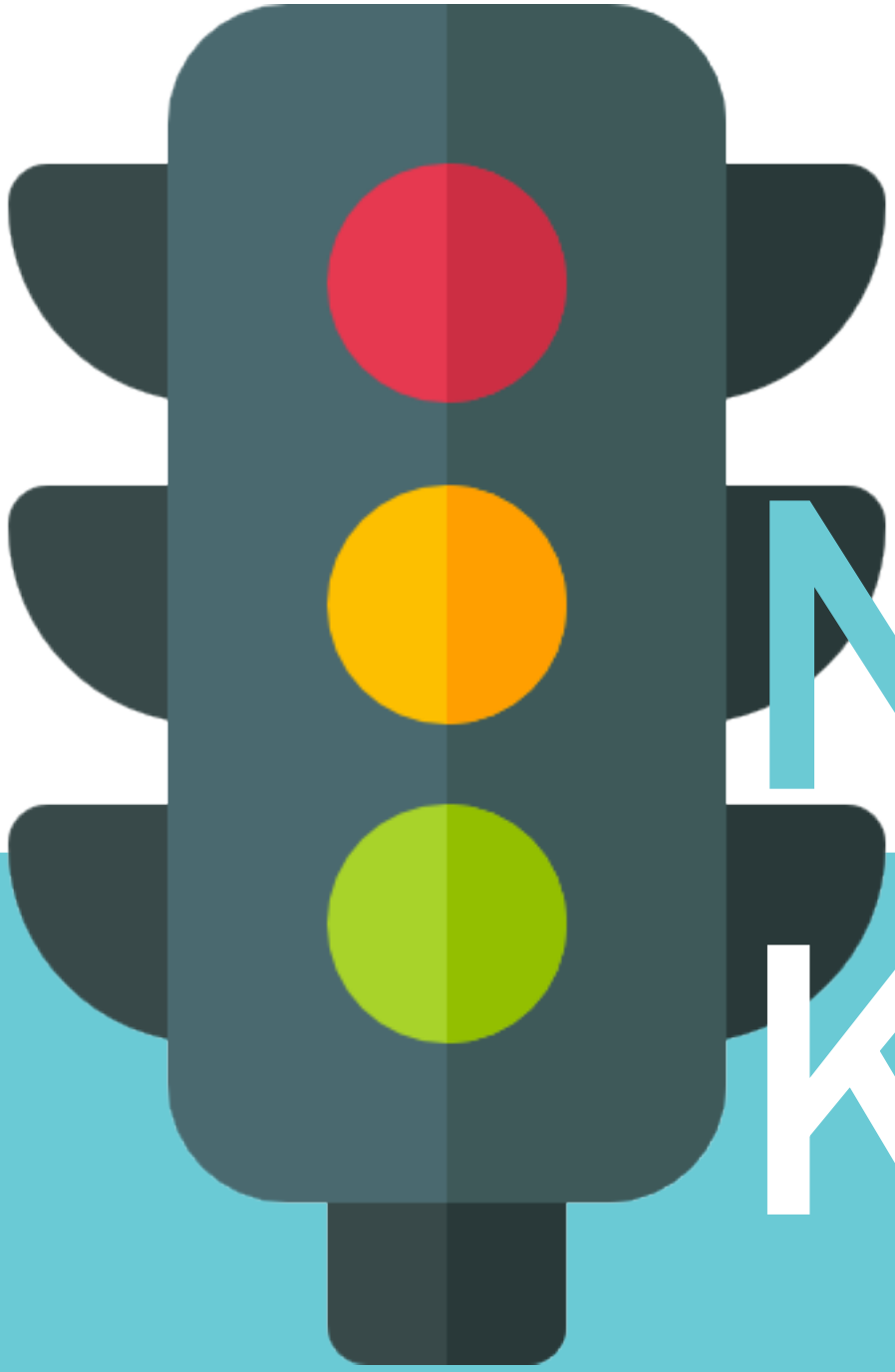


NEO KINESIS

Deco3200

Portfolio

Jiyoung Park

INTRODUCTION

The Problem?

