Bradley Smith Interactive Media Design
DE0972 Personal Project 2 & Final Project
Northumbria University - Level 6

CommuniCare
Maintain the future

Contents

Work Requirements

Prototype • Created using the most appropriate tools to resolve your design problem or concept.

Design Document • This will be structured in a similar way to previous design documents undertaken during your second year.

Video • This will be constructed in a family environment showing how the product will be used.

Project Brief

I have set myself a brief creating a new device to represent the future of healthcare for dementia. The audience is targeted towards people who have mild to medium cases of dementia, and suffer from communication issue, feeling socially withdrawn and memory loss.

The potential risks with this project is that people may not understand how to use the product or that they use it and forget what they previously did which will lead to confusion. On the other hand the new value of this project is that people will be engaging in conversation with people, giving them a more memorable and meaningful experience. .

The opportunity of this project is that it can be adapted to multiple illnesses and help people with the struggles that they are facing. This will also open up new windows of opportunity for people to get involved and help in areas that they feel are equally as important.

Project Aims

To provide evidence of intellectual achievement, skills and creative techniques, appropriate to the graduating designer through autonomous learning.

To develop a holistic approach to design development and to synthesise these skills through a design solution.

To demonstrate skills and ability to critically justify and evaluate their work.

Continuing From Last Year

After developing communicare's app in semester 1 I wanted to branch out an explore other possibilities that could help people communicate and gain more accomplishment when dealing with dementia.

I will be developing my idea of storing and sharing memories, with people associated with dementia. As my main focus for this project is bringing back communication between people who have dementia and their families/friends/carers etc.

Generating Ideas

After finishing semester one, I began to generate ideas thinking about what was possible and if it would make an impact. I wanted to produce something that would assist people with dementia in terms of memory and communication. Combining Personal Project 2 with Final project to produce a fully functioning prototype. My initial idea were

1 - A re-design of the Communicare app that would offer more for its users

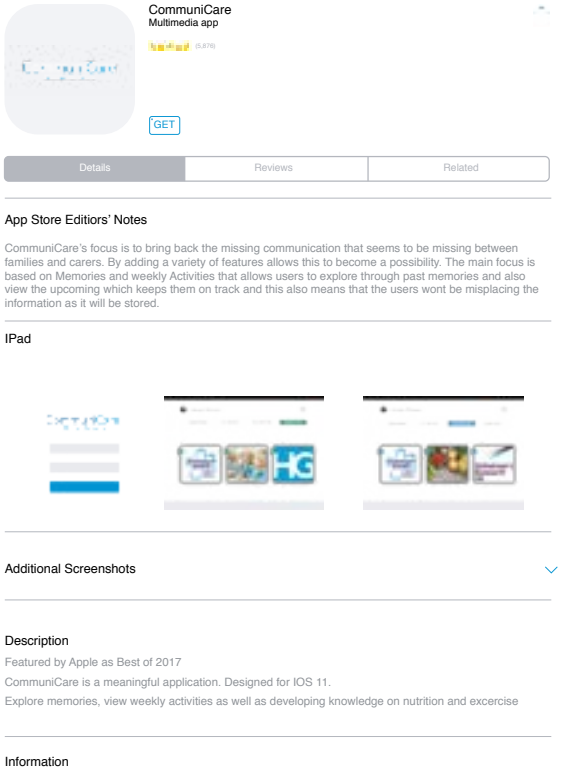
2 - A memory web of **memories** that people can dive into and explore

3 - A device that helps with **communication** for people with dementia

After thinking about my ideas I began to research into what it is that people with dementia struggle with the most and how it affects their daily life as well as the impact it has on their family and friends. This lead me in a good direction to follow as it gave me a better understanding of what it is that people are going through.

I came to the decision that a device that helped store memories and allowed people to interact with it, was a good idea to pursue as it meant that it helped breach the gap that people were struggling with. I plan to create a device that allows users to upload and share their memories as a means of, bringing back missing communication and maintaining the memories that are been made.

Previous Project



In semester one I developed an app that allowed users to track their daily activities, monitor their progress and overall keep updated with what is happening with dementia.

I used Proto.io to develop my prototype, which allowed user to see the 4 main sections which were Memories, Activities, Nutrition and Exercises. Each section was simple for the users to navigate through, each page had a specific colour theme as colours help people with dementia to navigate and understand the area that they are in.

George has recently developed dementia and is struggling with daily tasks

He is struggling with keeping track of what he has done each day and who has been to see him

He usually makes notes and keeps on top of whos coming to see him, birthdays etc

He also likes to view her memories with family and friends but as dementia is kicking in he doesn't want to loose or misplace them

By introducing him to this multimedia application he can acess and edit memories, Daily activities that can be monitored by family and carers, Nutrition and Workouts

Here George can acuess memories from past and present, he can also add to them and also link images and video to specifi days. Adding daily activities and memories can also be done by family and carers.

Progress can also be tracked by families and carers to see what activities have been completed daily/weekly.

The Aim

Is to produce a fully functional prototype that allows users to upload and share their memories with family and friends, as well as discovering other peoples memories.

Key Stages

There will be three key stages that I will be focusing on

1 - Research existing products that help people engage in conversation
2 - Create memories to be shared with people
3 - Prototype the product

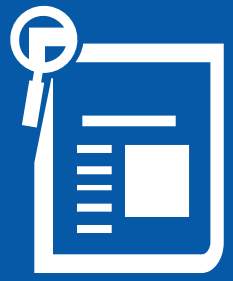
What’s Next?

Deciding on the project

Orb or Communicare App

The reason why I have decided to go with Orb instead of continuing with the Communicare app is down to the fact that I feel it terms of improvement there isn't enough that I could do to improve the app. I don't think that this would make my project strong enough and I feel that Orb has a lot of underlined possibilities to explore.

After thinking about both projects I also feel that Orb will be more exciting to explore and the research will also allow me to think about other future developments. I also

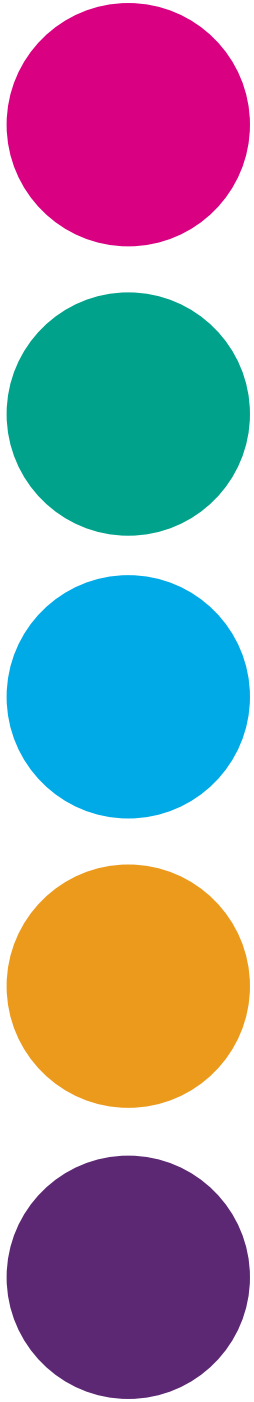


PROJECT RESEARCH

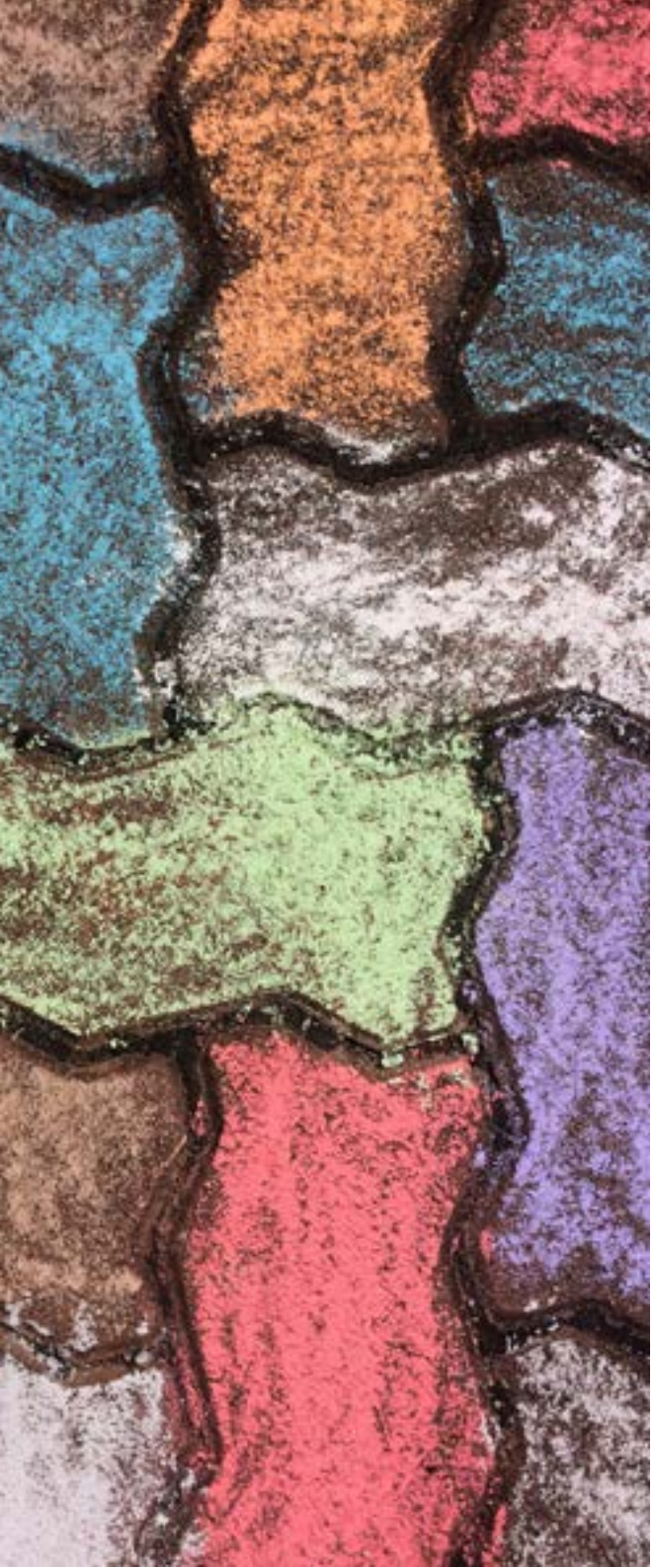
Recalling Memories Through Colours

Psychologists have found that people are significantly better at recalling scenes, pictures and images if they are not just black and white. As colour has stronger appeal to the senses, it prompts a better connection to parts of the brain that involves memory.

Colour gives an extra ‘tag’ of information on what we observe, which helps us to process and store images more efficiently than black and white scenes, and as a result allows them to remember them too. There is also a discussion that shows that natural colour strengthens memories as false colours do not ‘tally’ with what the brain knows and expects, meaning that the recollection is weaker.



http://www.dailymail.co.uk/news/article-112944/Why-memories-work-better-colour.html



The Importance Of Colour & Contrast

There are a number of changes in normal vision which are due to ageing such as:

- The need for additional light
- Increase sensitivity to glare
- Reduced peripheral vision
- Reduced sensitivity to contrasts
- Reduced speed of adapting to change in light level
- Reduced visual acuity
- Reduced depth perception
- Altered perception of colour I.e. being less able to discriminate between unsaturated (less intense) colours such as pastels

Other key areas of focus are high and low contrast as both have different achievements. High contrast allows people to draw attention to something of greater importance, applying the higher contrast helps to highlight key areas of interest. On the other hand low contrast has the opposite effect which can be achieved by lowering the contrast, which can lead peoples attention away from objects that are of no interest to them.

http://dementia.stir.ac.uk/design/virtual-environments/importance-colour-and-contrast

Communication With Dementia

As the disease of dementia/Alzheimer's is always progressing the communication skills of the person gradually decline and they will begin to have difficulty expressing their thoughts and emotions. This can lead to both the person with dementia and their carers/family dealing with a lot of frustration, meaning that preparing and knowing how to anticipate these changes means that the response will be communicated more efficiently.

