.
- Search and profile view will occasionally take a long time to perform the query to Parse (~10 seconds). Again, we believe this has to do with Parse being slow temporarily.
- When switching between user account types (from Tutor to Student, and vice versa), if one does not close the app, it will display the UI for the type of user that they are switching from
  - This is not really much of an error, since users must have a valid @ucsc.edu email to sign up. This means users will not be able to trigger this error anyways. If we develop a system for users to switch between being users and students within the same account, this issue will be completely irrelevant
- If you are a student, your review average should not show up on the page. This is implemented to be that way, however there are times where it will randomly freeze with the averages showing and after a while it will go away by it self. The cause is unknown and it again might be due to parse's response time.
- You are able to view and edit another person's schedule but it won't affect their schedule, only your own schedule.
  - This is due to the schedule editor working off the current user and not a user passed into it, can be fixed with some refactoring of the code to completely work off users passed into the activity
- Another schedule related bug is, you have to press a button twice in order for the color of the button change. however the first time pressed is when it actually changes value of the button (true false). in other words, pressing the button twice sets the value back to the original value but with the wrong color.
- One can theoretically create an infinite stack of activities as the messaging app lets the user view a profile and the profile view page lets the user create a new messaging activity and so on