270,000 pedestrians are killed on roads yearly, representing approximately **22% of all traffic deaths globally** (WHO, 2013). Unfortunately, this number is growing as within Australia from 2014 to 2016 pedestrian incidents have seen an increase of 33 deaths, making up **19% of all fatalities that year** (Transport for NSW, 2017).

Further research showed that most crashes occurred between 6pm-9pm on weekdays and 12am-3am on weekends (Australian Government, 2015).

Thus, to combat this issue, we defined our **problem statement** as follows:

> "How might we ensure pedestrian safety when crossing at night by attracting their attention and making their pedestrian experience more enjoyable."

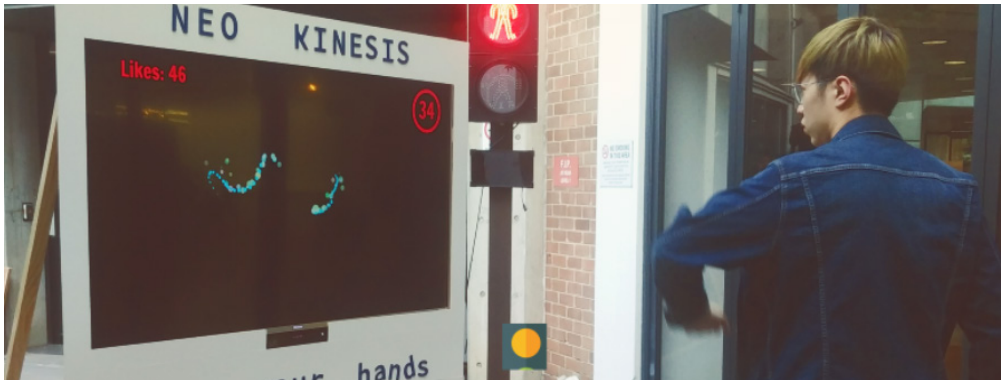
Neo Kinesis is the title of the final concept, named with the intent of breathing new life into the movement of pedestrian crossings

The definition of neo is new and kinesis means movement).

Interacting with Neo Kinesis is simple as all it requires for a user is their hands and attention. By waving their hands through the air, users can 'draw' on the screen as a trail of generated particle effects linger for a few seconds to represent movements. There is also an aspect of gesture recognition-based interaction, with users being able to 'clap to like', causing a heart to pop up on the screen. Supporting up to 6 users at one time, collaborations are made easy even between strangers as it doesn't require users to engage with other participants directly.

As an innovative method that encourages people to disengage with their phones around pedestrian areas it addresses the main issue of boredom. User research revealed the aforementioned issue as one of the core reasons behind distracted walking, despite the majority of pedestrians being aware of the dangers.

Aesthetically, it has been inspired by the current era of social media from the hashtags decorating the physical frame to act in place of instructions and the ability to 'like' through claps. There is also a like counter to emulate common social media like functionalities to add an aspect of replayability to incentivize users to co-operate with other users to gain higher scores.



THE TEAM

Who are we?

Team **FREE WI-FIVE** is made up of 5 members, with the addition of an extra member compared to majority of other teams in our cohort. All students are seniors currently studying the Bachelor of Design Computing at the University of Sydney.

Annie

Visual Director

Evelyn

Digital Prototype Developer

Jackman

Artisan

Jiyoung

Team Leader
Creative Director

Mandy

Researcher

MY ROLES

Team Leader

As team leader, I provided the direction and guidance to ensure that our team were on track as we were essentially only given 12 weeks to develop this prototype from the ideation stage to a final physical product. This involved ensuring that everyone was confident and capable in their assigned roles as well as initiating discussions regarding our project from topics such as aspects that could be further improved to weekly goals.

In scenarios where we were slightly behind schedule it became my responsibility to monitor additional roles given to members to ensure tasks were completed in a timely manner. Another aspect was to pick up areas that members had difficulty with and assist them to further motivate teamwork.