The main changes in communication

- Difficulty finding the right words
- Using familiar words repeatedly
- Describing familiar objects rather than calling them by name
- Easily losing a train of thought
- Difficulty organizing words logically
- Reverting to speaking a native language
- Speaking less often
- Relying on gestures more than speaking

https://www.alz.org/national/documents/brochure_communication.pdf

Stage Of Dementia

EARLY STAGE

People who suffer with early stage dementia are still able to participate in meaningful conversation and engage in social activities (but may repeat the conversations they have had). They also might find it difficult to communicate with the right words which will make them feel overwhelmed by excessive stimulation.

MIDDLE STAGE

The middle stage of dementia is the longest stage which can last for many years. As the disease progresses the person who is suffering will have greater difficulty communicating and they will require more direct care.

LATE STAGE

The late stage of dementia can last from several weeks to several years and as the disease advances the person who is suffering may relay on non-verbal conversation/ communication such as facial expression or focal sounds. As well as the communication issues around the clock care is needed in this late stage.

Alzheimer's Disease

This is the most common cause of dementia. Brain cells are surrounded by an abnormal protein and their internal structure is also damaged. In time, chemical connections between brain cells are lost and some cells die. Problems with day to day memory are often noticed first, but other symptoms may include difficulties with, finding the right words, solving problems, making decisions, or perceiving things in three dimensions.

Vascular Disease

If the oxygen supply to the brain is reduced because of narrowing or blockage of blood vessels, some brain cells become damaged or die. This causes vascular dementia. The symptoms can occur either suddenly following one large stroke, or over time through a series of small strokes or damage to small blood vessels deep in the brain. The symptoms of vascular dementia vary and may overlap with those of Alzheimer's disease.

Mixed Dementia

This is when someone has more than one type of dementia, and a mixture of symptoms. It is common for someone to have alzheimer's disease and vascular dementia together.

Dementia with Lewy bodies

This type of dementia involves tiny abnormal structures developing inside brain cells. They disrupt the brain chemistry and lead to the death of brain cells. Early symptoms can include fluctuating alertness, difficulties with judging distance and hallucinations. Day-to-day memory is usually affected less than in early Alzheimer's disease.

Frontotemporal Dementia

In frontotemporal dementia, the front and side parts of the brain are damaged over time when dumps of abnormal proteins form inside nerve cells, causing them to die. The main changes are with personality and behaviour which are the most obvious signs.

How is dementia treated?

The vast majority of causes of dementia cannot be cured, although research is continuing into developing drugs, vaccines and other medical treatments. There is also a lot that can be done to enable someone with dementia to live well with the condition. Care and support should be ‘person-centred’, valuing the person as a unique individual.

Can dementia be prevented?

It is known that high blood pressure, lack of exercise and smoking, which leads to narrowed arteries increasing the risk of developing alzheimer's disease and vascular dementia. There is evidence that a healthy lifestyle, especially in mid-life, can help reduce the risk of dementia. Regular physical exercise, maintaining a healthy weight, not smoking, and drinking only in moderation are all linked to a reduced risk of dementia.

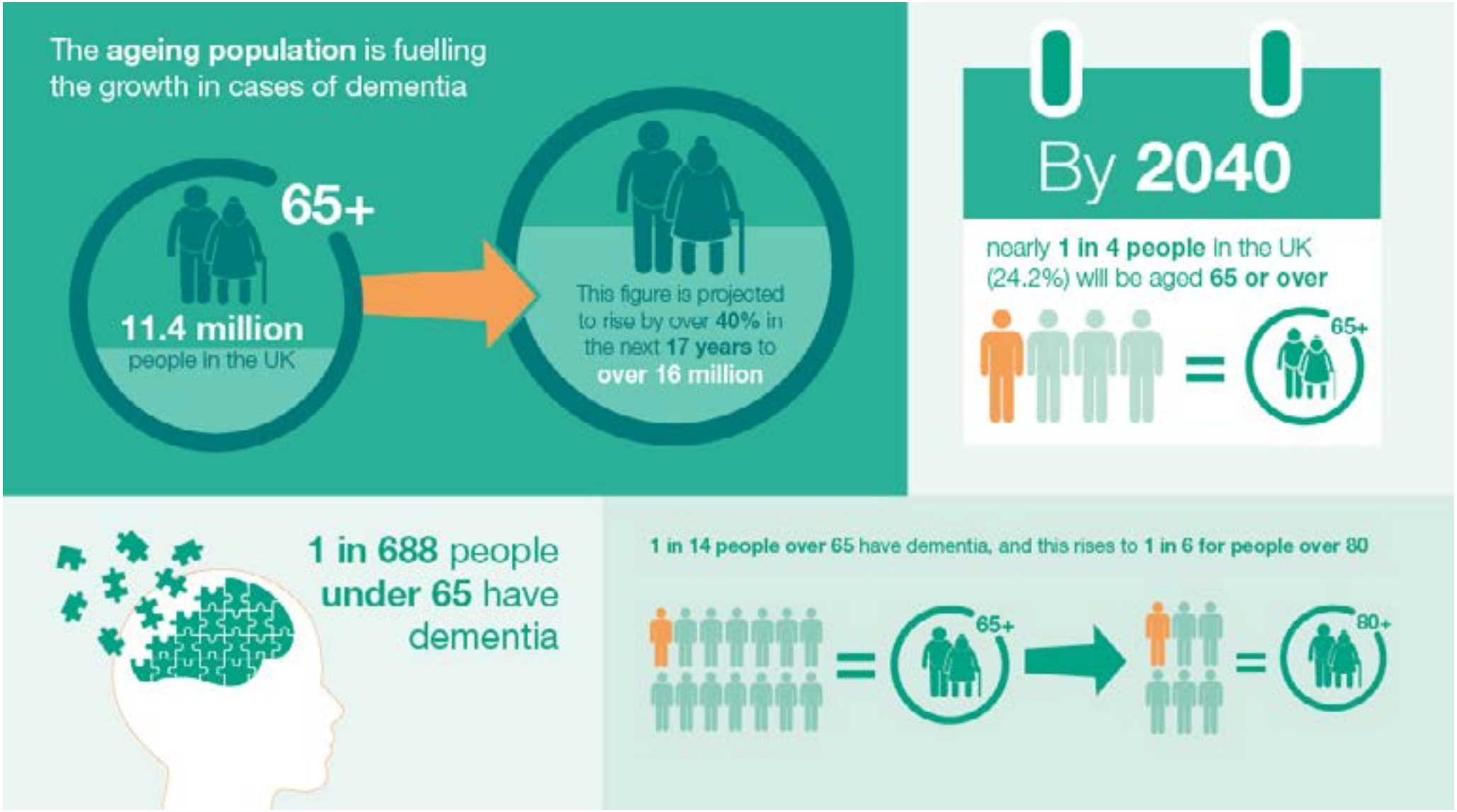
Social & Mental

Keeping socially and mentally active in the later years may help lower the risk of dementia. Being socially active could include visiting friends or going to a place of worship, while being mentally active could include doing puzzles or reading.

prevent dementia

http://www.preventdementia.co.uk/

Statistics



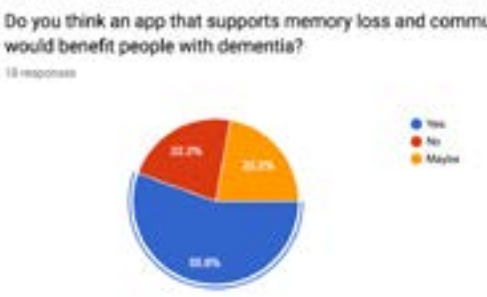
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/image_data/file/51164/6.1682_PHE_CP_Health_Matters_-_Dementia_online_960x640_5.PNG

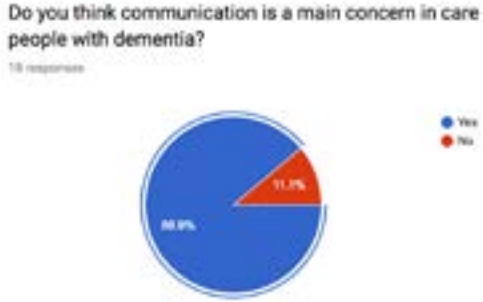
Overview From Previous Questionnaire

The outcome from my previous questionnaire left me in a good direction to follow, as the majority of people that I asked said that there isn't enough out there to support people with dementia.

Stimulating and engaging in conversation also seemed to be a big area that people thought could be worked on. As there isn't enough out there to help with starting a conversation and maintain the communication without repeating themselves.

I also think by keeping the mind active is a key area to focus on as the users will need to make sure they understand what they are doing and that its also interesting and fun whilst they observe and learn.





1 Dementia is caused by diseases of the brain

Dementia occurs when the brain is damaged by a disease. There are a variety of known causes of dementia. The most common is Alzheimer's disease which changes the structure and chemistry of the brain, causing the brain cells to die. The first sign of this is usually when someone begins having short term memory loss.

Everyone's dementia is different

No matter what type of dementia a person has, everyone will experience the condition in their own way. The affect it has on a person overtime is also unique - the main changes are with their own attitude as well as relationships with others and surroundings.

2 It’s not just about losing your memory

Common symptoms

Dementia often causes difficulties with concentration, planning and thinking things through. Mainly people struggle with familiar daily tasks (such as following a recipe). Dementia also make it harder to **communicate**, a person with dementia might have trouble remembering the right word or **maintaining a conversation**. Many people have problems judging distances even through their eyesight is fine. The biggest fear for people with dementia is that they could loose their self-confidence and become withdrawn from communicating.

As dementia progresses

Dementia is progressive, which means that the symptoms gradually get worse over time. How quickly this happens varies between people and their own experiences with the disease (even though many people stay independent for years).

At the moment their is no known cure for dementia, but there are ways to help with symptoms and make life better at every stage. Thinking of new ways to engage in conversations and maintaining the memories is also important to keep the mind active.

3 It’s possible to live well with dementia

Scientists and researchers are working hard to find a cure for dementia. In partnership with people with dementia and their families, they are also looking into its causes, how it might be prevented and diagnosed earlier. One of the biggest focuses are “how to improve the quality of life for people living with the condition”

None drug treatments

People with dementia can benefit from non drug approaches. An example of this is with life story work, where people are encouraged to share their **memories** and **experiences**. As well they are encouraged on cognitive stimulation, which might involve word puzzles or discussing current affairs. Keeping as active as possible - physically, mentally and socially is important as it can boost memory and self-esteem and help avoid depression.

4 There is more to a person than the dementia

Living with dementia is challenging, when someone has been diagnosed their plans for the future might change. They might need help with daily tasks or with their daily activities that they enjoy doing. Dementia doesn't **change** who the person is as long as they have the right support, it is possible for someone with dementia to live well and get the best out of life.

Quotes

"It's important to carry on doing the things you **enjoy**, and not sideline yourself from your friends and family. We still go to the pictures and to the theatre. We keep in touch with family and friends, we still go on holiday, we still go out together and do the things we always did".

Brenda, Whose husband has dementia

"The art classes, choir and Memory cafe are all brilliant for boosting my confidence. I've come away from my art classes and choir practice feeling like I've really achieved something. The choir has helped with my **speech** and **memory** too - I'm amazed that I can remember all the songs".

Linda, Living with dementia

"Mum still does the things that she used to do regularly - she still takes the dog to the woods like she used to. If she does something regularly and carries on doing it, she doesn't normally forget it. **Routine** is really important".

Pip, Whose mother has dementia

Competitor Analysis

The Wayback

The Wayback project recreates coronation day in 1953 on 3D film using actors, period costumes and props, right down to fish-paste sandwiches. The effect is to bring back vivid memories for those struggling with the present.

