Log Book - Honours 2019/20

2019

7th October - 13th October
First meeting with Michael Crabb outlined what was expected for the upcoming year and gave us an overview for the final report. It was recommended that we look into 3 research questions we wish to answer

14th October - 20th October

24th October - 13th October
Second meeting with Michael Crabb, research papers were discussed and how they might relate to my chosen project.

7th October - 13th October
Third meeting with Michael Crabb, the research papers that I had currently looked through were discussed and Michael recommend that I read up on 15 research papers for the next meeting and summarise them in 2 sentences
Found some interesting papers relating to ergonomics and user posture
Struggled with a few because of paywalls.

20th October - 27th October
More research papers were looked into focusing on screen size and user performance along with investigating the Fitts' Law original paper itself

28th October - 3rd November
An ethics meeting with Michael Crabb was held where it was discussed what aspects we should work on. We were given an example from one of his studies on how to complete a research form. Michael said that my experiment would be low risk
I began to work on my ethics form and create one suitable for my needs and create a participant information sheet

4th November - 10th November
The 4th meeting with Michael Crabb was held where the research papers I had found were discussed. I mentioned my difficulty of finding papers due to pay walls and was recommended that I use SciHub to bypass these. I showed my current ethics form and he thought it looked good enough to be sent to the ethics committee
Looked into a few papers I could not previously access due to the paywalls
Began to make a start on my related works section and tried to identify several key areas I would like to look up on and potential research questions

11th November - 17th November
Worked more on related work section and created a introduction for my paper

18th November - 24th November
Spoke with Michael Crabb where he gave feedback on what I have written so far. I was given a general layout I should aim to follow and three related work sections that I should focus on: ergonomics, mobile device and target size/type and user satisfaction and performance.
Began to focus my reading towards these areas

25th November - 1st December
Looked into different ergonomic factors such as sitting and standing and how this might relate to my own study

2nd December - 6th December
Final meeting with Michael crabb who outlined what the final report should look like and advised us to spend some time over the holidays to work on related works section.

2020

5th January - 12th January
Began to look into the final report again and research some more papers

13th January - 19th January
- Looked some more into different papers that could go into the related works section
- Began work on the mid-term report

27th January - 2nd February
- Worked on mid-term report to bring up to a suitable level
- Created a requirements spec, database model and a study method design were created
- A gantt chart showing estimated progress at various stages was created
- A first draft of related works was created and added to mid-term report
- Mid-term report was completed

3rd February - 9th February
- Created a simple fitts' Law task that requires the user to tap on a square that would randomly change position on the screen using local host

10th February - 16th February
- Meeting with michael where the current application was discussed
- Got the Fitts' Law task to record the users X and Y coordinates dependent and where they have clicked on the screen
- Implemented function to get screen width and height

- Created feature for task to end after 15 clicks

17th February - 23rd February

24th February - 1st March
- Meeting with Michael, was given recommendations towards making application be more suitable for a Fitts' Law type task
- Task should include a 3x5 grid that will be able to incorporate all areas of a mobile device
- Researched different techniques that could be implemented to allow for this new method to work
- Researched how to display this on the screen

2nd March - 8th March
- Created a CSS grid in order to display the different components
- Added minor functionality to the application, it now presents a random target on one of the squares and will move randomly until another is tapped
- Added in time recording for both one square to another and to for the overall time after 15 clicks have been made
- Found error that shows only colour is being changed, not the target itself, meaning that once a target has been to one square, this square will always be a target.

9th March - 15th March
- Meeting with Michael, discussed improvements to current application - encouraged that all possible combinations are met
- Michael also recommend that the squares are changed to circles
- Ensured that the current application works on Zeno
- Changed squares to circles
- Fixed error that was causing all squares to be recognised as a target after the target had moved to them
- Worked on related section

16th March - 22nd March
- Amended application so that the target will always return to the starting circle by implementing different functions such as ClassList.add() and remove()
- Target will now not go to the same circle twice
- Implemented different functions to allow for starting circles to increment by one, once every circle has been hit and to end once the final circle has been reached
- Changed html pages to .php pages

23rd March -29th March

- Had a meeting with Michael who recommended that a start screen is implemented and encouraged work on the database to begin
- Created a start screen where the user shall have to enter what device they are using
- Was able to send test device information to the database
- Started using AJAX to send javascript data to php pages
- Created end screen that would show total time taken by the user

30th March - 5th April
- Meeting with Michael who overlooked the current database development
- Discussed with MIchael the current report and different sections that were to go in
- Discussed with Michael about recruiting participants
- Michael said he was interested in testing project next week
- Added further database development and finished AJAX functions

30th March - 5th April
- Meeting with Michael who tried and tested the application
- Michael recommended a nicer U, that the target only goes to circles it has not yet made contact with and to add in the choice of what hand(s) the participants are using
- Application ran into PHP error during the trial run
- Improved the AI and fixed what was causing the PHP error
- Started using PHP sessions to help identify which device was currently undertaking the results
- Changed the application so that only appropriate circles will be reached

6th April - 12th April
- Added in feature that would get the percentage based of the X and Y coordinate relative to each circle, helping to pinpoint where exactly the user had tapped
- Worked on report and made a start on the methodology section and added what technologies were used
- Conducted a google lighthouse audit and worked to improve the results
- Began to look at recruiting participants
- Added full screen functionality to the application so that all devices will have their entire screen free
- Tested application on devices at home and found that the full screen does not work on apple iPhones

13th April - 19th April
- Added in feature to remove pop up asking for full screen on iPhones

- Worked on report and finished methodology
- Fixed ethical forms and put a participant information sheet at the start of the application
- Began recruiting participants following ethical approval

20th April - 26th April
- Recruited more participants for experiment
- Meeting with Michael, suggested to display data through a visual colour coded representation where time and accuracy will be shown
- Another meeting with Michael where it was recommended that research question is changed towards focusing on one and two handedness as not enough participants had a variation in phone size
- Worked more on report and began on writing up evaluation sections and system design

27th April - 5th May
- Began to write up results and discussion and see what correlations exist between the data
- Began to finalise report and look over each different section