Due to the nature of our project it was required to come up with multiple ideas for ultimately one end product. Part of my responsibility was also resolving conflict within the team so that everyone would be satisfied with the final high-fidelity prototype by communicating and listening to the core needs of the members.

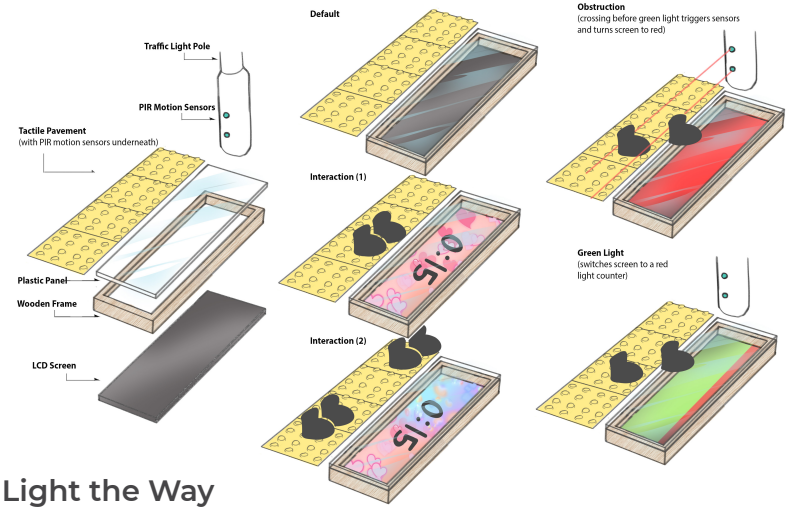
Creative Director

Aside from team leader, my other role was creative director. My role involved the ideation of basic designs and solutions using the information gathered from the initial research stage. This also involved listening to my team members and communicating with them to organize our priorities, thus creating ideas that satisfied specific criteria's.

As a larger team we were encouraged and expected to do more than our peers, leading to the necessity of more prototypes and initial concepts to test. Part of my role's responsibility involved the development of ideas from the earlier stages to fleshing them out so that they all had their unique strengths and weaknesses.

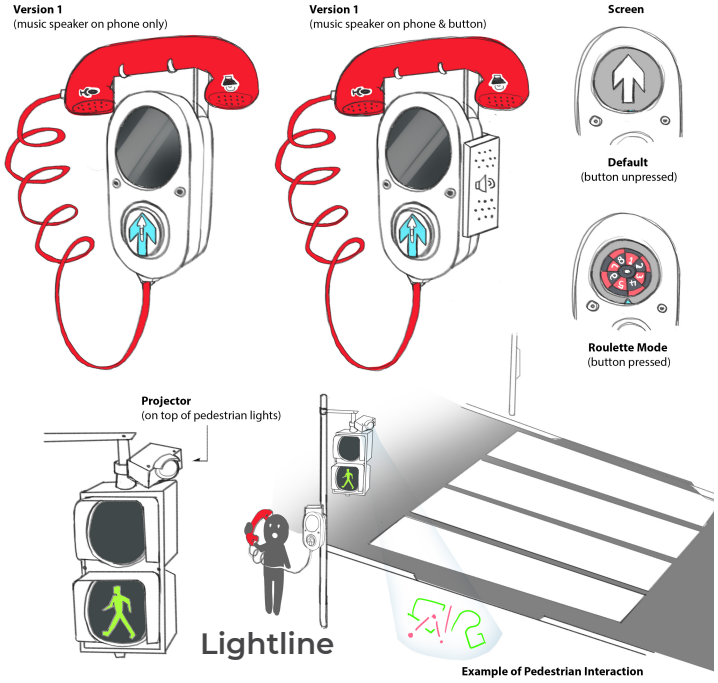
Setting up basic frameworks for design reports in the form of designs or colour schemes to assist my team members was another part of my responsibilities.