And it aims to recreate popular, positive moments from our past, taking viewers back in time and immersing them in the sights and sounds using virtual reality. As well as hoping that it triggers happy memories and precious conversations between you and your loved one.

https://www.theguardian.com/lifeandstyle/2017/nov/20/virtual-reality-taking-dementia-patients-back-to-future-wayback-vr-film?CMP=share_btn_fb

Photo Scrabbler

The Photo Scrabbler allows people with dementia in care to connect with the wider world through photos sourced from a variety of sites including Flickr and Geograph. It consists of a slowly changing slideshow that changes when you make words with bespoke Scrabble tiles on an accompanying tile holder.

Having the option to place the letters any way round is a benefit for the users as it means that the letters placed down automatically snap into the correct location and the slide show will still continue making the process as easy as possible. As well the approach has an element of randomness meaning that it can connect people with a variety of content.

http://tommydylan.co.uk/portfolio/items/photo-scrabbler/

Personhood

Personhood offers potential for preserving the agency of people living with dementia. With this project the design allows people to engage with both jewellery and digital jewellery to support the personhood.

With the specific example it addresses the relationship involved with Gilian's family life and the progression of her illness and how it could be meditated technologically.

I think that this example is really good at connecting peoples emotions with their family experience as it brings back memories through the touch of a material.

http://www.jaynewallace.com/

The Dementia Friendly Home

The app aims to enable people living with dementia to maintain their independence and continue living within their home. It also helps build on their self-esteem, which can have a profound impact on the quality of life for a person living with dementia, as well as families and carers.

The dementia-friendly home uses augmented reality to recommend practical changes. It also prompts a carer to think about the home can be changed to assist the person living with dementia. It also allows people to remain involved in their daily routine and the daily tasks that they want to accomplish.

https://www.gizmodo.com.au/2016/03/this-australian-augmented-reality-app-helps-dementia-sufferers/

Dementia Citizens

Dementia Citizens is a project that connect people with dementia and their carers, using apps on smart phones and tablets/ipads.

2 pilot apps were launched that aimed to help people with dementia.

Book of You allows users to enjoy making and viewing a life story book, sharing happy memories with family, friends and carers.

Play-list for life allows users to enjoy making and listening to a personal play-list, as well as finding music that means something to them.

Main Features

• Finding new activities to enjoy with family and friends, using a smart phone or tablet
• Learn new ways of living with dementia and caring for someone with dementia
• Taking part in dementia research studies and help understand more about dementia care

http://dementiacitizens.org/

Overview Of Apps

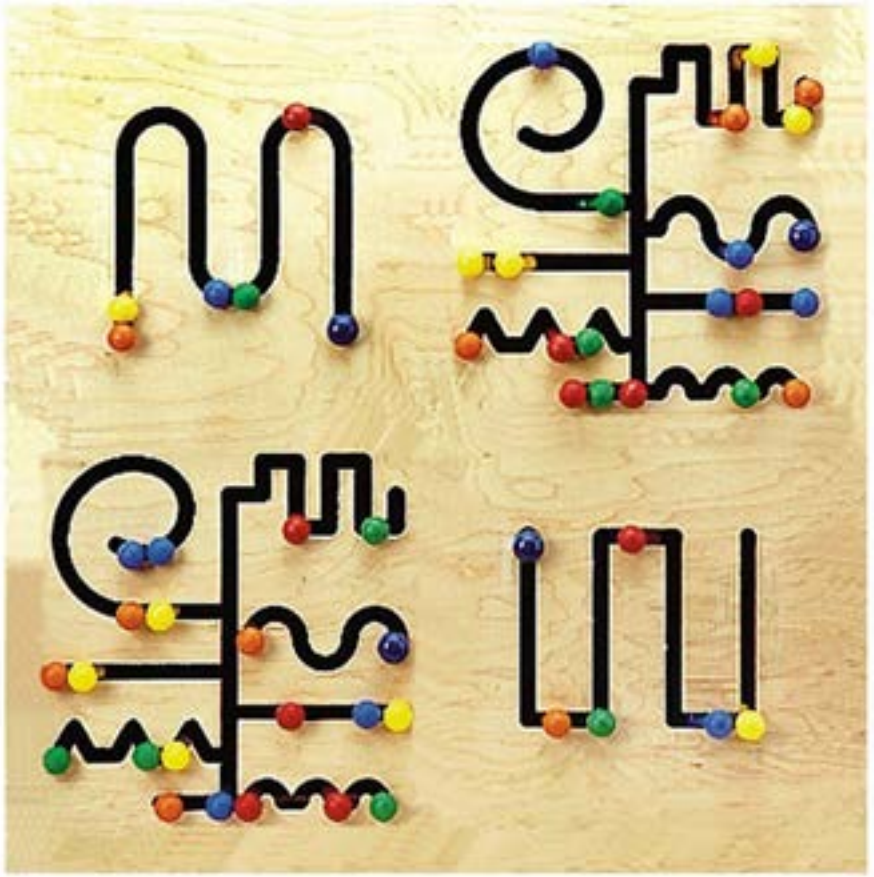
After looking at a variety of apps available on the market place it becomes quiet apparent that there is nothing to instigate conversation available. There were a lot of apps that allowed users to explore memories and games that help to stimulate the brains functionality.

Clevermind and Mindmate focus on memories, activities, imagery, videos, games and tasks which is important for patients who have early onset dementia and are coming out of their daily routines. It is also very clear that their aim is to assist the person who is suffering with dementia, as well as a personal learning tool.

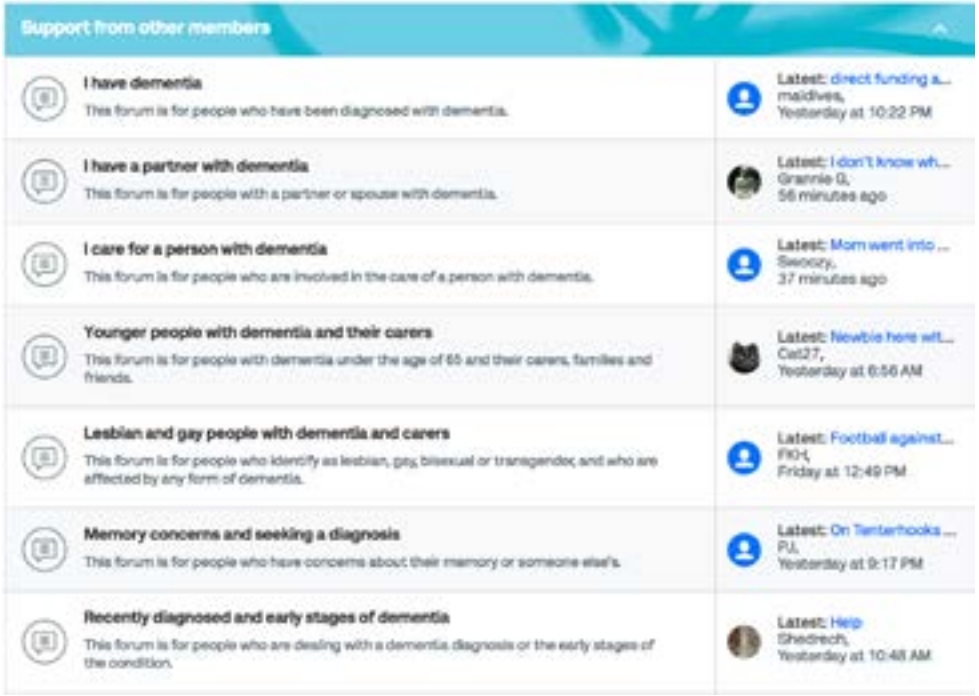
This allows me to go into a space that yet hasn’t been explored as there is a gap in the market to stimulate conversation through imagery, sound, colour and touch.

Pathfinder Activity Wall Panel

This simple interactive wall piece adds interest to hallways and corridors, it allows participants to improve visual tracking, fine and gross motor dexterity, eye-hand coordination and sensory motor skills. Overall it allows residents to create their own safe activity as they pass along the corridor.



Current communication platforms



The alzheimer's society offers a platform for people with dementia as well as their families, friends and overall support offering the best advice and guidance.

This is a good platform to have as some people don't like to open up to their families. By having something available for them to browse and see relatable stories will comfort and support them.

Symptoms

Each person is unique and will experience dementia in their own way. The different types of dementia tend to affect people differently, especially in the early stages. How others respond to the person, and how supportive or enabling the person's surroundings are, also greatly affect how well someone can live with dementia.

Product Inspiration

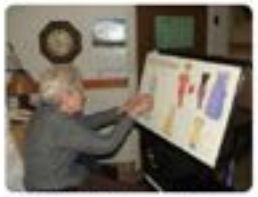
Designing dementia-friendly care homes...

Locks and Latches Board - refining...

Forget Coffins! Artful Ashes Will Swirl...

How Color Shapes Our Lives

Damon Hyldreth KNOT series - Stainless...



Our Magnetic Boards offer something...

I simply believe that some part of the...

View-Master

Chair Crazy Golf for Dementia Patients...

Inspiring Quotes When You Need Some Life...

Nesigner: Selected Works

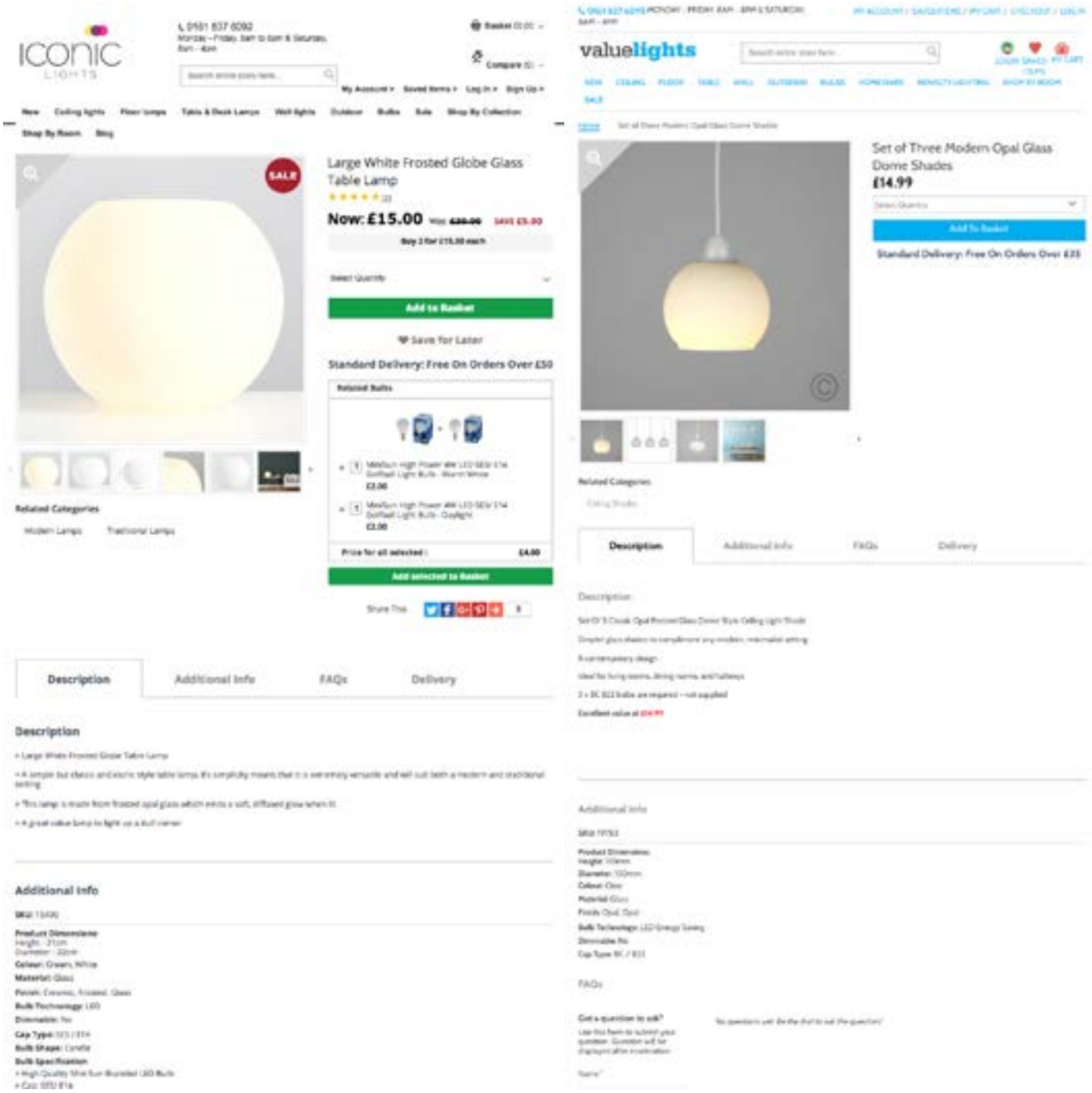
The In Between

by Piketubbles

I though it was important to get a feel for the type of product I wanted to design. I were interested in orbs and how colour shines through them, this then lead me to think about how it could be interacted with. Also when looking at inspiration I noticed how current products use a variety of colour to help with navigation and this also helps when the user observes the product.