CONTRIBUTIONS

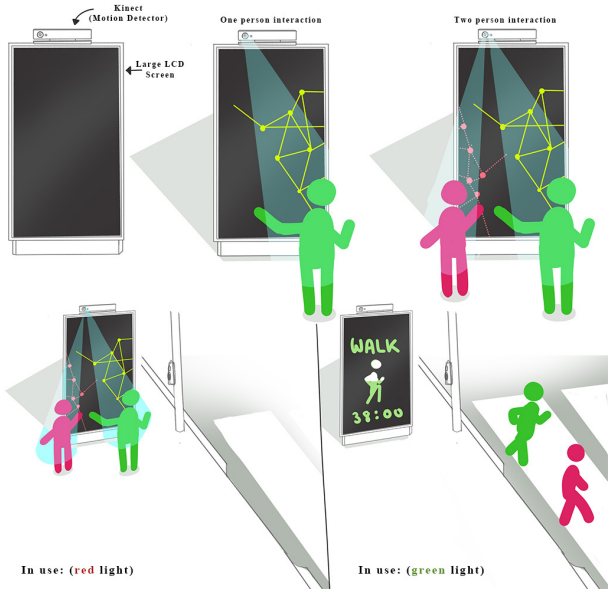


Light the Way

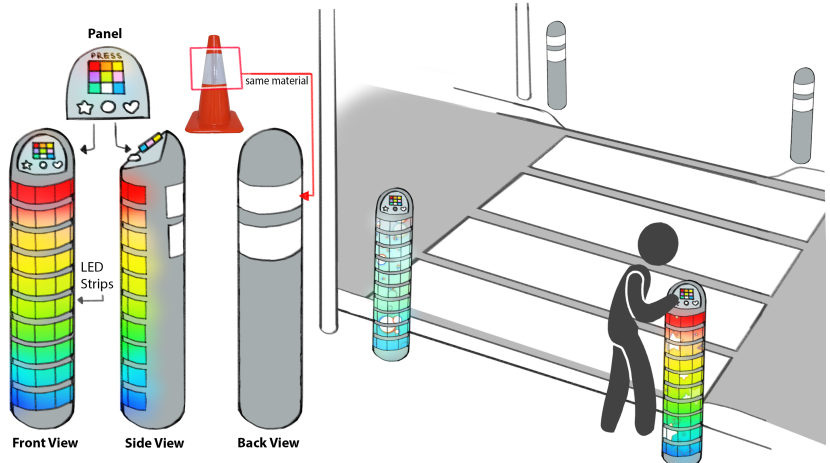
Streetivity



Lightline



Neo Kinesis



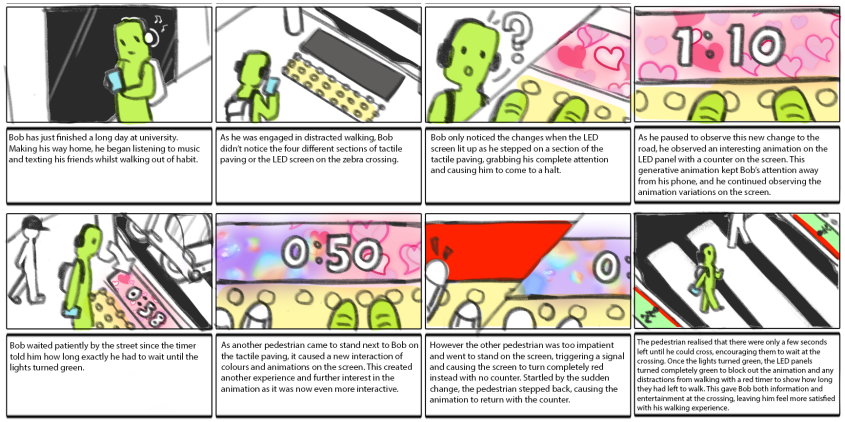
Borealis

Concept Sketches

As a creative director my main contributions involved the creation of two of the initial concepts (Light the Way and Streetivity).

For a more coherent presentation I illustrated all of our ideas as well as combining aspects of our most popular concepts. This became Neo Kinesis and I pitched the idea of linking hearts with social media for the gesture recognition interaction.

CONTRIBUTIONS



Bob has just finished a long day at university. Making his way home, he began listening to music and texting his friends whilst walking out of habit.

As he was engaged in distracted walking, Bob didn't notice the four different sections of tactile paving or the LED screen on the zebra crossing.

Bob only noticed the changes when the LED screen lit up as he stepped on a section of the tactile paving, grabbing his complete attention and causing him to come to a halt.

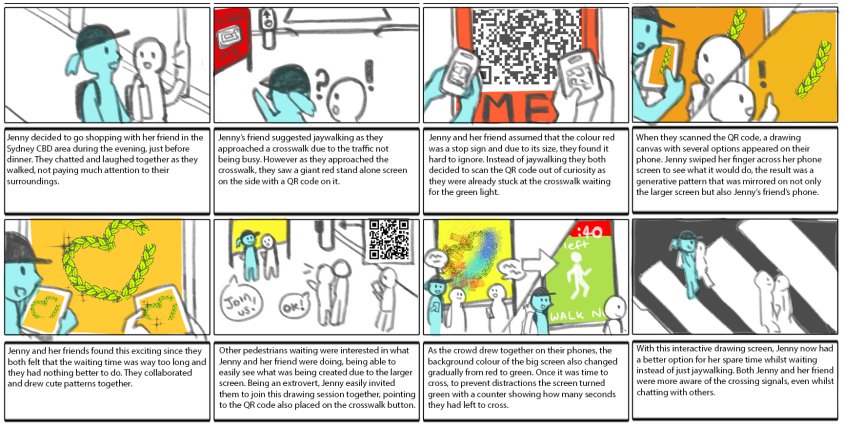
As he paused to observe this new change to the road, he observed an interesting animation on the LED panel with a counter on the screen. This generative animation kept Bob's attention away from his phone, and he continued observing the animation variations on the screen.

Bob waited patiently by the street since the timer told him how long exactly he had to wait until the lights turned green.

As another pedestrian came to stand next to Bob on the tactile paving, it caused a new interaction of colours and animations on the screen. This created another experience and further interest in the animation as it was now even more interactive.

However the other pedestrian was too impatient and went to stand on the screen, triggering a signal and causing the screen to turn completely red instead with no counter. Startled by the sudden change, the pedestrian stepped back, causing the animation to return with the counter.

The pedestrian realised that there were only a few seconds left until he could cross, encouraging them to wait at the crossing. Once the lights turned green, the LED panels turned completely green to block out the animation and any distractions from walking with a red timer to show how long they had left to walk. This gave Bob both information and entertainment at the crossing, leaving him feel more satisfied with his walking experience.



Jenny decided to go shopping with her friend in the Sydney CBD area during the evening, just before dinner. They chatted and laughed together as they walked, not paying much attention to their surroundings.

Jenny's friend suggested jaywalking as they approached a crosswalk due to the traffic not being busy. However as they approached the crosswalk, they saw a giant red stand alone screen on the side with a QR code on it.

Jenny and her friend assumed that the colour red was a stop sign and due to its size, they found it hard to ignore. Instead of jaywalking they both decided to scan the QR code out of curiosity as they were already stuck at the crosswalk waiting for the green light.