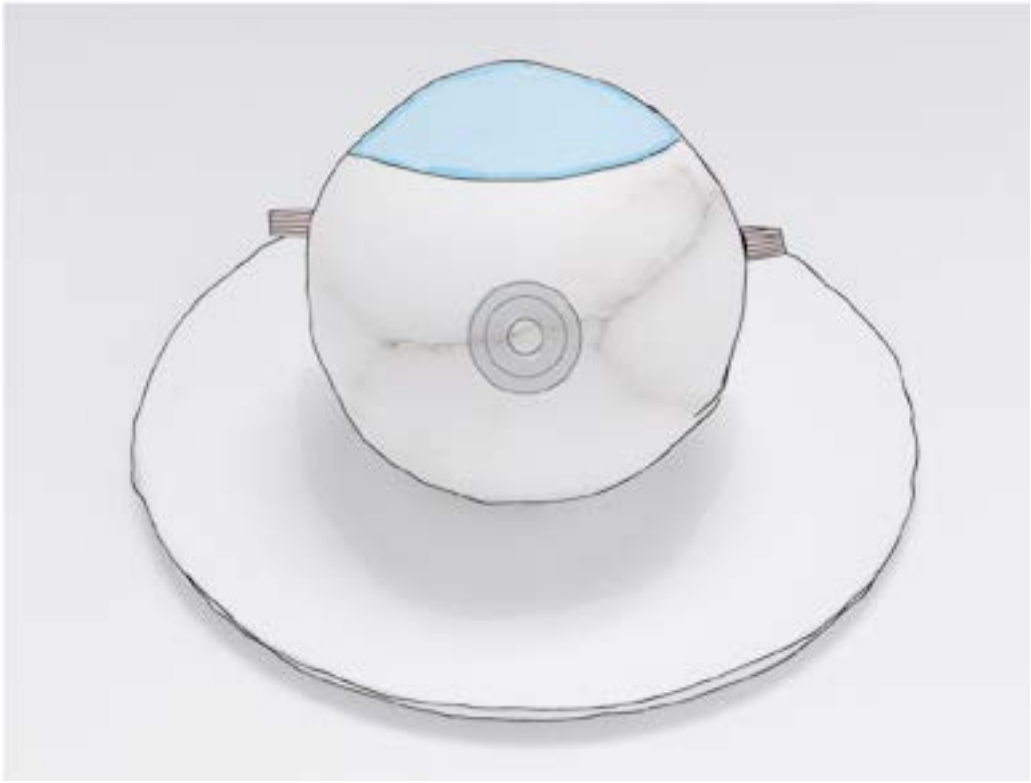
Chosen Product

I have decided to use a frosted glass globe that will allow me to house the arduino inside of it, I plan on creating a wooden board that will be the base of my product with a small section for the Rfid scanner to fit under. This will allow me to create the product I would like for the final show and It also makes the product look more professional and will have more of an impact on the users rather than a plastic orb other another material similar.



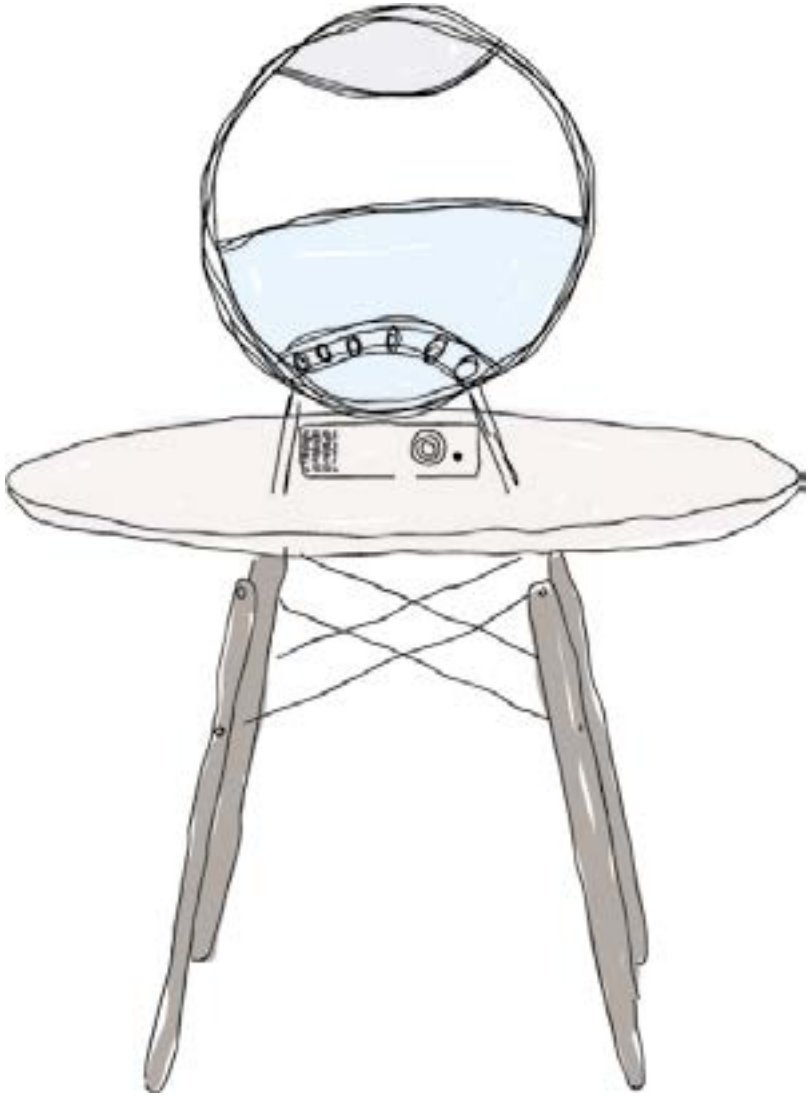
CONCEPTS & THEMES

Concept One



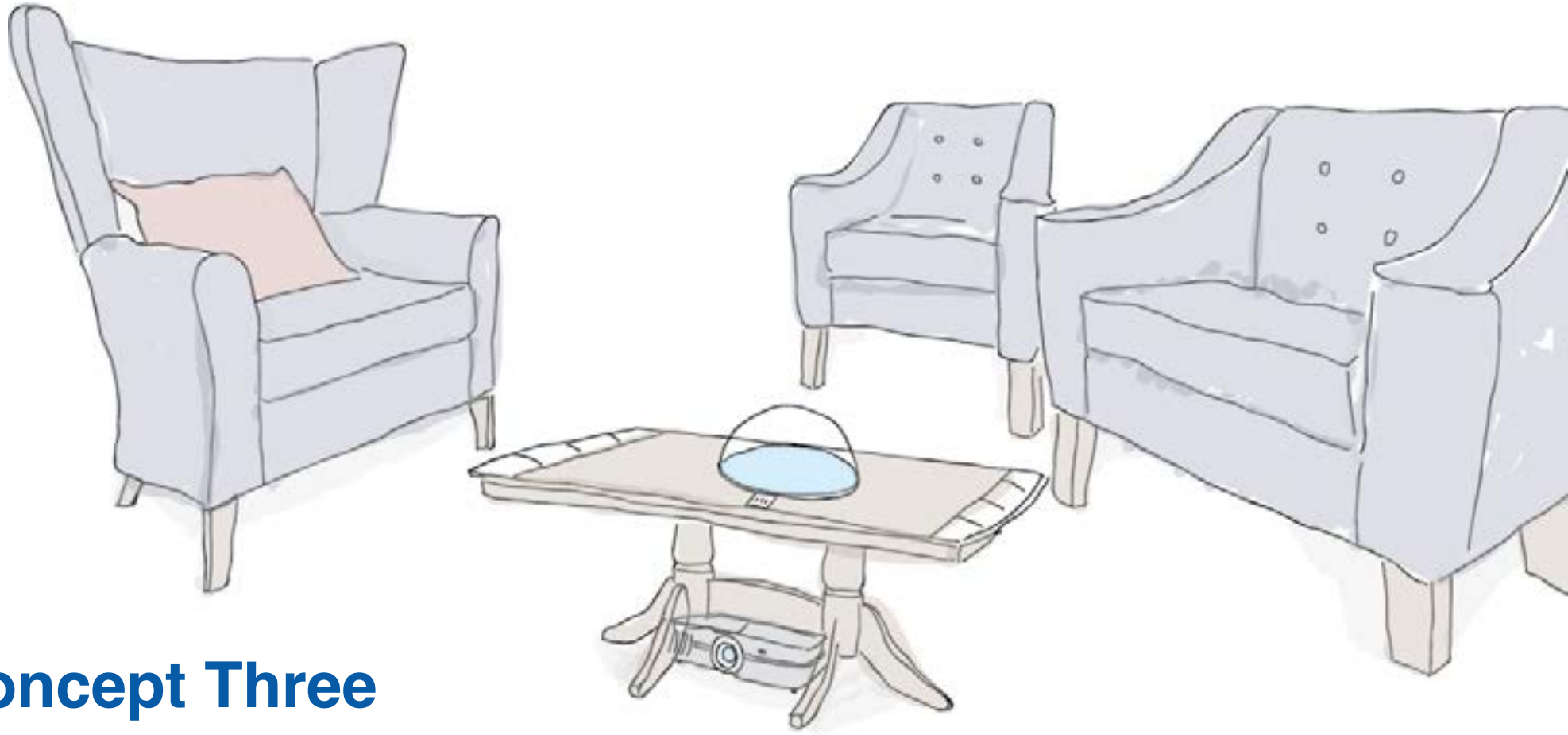
Concept One is a simple version of what I vision Orb to be, it uses Arduino and Processing to power the device with a built in projector that will display the stored memories that have been uploaded. Colours will also be linked to specific memories and this helps strengthen the memory and helps people engage in a more in depth conversation with other people around them. The orb also has two buttons that allows users to change between memories at a simple twist.

Concept Two



Concept two focuses on touch to share memories. The idea behind this is when a users swipes left or right on the top of the orb different images/videos will be shared through the projector. I have also incorporated colour as it helps with remembering memories as they can be related to themes or pick up points.

I would have the orb located on top of a surface directed towards a wall so that people could walk up to it and begin to explore the memories that have been stored.



Concept Three

Concept three allows people to engage in conversation with their family and friends on a personal level. By using the community rooms within the care homes people can upload and link their memories to Orb, allowing them to share their memories as well as sharing related experiences and interests.

The idea is to bring back missing communication as well as having someone safe to store memories without them getting lost or stolen.

Themes

Holidays

The idea for this theme was to explore peoples holiday experiences, either abroad or in the UK. As a lot of people had beach holidays in the UK its easier to engage in conversation as people will have similar experiences and holiday destinations to engage in conversation with.

Public Events

The idea for this theme was to look into peoples experiences within the queens coronation/England winning the world cup etc. This example is good because it allows people to share their personal experiences, and because everyone was involved everyone will have their own memories to share.

50's, 60's, 70's & 80's

The idea for the 50's, 60's, 70's & 80's was to explore peoples life's through key periods of their life. This allows people to share multiple memories and experiences as its not focused on one specific area of engagement. This means that they can share memories with family, friends and carers and other people who have dementia in the home.