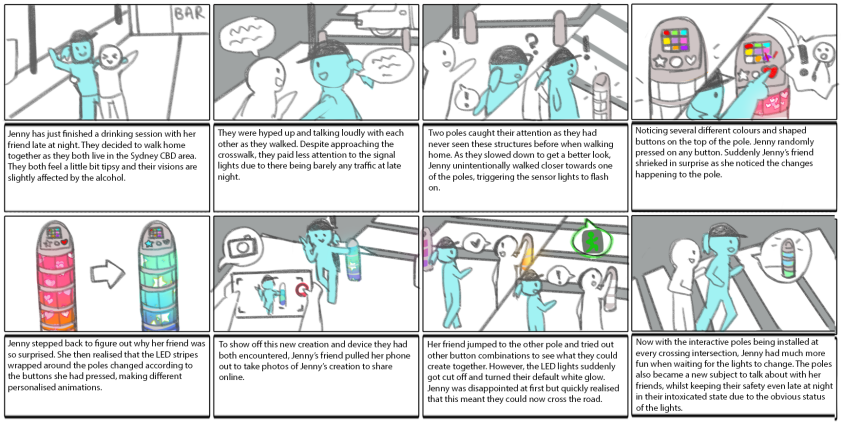
When they scanned the QR code, a drawing canvas with several options appeared on their phone. Jenny swiped her finger across her phone screen to see what it would do, the result was a generative pattern that was mirrored on not only the larger screen but also Jenny's friend's phone.

Jenny and her friends found this exciting since they both felt that the waiting time was way too long and they had nothing better to do. They collaborated and drew cute patterns together.

Other pedestrians waiting were interested in what Jenny and her friend were doing, being able to easily see what was being created due to the larger screen. Being an extrovert, Jenny easily invited them to join this drawing session together, pointing to the QR code also placed on the crosswalk button.

As the crowd drew together on their phones, the background colour of the big screen also changed gradually from red to green. Once it was time to cross, to prevent distractions the screen turned green with a counter showing how many seconds they had left to cross.

With this interactive drawing screen, Jenny now had a better option for her spare time whilst waiting instead of just jaywalking. Both Jenny and her friend were more aware of the crossing signals, even whilst chatting with others.



Jenny has just finished a drinking session with her friend late at night. They decided to walk home together as they both live in the Sydney CBD area. They both feel a little bit tipsy and their visions are slightly affected by the alcohol.

They were hyped up and talking loudly with each other as they walked. Despite approaching the crosswalk, they paid less attention to the signal lights due to there being barely any traffic at late night.

Two poles caught their attention as they had never seen these structures before when walking home. As they slowed down to get a better look, Jenny unintentionally walked closer towards one of the poles, triggering the sensor lights to flash on.

Noticing several different colours and shaped buttons on the top of the pole. Jenny randomly pressed on any button. Suddenly Jenny's friend shrieked in surprise as she noticed the changes happening to the pole.

Jenny stepped back to figure out why her friend was so surprised. She then realised that the LED stripes wrapped around the poles changed according to the buttons she had pressed, making different personalised animations.

To show off this new creation and device they had both encountered, Jenny's friend pulled her phone out to take photos of Jenny's creation to share online.

Her friend jumped to the other pole and tried out other button combinations to see what they could create together. However, the LED lights suddenly got cut off and turned their default white glow. Jenny was disappointed at first but quickly realised that this meant they could now cross the road.

Now with the interactive poles being installed at every crossing intersection, Jenny had much more fun when waiting for the lights to change. The poles also became a new subject to talk about with her friends, whilst keeping their safety even late at night in their intoxicated state due to the obvious status of the lights.

Bob is on his way to have dinner with his friends in the city. He has to cross several busy intersections. As he was running slightly late, he wanted to get there as soon as possible.

When he reached the crosswalk, Bob pressed the traffic signal button out of habit. Whilst waiting, he noticed that the button triggered a roulette on the digital screen above it.

Once the roulette came to a stop, Bob heard the phone on top of the pedestrian button suddenly start to ring. Out of curiosity, he picked the phone up.

Once he picked up the phone, music began to play from the phone. Instructions overlayed over the music at the start to explain the roulette mechanism, with the button randomly choosing the track that would be playing for this round. The voice instructed him to sing along or talk to the sounds using the phone mechanism.

As Bob talked into the phone to ask a question, a projection was casted in the safety zone of the pedestrian crossing. The projection consisted of sound wave patterns created from Bob's voice input. The attention of other pedestrians waiting with him were gained as they paused to marvel at the animations.

Whilst Bob continues to interact with the phone, a distracted pedestrian accidentally steps into the 'danger zone' and blocks the projection with their body. Bob and all pedestrians are disappointed by the obstructed projection and look towards the direction of the distracted pedestrian.

Feeling the stares of others, the distracted pedestrian stepped back to the 'safe' waiting zone apologetically. With the obstruction cleared, Bob continues to enjoy the device with other pedestrians without directly interacting with other people.

Once the crossing signal turned green, the music was cut off and the projection disappeared with it. This way Bob was immediately informed that it was time to hang up and safely cross the road. Through this installation, it not only made his entire walking journey more pleasant and fun but also influenced other pedestrians experiences positively.

Storyboards

Using the personas that were created as a group, I came up with scenarios that showed how the starkly different personas would interact with the four concepts. Through this method, I was able to illustrate in greater detail how these concepts were effective in addressing the problem statement for a variety of personalities.

CONTRIBUTIONS

Interviews

As all our concepts had a great focus on how users interacted with the devices, we put great emphasis on user opinions - thus making interviews crucial.

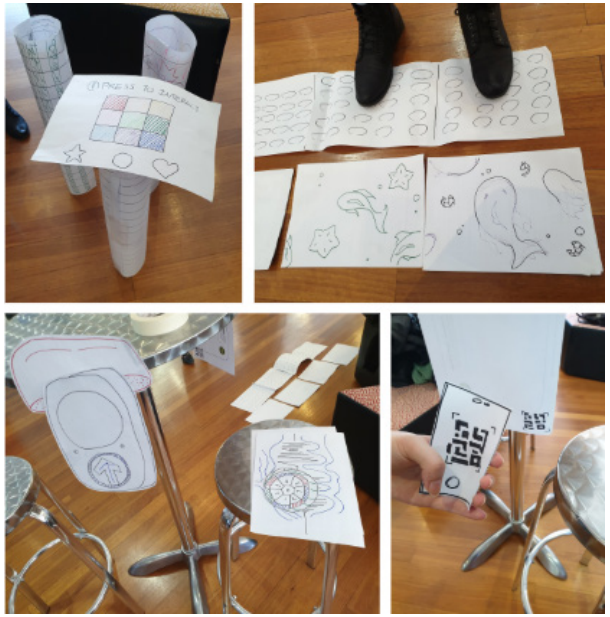
All but one round of interviews were conducted by me for each individual participant at the end of each user testing round.

This assisted us in gaining a clearer understanding of their immediate desires, something we could then further iterate on the next prototype.

Reports

With the nature of school assessments, each stage of the project required a report to communicate the progress of our group as well as to explain the steps taken.

To contribute I assisted greatly with writing the content of the report as well as proof-reading. Additionally I helped with the aesthetic layouts as they were both design reports along with the power points and assisting with the division of the parts.



User Testing

Due to having so many initial concepts, it was expected for our group to justify each step of the way. This meant a lot of time was invested preparing for the testing rounds such as paper prototypes and questions to ask participants.

I assisted with the creation of prototypes and observation of users taking part in testing.

CHALLENGES

Differences in Opinions

As a team of 5 it is only natural to have different and at times, clashing opinions as this is a project reliant on creativity with no 'correct' answer. These clashes occured most often during stages where clear decisions had to be made for progress on our project.

Examples of issues were most clear when discussing the initial concepts and there were two divided opinions on the scope of what we could accomplish. Some members had extremely clear goals and motivations as they were inspired by existing light installations that were impressive in scope. This was overcome eventually through long discussions as a group to outline what was realistically possible for us in consideration of our technical abilities, timeframe and budget. Through this stage, our team was able to clearly define our priorities from an earlier point of the project, becoming an effective guideline for the rest of the semester.