Chosen Concept & Theme

50’s, 60’s, 70’s & 80’s

I have decided to go with the following theme as it allows people to explore more memories and engage in more conversation without repeating previous. I think this is an interesting theme as there are a variety of periods in time to explore, as well as key events and personal experiences.

Recalling Memories Through Time Periods

Engage in conversation on a personal level	Personal experience	Touch Points
Group conversations	Sharing memories	Local and national experiences

Product Branding

When thinking of possible product names I decided to go with Orb as I felt that it was fresh and welcoming and stood out compared to the business Communicare. This is important as I don't people to get drawn away from what Orb stands for in comparison to Communicare (which is maintaining the future for people who have dementia through a I pad service).

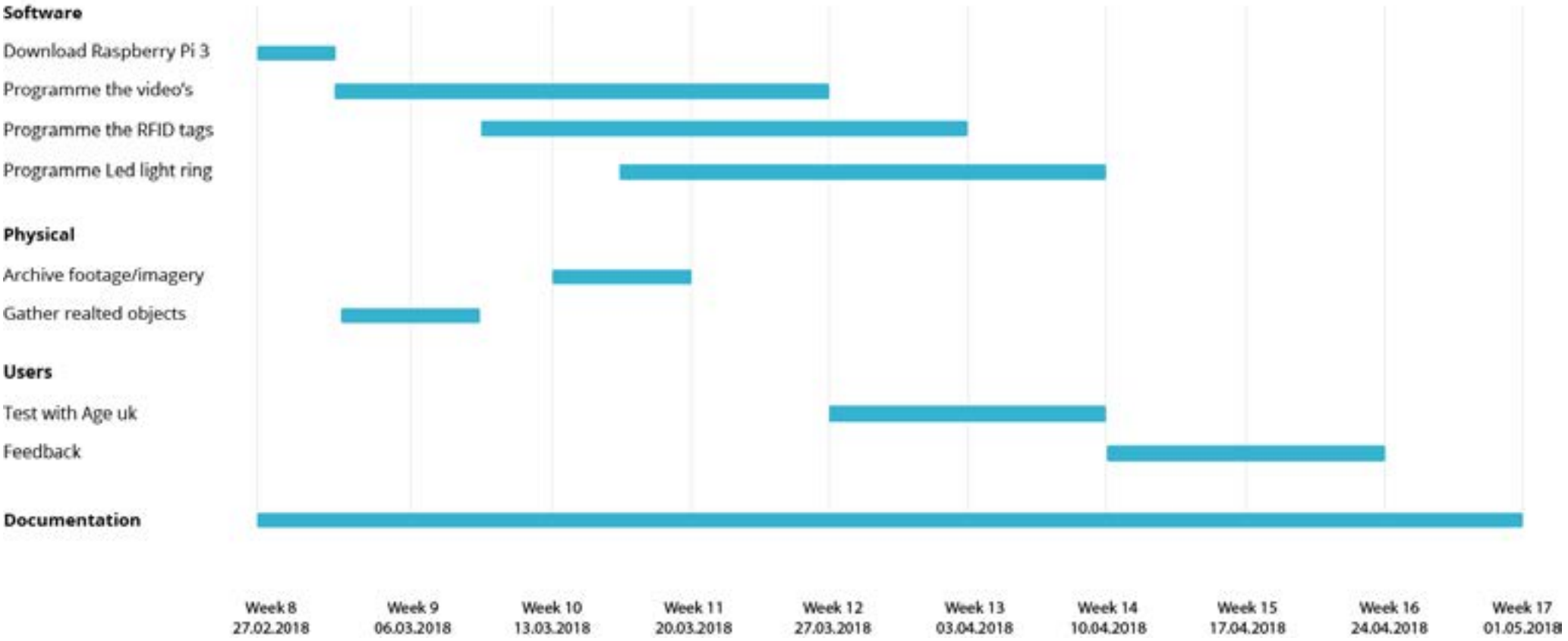
On the other hand Orb focuses on maintaining and sharing memories with the aim to improve communication, memory loss and helping people feel less socially withdrawn. This is an issue that I thought I would address within Orb, as a lot of products that are currently out there don't focus on maintaining and sharing memories between family and friends.

The reason why I have called my product Orb is due to the fact when my Nana passed away with dementia an orb came round my bedroom, so I thought that it would be fitting and also meaningful.

USP

Orb will represent the future of healthcare for dementia, it will focus on bring back communication between dementia patients and families/carers. The use of objects, colours and projection will help stimulate conversation and bring back memories that are in the back of peoples minds.

Time-plan


Software
Download Raspberry Pi 3
Programme the video's
Programme the RFID tags
Programme Led light ring
Physical
Archive footage/imagery
Gather realted objects
Users
Test with Age uk
Feedback
Documentation
Week 8 27.02.2018
Week 9 06.03.2018
Week 10 13.03.2018
Week 11 20.03.2018
Week 12 27.03.2018
Week 13 03.04.2018
Week 14 10.04.2018
Week 15 17.04.2018
Week 16 24.04.2018
Week 17 01.05.2018

Interviews

To gain a better understanding of my users I decided to interview real people who have dementia as well as their families and friends.

Interview Feedback

Male, 23, Carer

What do you think is important when dealing with people who have dementia?

I think that supporting people is a key part when dealing with dementia, as everyone experiences dementia in their own way. Also I think by keeping the brain active allows people to stay active and this will help with their memories.

How often do you engage with people who have dementia?

My grandmother has dementia, I usually see her 2 - 3 times a week either in the dementia home or with family and friends taking her out for the day etc.

Is there anything out there that you know helps support dementia?

I haven't came across anything that stands out, besides progression with memory and games to help brain functionality.

Female, 28, Sales assistant

What do you think is important when dealing with people who have dementia?

I think that dementia is hard to deal with as everyone has a different experience and its hard to follow peoples progress. As dementia currently isn't curable I think by supporting and making sure that you are as involved as possible will help ease dementia. I know many people that have suffered with dementia and from their experience maintaining the communication and engagement help with the disease.

How often do you engage with people who have dementia?

I no longer engage with people who have dementia as my Nana passed away, but when I did see her it would be twice a week. We would share memories that we had together as well as our own. Trying to think of new conversation was tricky but she was happy with the memories that we shared.

Is there anything out there that you know helps support dementia?

I have heard of a couple of apps that help with keeping the brain active but I haven't seen or heard of anything that helps support dementia apart from the alzheimer's society forum.

Interview Feedback

Male, 31, Banker

What do you think is important when dealing with people who have dementia?

I would say that by maintaining communication between the person who has dementia and their family is important as they need reassurance and help with the daily tasks that they will be struggling with. I would also say that capturing new memories is also important so that they don't forget new interests or experiences.

How often do you engage with people who have dementia?

My partners Aunt has recently got dementia, when we go to visit her we both think it's important to engage in new conversation and share our weekly memories with her.

Is there anything out there that you know helps support dementia?

As my partners Aunt has recently got dementia we haven't looked into anything at the moment but we have been informed about an app that's good for uploading and sharing memories with.

Male, 49, Area Manager

What do you think is important when dealing with people who have dementia?

The most important thing that I can think of is understanding what that person is going through and how to deal with it correctly. I think some people can underestimate the situations that happen and this can lead to greater difficulties and struggles.

How often do you engage with people who have dementia?

My father has dementia and me and my family see him weekly, he has only recently developed symptoms and is struggling with his short term memory.

Is there anything out there that you know helps support dementia?

A really good thing that we have found is memory games as it helps the mind stay active and also helps with his concentration, we have also seen improvements with his memory.

Interview Feedback

Male, 68, Retired

What do you think is important when dealing with people who have dementia?

When it comes to dementia I think that there is a variety of important focus point such as activity, health, communication and relationships. Personally I think that communication is the biggest area of focus as once that part has gone its harder to get back.

How often do you engage with people who have dementia?

My mother has recently just passed away with dementia. I did use to see her around 3 times a week, we would go for walks and take her to a local cafe.

Is there anything out there that you know helps support dementia?

I think that keeping on top of conversation and by making them feel as involved as possible is important as it makes them feel happy even though they might forget.

Female, 86, Retired

What do you think is important when dealing with people who have dementia?

I think that dementia is hard to pin point one area of importance to focus on, from my own experience I would say that by having them in good company and keeping an eye on how the disease if affecting them is important. I also think that by sharing memories also helps with maintaining the brains activity as they are engaging in conversation.

How often do you engage with people who have dementia?

I don’t see my sister in law a lot but when I do its nice to catch up on what we have both been doing. I like to take photos of what we have done so it gives her something to look at and talk about with others.

Is there anything out there that you know helps support dementia?

I have an app called the Book of you that I use to store our memories in which I think is very helpful as it means our memories are not getting damaged.

Interview Feedback

Female, 22, Student

What do you think is important when dealing with people who have dementia?

I think that demonstrating patience is key, as this helps understand the struggle that they person is going through and allows you to think about the correct response.

How often do you engage with people who have dementia?

My grandma has early stage dementia and she keeps forgetting small tasks to do, we have started writing notes to keep her on track.

Is there anything out there that you know helps support dementia?

I have heard that by writing down daily tasks and activities can help with memory. This also helps them maintain a schedule and keeps them on track without doing the same thing twice.

Key Insight from Interview

“Demonstrating patience”

“Sharing memories”

“Maintaining communication”

“Understanding what that person is going through”

“Keeping the brain active ”

“Communication and engagement”

“Activity, health, communication and relationships”

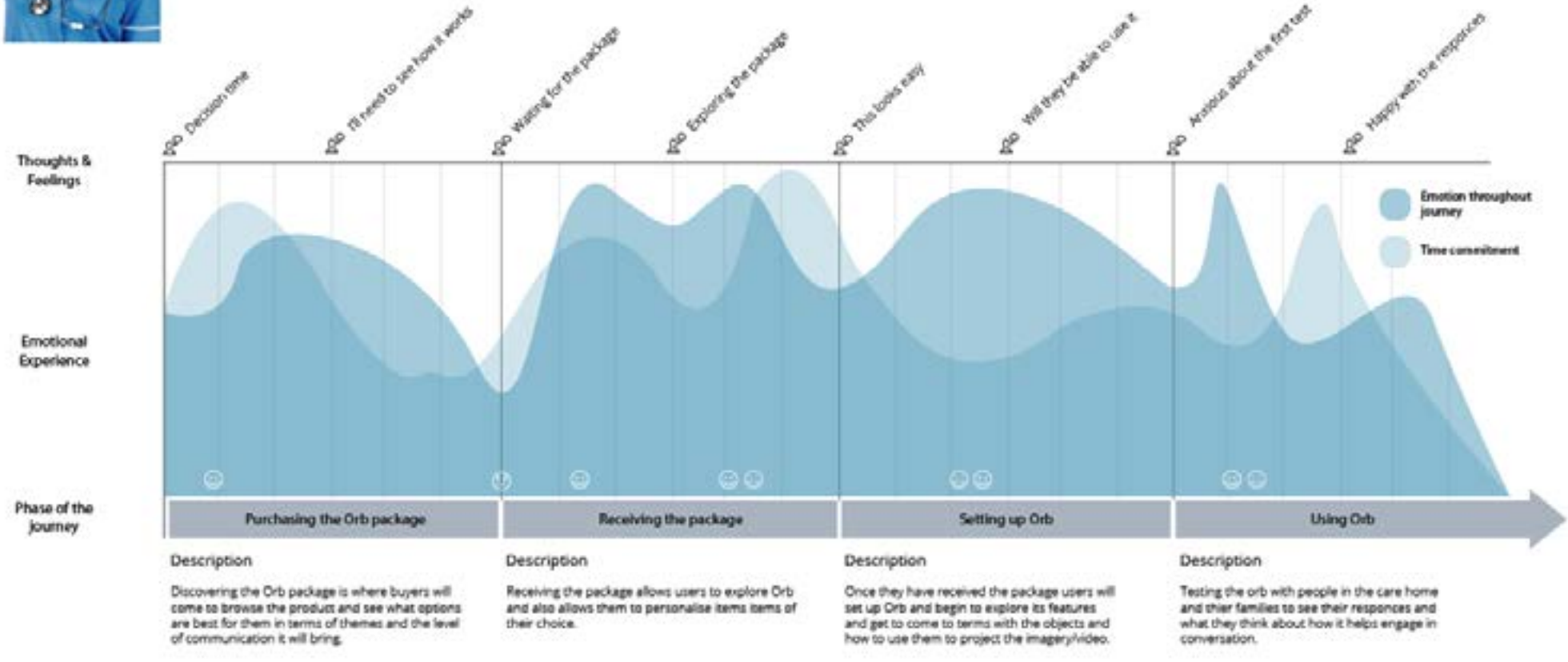
“Helping brain functionality”