There were also times when each member considered user testing results to imply different areas of importance. This was especially the case during testing such as user observation as some people considered the signage to be unnecessary whilst most deemed it as helpful. As a group this was a concern as the signage was thought as a point of detriment due to it taking focus away from the aesthetic presentation of the screen. Ultimately, through discussions and paper drafts to create mockups of what each member's vision looked like, it became helpful when it came to our final prototype.

Similarly, when testing the earlier stages of Neo Kinesis through lower fidelity prototypes, group members were split on what functionalities to prioritise. One half of the group enjoyed the idea of customisation whilst the other half of the group voted against it due to the potential chaotic nature of the interaction when combined with 6 individual users. Using user testing as a point of reference, we instead compromised as a group for each individual user to get a different colour and shape with the addition of a gesture based interaction as voted by participants.

CHALLENGES

Individual Schedules

Another significantly challenging aspect of being in a team of 5 was managing individual schedules for group work. This was made especially more difficult considering that all members are senior design computing students, meaning that other subjects took up a significant amount of time.

To make this work, the group had frequent communication through the messaging system of Facebook Messenger as a group chat. Majority of the testing was carried out over the days where the class was held during the studio time with other members preparing for the user testing session over the tutorial.

Individual goals were also established weekly with a set time before the next week of class so that if any members had any difficulties with finishing tasks set on them, it was possible to alert other members of their issues and ask for assistance.

Through these methods it made it possible for a lot of the tasks to be completed without having to meet in person. Ultimately, if it was not for the trust each member had for their teammates, this method would not have been so successful. By keeping promises and doing the best as possible for each task, it made the team work a lot easier to accomplish.

CHALLENGES

Limitations

During the course of this semester, we were met with many limitations that challenged us as a group.

At times, the limitations were in the form of technical abilities as much of the coding that had to be done was new and unfamiliar. Unfortunately this meant that the coding aspect relied on the prototype developer Evelyn and due to the majority of the group's unfamiliarity they were not much assistance in that aspect. This was magnified when specific additions were desired but were difficult to implement, such as an active gif for an animated heart rather than a still image generated by code. As a creative director when requested to make an animation I took initiative to complete multiple iterations to give the group a choice. Unfortunately, the gif itself could not be coded in and was not used in the final prototype. To overcome this issue, when creating ideas as a group we ultimately discussed all possibilities to ensure that the likelihood of its implement was high and to prevent too much pressure on the prototype developer.

The biggest limitation was the aspect of time for this semester as stated earlier we were given ultimately only 12 weeks to create a working high fidelity prototype. Due to this, I feel as though certain aspects of the prototype could be strengthened if we were given further time to work on this. An example of this issue is the frame that was brought up as a necessity in late week 8-9. We managed to create a working frame for the prototype by allocating two members to work solely on the frame as it had to be drafted from scratch but I believe that if we were given more time it could be better refined.

REFLECTION

How well did you work in your team?

Overall, I think I worked well in my team as there were never any serious disagreements with all discussions handled in a respectful manner. All members did their best to assist eachother where possible and it was apparent that everyone produced work that was to the best of their abilities.

What could you have done differently?

Near the end of the project, if we had managed to know about the frame earlier I could have tried to design an alternate cover to suit the frame's design better. Especially as our original idea for the frame was to emulate social media applications such as Twitter, Facebook and Instagram, I feel as though the current laser cut letters are more of a subtle reference. An illustrator file was created as a cover for the frame but unfortunately due to the sheer size of the frame, the print had to be spread over two pages, making the frame look low fidelity. If we had been better informed, we could have invested more time with laser cutting specific icons and lettering for the frame as well as using actual LED lights to light up the signage.

Will your team continue to work on the prototype further?

Currently there are no plans to work on the prototype any further as a group we are satisfied with the functionality of the current high fidelity prototype. Depending on the feedback we recieve during the graduation show we could potentially look into iterating it further and adding more gesture recognition to create a more engaging product.

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Icons (n.d.). Retrieved from www.flaticon.com