User Journey

Kelly Haigh **Ordering Orb package - User Journey - Experiecne map**

26 - Care home nurse

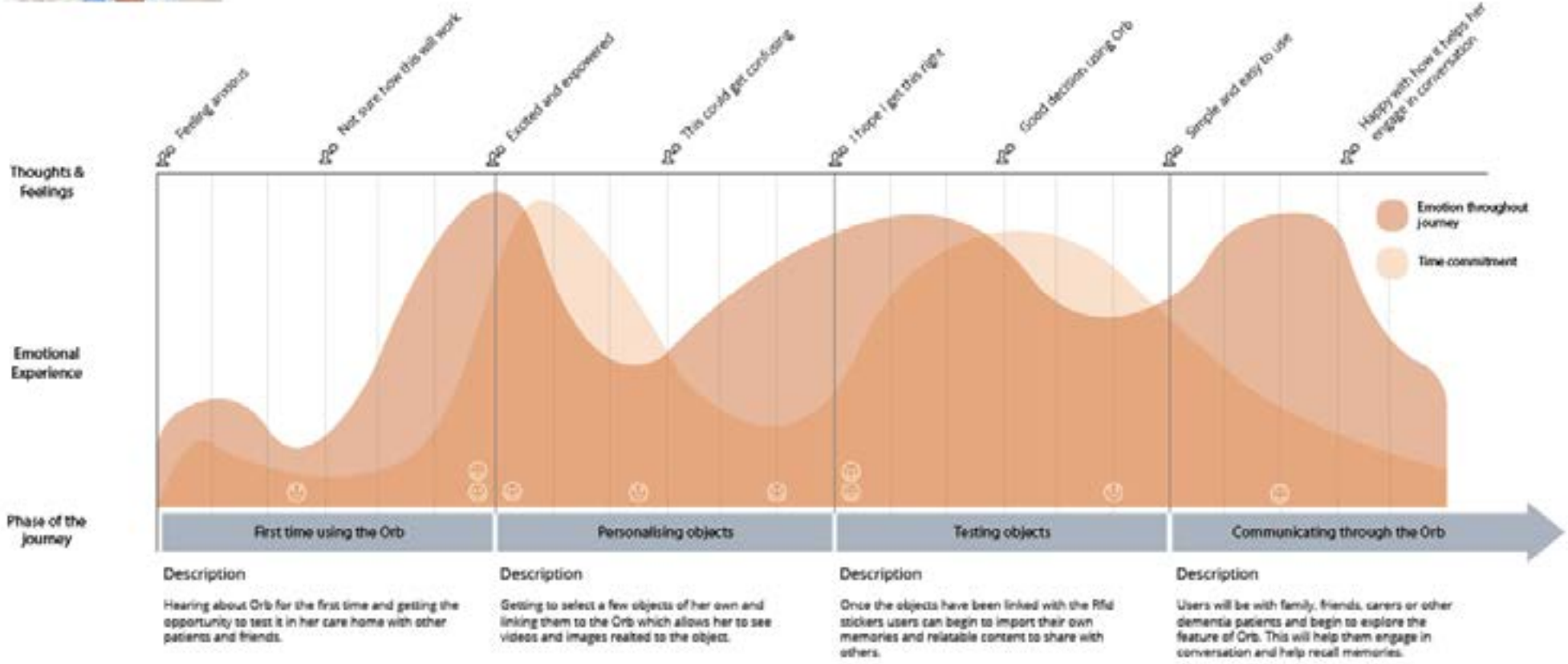
Kelly is wanting to help families and friends enage in conversation with their family members who are suffering with dementia. She has come across Communicare and the Orb service that they offer to help users engage in conversation.



User Journey

Audrey Hardy **Ordering Orb package - User Journey - Experiecne map**
84 - Retired Dementia Patient

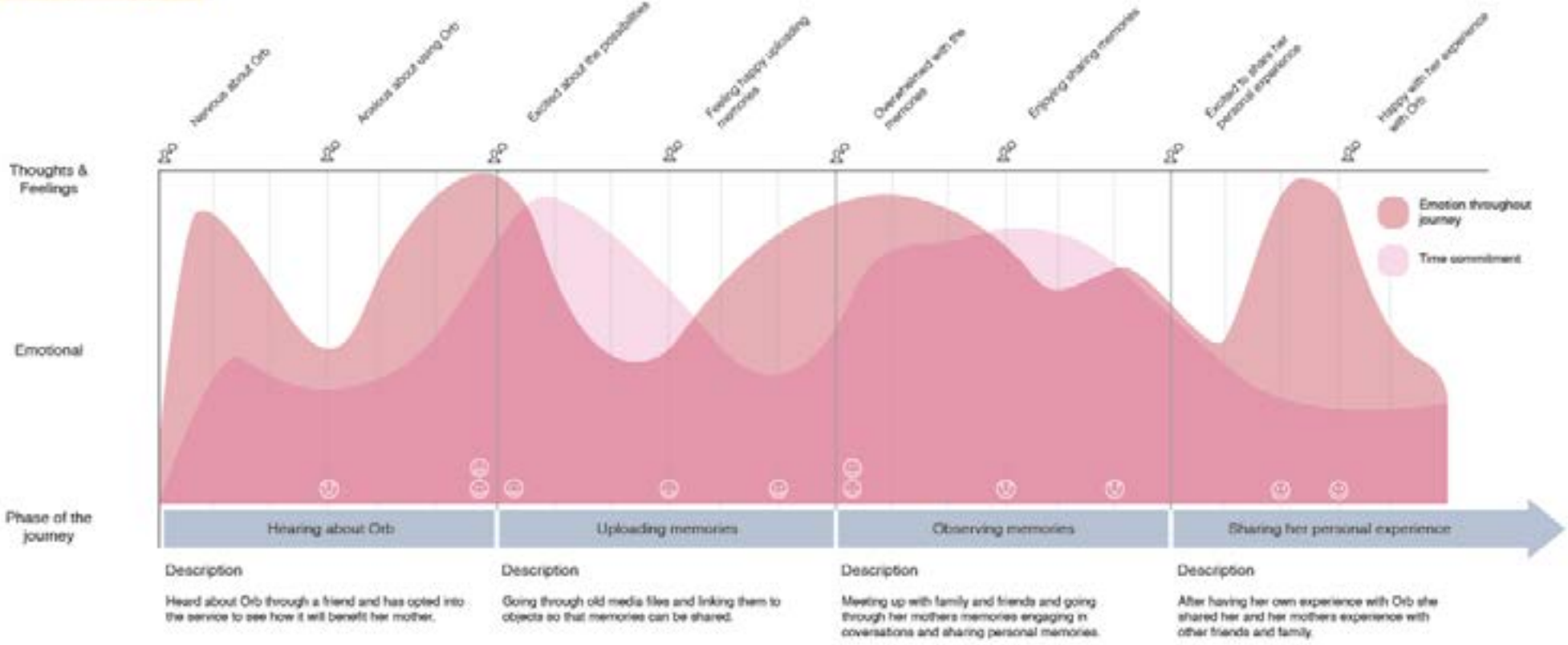
Audrey is developing early stage demenita and is beginging to find it hard to engage in conversation with her family and friends without repeating herself. .
She has been looking for something to help her engage in conversation and has got the oportunity to trail Orb in her care home



User Journey

Pauline Wilkinson Experiencing - User Journey - Experiecne map
84 - Retired Dementia Patient

Pauline has heard about Communicates Orb and is interested in linking her mothers memories to it so that they can share her experiences with her family and friends. She currently stores her mother's memories in photo books and in disks of video clips and music.



CommuniCare
Maintain the future

The introduction will show communicare (as the company) as well as Orb that will display its feature and what benefits it bring to people with dementia.

The setting for Orb would ideally be in a living room or within aa care home sitting room. The reason for this scenery allows people to engage in more personal conversations with their family and friends.

Family interaction will be the next scene that will appear, this will show support and will allow people to feel engage with the video. The family will be looking at a memory books and talking about the photos.

The next scen will switch over to the memory book (photo book) where users would select the memories that they wanted to upload to the Orb.

User will upload their memories across to the orb and place them within the Communicare Orb folder

Users will then observe the memories that they have uploaded with family and friends aswell as the person who has dementia which will help them re engage in conversation.

The memories will be shown on a screen or projected onto a blank background depending on the audience size.

Advertisement & Publication

Because this product is very specific to people who have dementia, I thought of possible ways that advertising would be best suited. Focusing on Print, Digital & Face to face.

Visual Inspiration

FOOTBALL VS ALZHEIMER - LIBERO MAGAZINE...

by LOLA MollenLowe

NHS Dementia Awareness

We'd Show An Alzheimer's Survivor Here...

Dementia - Here's how to help someone...

Alzheimer awareness campaign print ad

A bunch of things to know about dementia... #Alzheimers #mindcrowd #tgen

- The Greatest Hits -

NHS Dementia Awareness

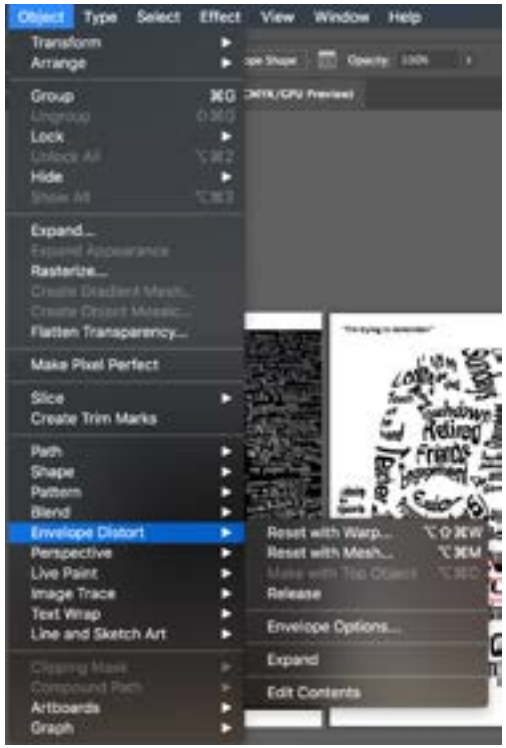
Harvard-trained brain researcher has a...

Does Living In A Healthy Environment...

After looking at what is currently out there, it came quiet apparent that there were a variety of posters to support dementia. I also looked online and there were a variety of videos that helped explain what dementia is as well as advertisement videos. When it comes to designing my advertisements I will create a selection to support each are of advertising so that it covers all areas.

Campaign Poster

After looking into current posters, I wanted to design something that was memorable and relate-able to my area of focus. I created this poster on Illustrator by using the shape of a persons face, I gathered a variety of text related to memories and people experiences. I made each word separate and then created outline so it was editable, I then applied an envelope distort with mesh so I could place each word to fit the face shape.



"I'm trying to remember"

Campaign TV Advert

Fitting in with the theme of advertising for dementia I decided to do a similar advertisement to the alzheimer's society. Which shows family interaction as well as support, I think that showing family shows a lot for an advertisements as people can relate to the situation that they are watching and put themselves into it.

I also think by keeping the advertisement short and to the point is beneficial for people who have dementia as they will be just observing and not having to work out what each clip means.

Campaign Brochure

I also thought that it would be important to advertise the brochure within the care home, as this caters for people who aren't up to date with technology. This brochure gives people information on what Orb offers. As well as the benefits that the product brings to people who use it and a variety of support and care for family and friends that are dealing with dementia or know someone who is suffering.

I wanted to make sure that there was enough information displayed without overloading the information so people didn't get confused with what Communicare if offering and the product that is available.

Making the Product

When making the product it allowed me to go into enough detail that I needed to make it interesting and useful at the same time.

Object Inspiration

The Beach Comb Collection Collecting ephemera from walks on...

The materials needed for clear casting are water clear...

Autumn Walks is a collagraph, made from assembled materials...

Broken pottery from the sea - I have a collection of these...

Google Image Result for... by Gerry Gay

Orhan Pamuk's Museum of Innocence - in pictures

Braun Ceramic BN0171 wristwatch とても上品な配色。イエローの秒針がチャーミング。...

53 Ideas for DIY Journals, Diaries, Smash Books and All the...

Wayne Thiebaud American, born 1920, Row of Ties 1969

Modern Japanese pottery on Etsy

Healing Broken Butterflies

Perfume Bottle; Loetz Glass, Silver Overlay, Iridescent, S...

Imprint of Skin by Floor van Doremalen is part of Design...

Tree brown Christmas desktop with a Golden ball No. №2

Vedi la foto di Instagram di @studiodavidthulstrup • Place a...

Laser-Cut Fox

I thought it would be a good idea to gather a selection of images related to memorable objects that people associate with memories. This has helped me gather the objects that I am using, and this has also helped with thinking about the types of objects and how its not about the appearance but the memories linked to them.

Languages

Processing

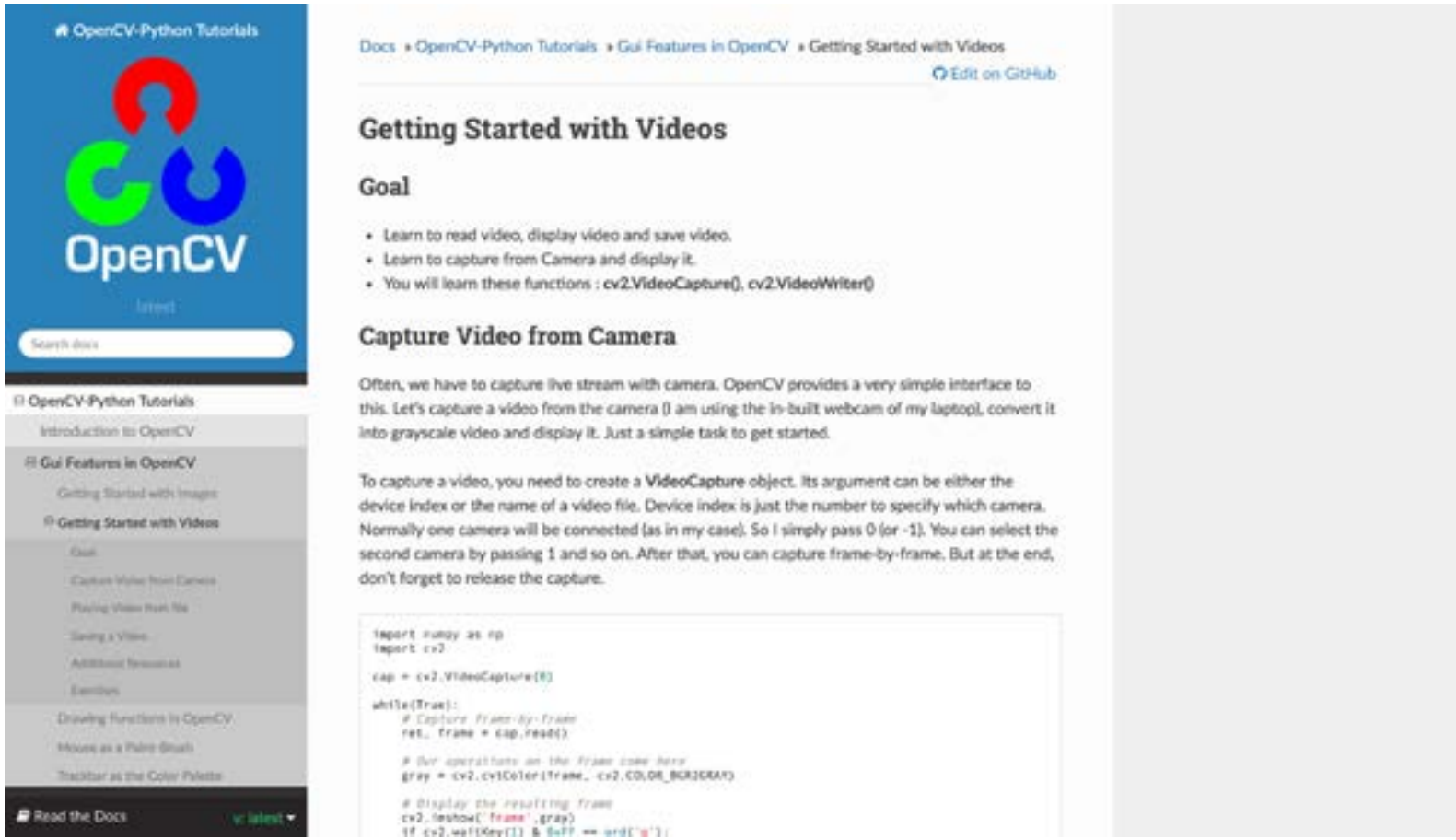
Processing would be used to control the videos after they were triggered by RFID. This language would work with Arduino linking, RFID, Video, Raspberry Pi 3 and Mood lights.

Arduino

The Arduino would be connected to the Pi and would have the RFID reader and the LED ring linked. This would then work with processing to alert it when an object had been swiped/placed a video would then be played.

Python

Python is and alternative option that would work with Raspberry pi to control the full system. The only downside to Python is that it doesn't allow LED code to run simply so it would have to be connected through Arduino.



I began to explore applications that I could use within the raspberry pi that connects through python. After exploring this and trying to download the library's it seemed more of a struggle and it was hard to understand how to write the code and link it all through python. Another struggle I had with python is that everyone I asked didn't seem to know how it worked, so I was relying on sourced content. This then lead me to look at other programmes that I could use within the Pi to create my prototype.

After looking at the languages available I wasn't sure what option to follow as I have never used python before, but I have used Arduino and Processing on previous projects. I spoke to multiple people at Maker Space and they said the easiest option would be to use Processing with Arduino as communicating between the 2 isn't difficult. They also showed me examples of how both languages worked with each other, which was useful as I felt more comfortable seeing it work.

Chosen Software & Languages

Raspberry Pi

The Raspberry Pi 3 Model B is the latest version of the Raspberry Pi, a tiny credit card size computer. Just add a keyboard, mouse, display, power supply, micro SD card with installed Linux Distribution and you'll have a fully fledged computer that can run applications from word processors and spreadsheets to games.

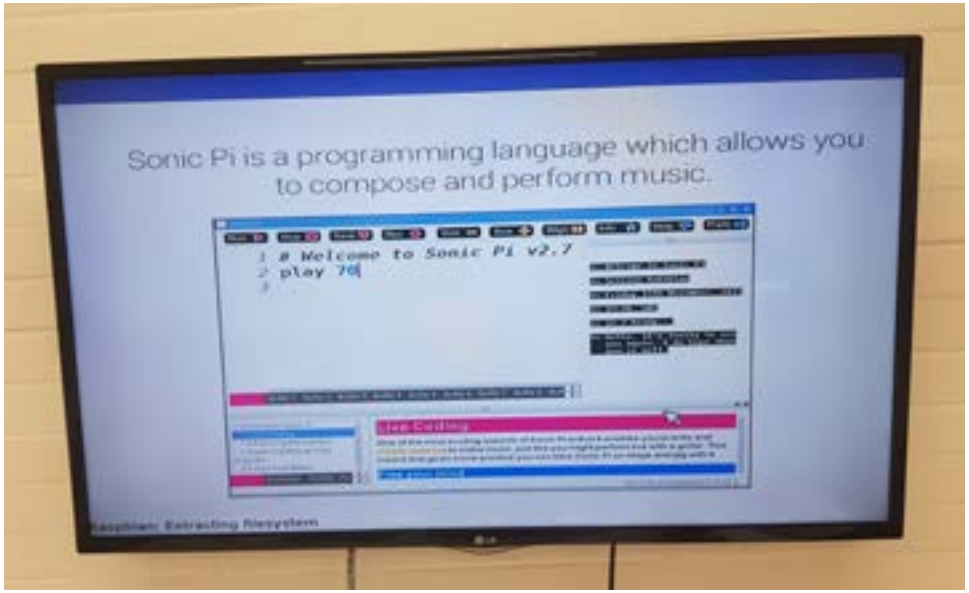
https://raspberry.piaustralia.com.au/raspberry-pi-3-model-b

ARDUINO

The Arduino Uno is a micro controller board based on the ATmega328. It has 20 digital input/output pins (of which 6 can be used as PWM outputs and 6 can be used as analogue inputs), a 16 MHz resonator, a USB connection, a power jack, an in-circuit system programming (ICSP) header, and a reset button.

https://www.pololu.com/product/2191

Setting up the Raspberry Pi 3



To begin setting up the Pi I had to Install a formatting software to erase all the files on the SD card that was provided in the kit. I then installed Raspberian onto the SD card which gave me the files needed to set up the Pi.

Before inserting the Sd card I needed to make sure that I have the mouse, keyboard and HDMI lead inserted so nothing interfered with the PI once it was loading up.

After this I inserted the sd card back in to the Pi and it allowed me to run the software and access the library's and programmes. Once this was complete I went into the terminal and downloaded Processing and Arduino so that I could code the Rfid, mood lighting and videos.

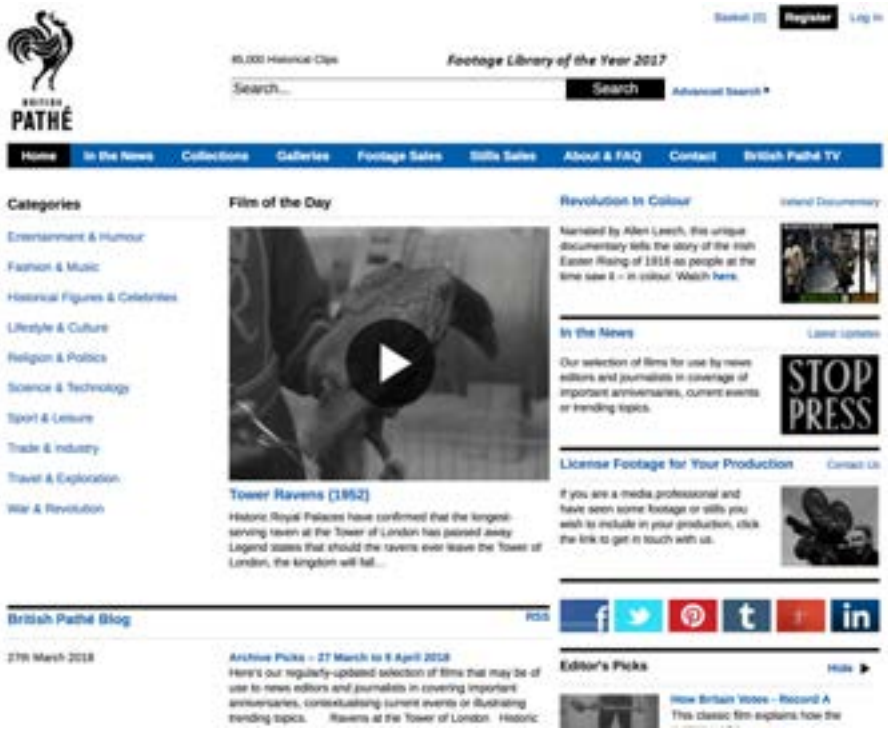
ESSENTIAL (FOR GENERAL USE)

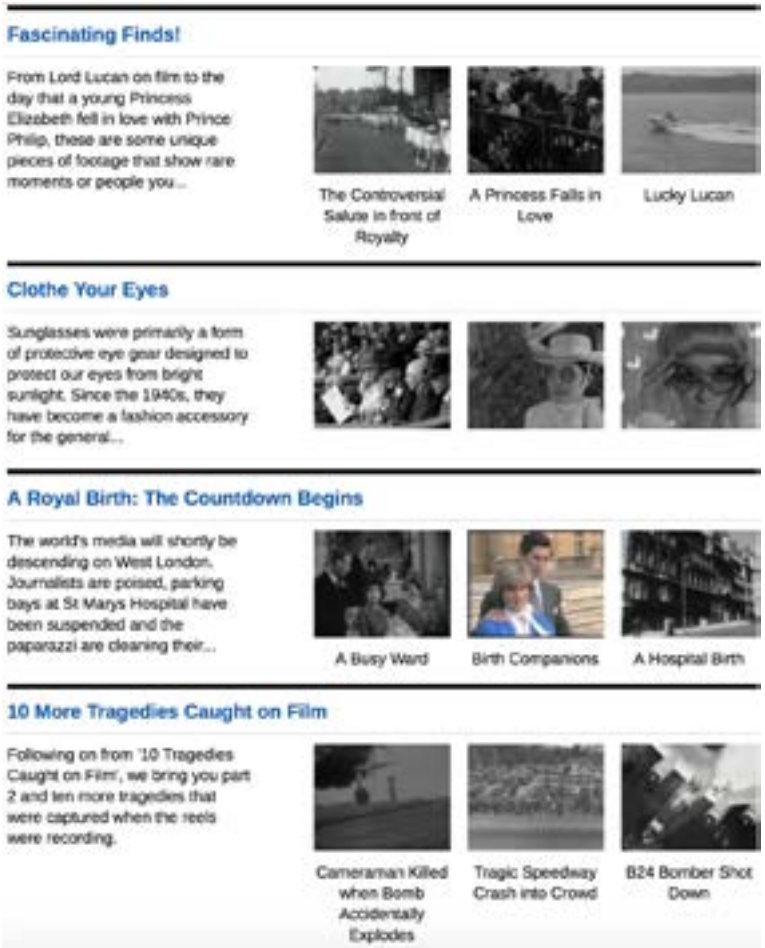
- SD Card
  - We recommend an 8GB class 4 SD card, ideally preinstalled with NOOBS.
- Display and connectivity cable
  - Any HDMI/DVI monitor and any TV should work as a display for the Pi. For best results, use one with HDMI input, but other connections are available for older devices.
- Keyboard and mouse
  - Any standard USB keyboard and mouse will work with your Raspberry Pi.
  - Wireless keyboards and mice will work if already paired.
  - For keyboard layout configuration options see raspi-config.
- Power supply
  - The Pi is powered by a USB Micro power supply (like most standard mobile phone chargers).
  - You'll need a good-quality power supply that can supply at least 2A at 5V for the Model 3B, or 700mA at 5V for the earlier, lower powered models.
  - Low current (~700mA) power supplies will work for basic usage, but are likely to cause the Pi to reboot if it draws too much power.

I followed a step by step guide that is available on the Raspberry PI website. It was very simple to follow and it allowed me to gather everything I needed before setting up the Pi. I think this is a vary useful guide for people who haven't used Raspberry Pi before as its simple to use and quick and easy.

Sourcing content

After looking at materials to source I came across the British Pathe, who have a variety of clips from the 50's, 60's and 70's. I will be using them as my main source as they have a wide set of library's for educational use. As well they have a You tube channel that allows me to download the footage they have archived.

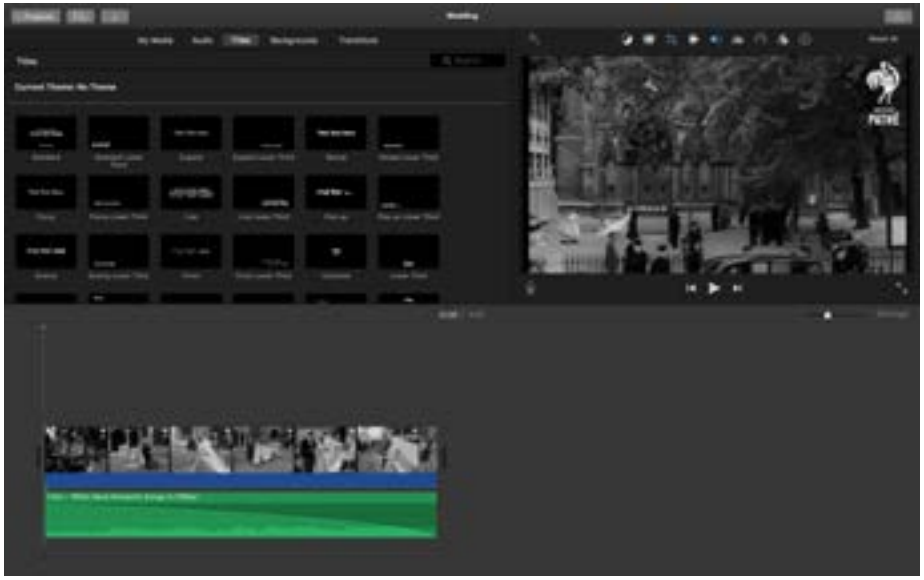




BRITISH PATHÉ

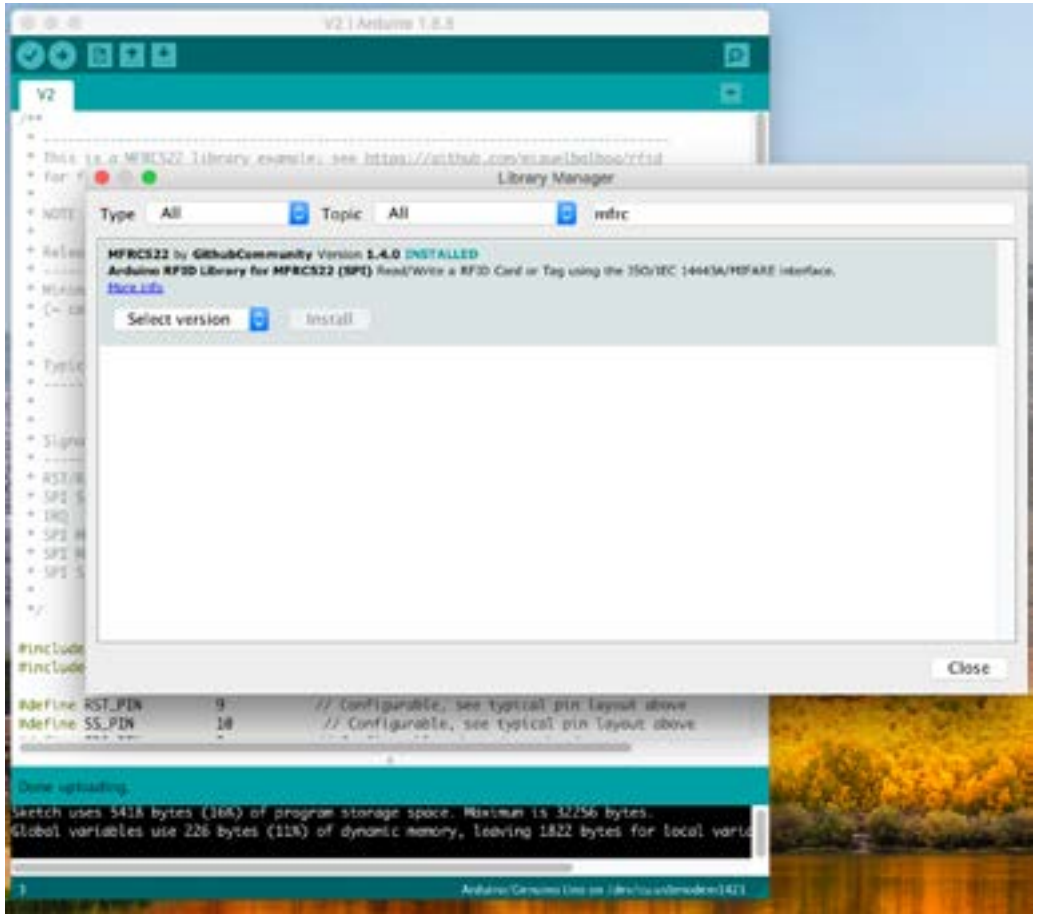
Video Editing

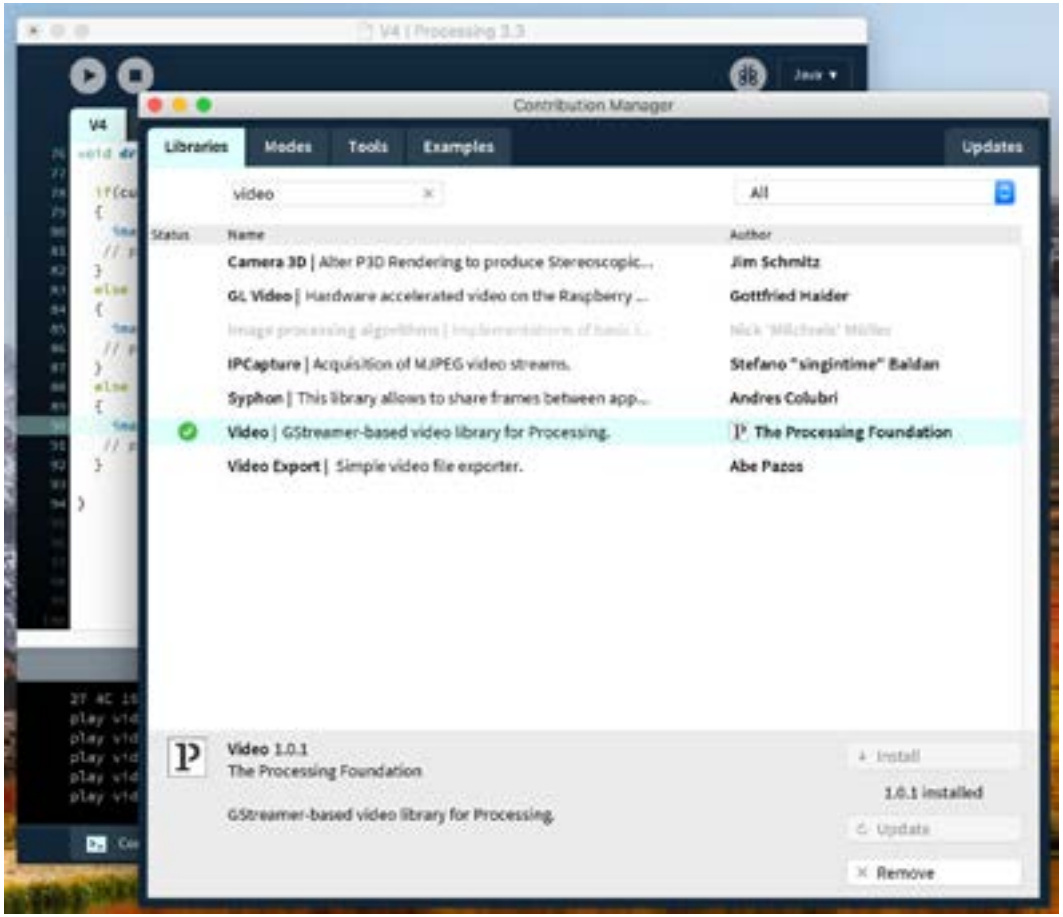
When editing the short video clips I used iMovie as not a lot was needed to be done. After downloading the video clips from the British Pathe's you tube channel I imported them into iMovie, I shortened the clips so that each clip is between 40 seconds to 1 minute. I also added backing tracks and removed the background noise so that it made the clips more interesting. With a couple of clips I left the original background music and voice over as it helped to explain the clips.



BRITISH PATHÉ

Adding Library's





Before I could begin coding I needed to install a library in Arduino for the Rfid reader and one in Processing for the videos to play through.

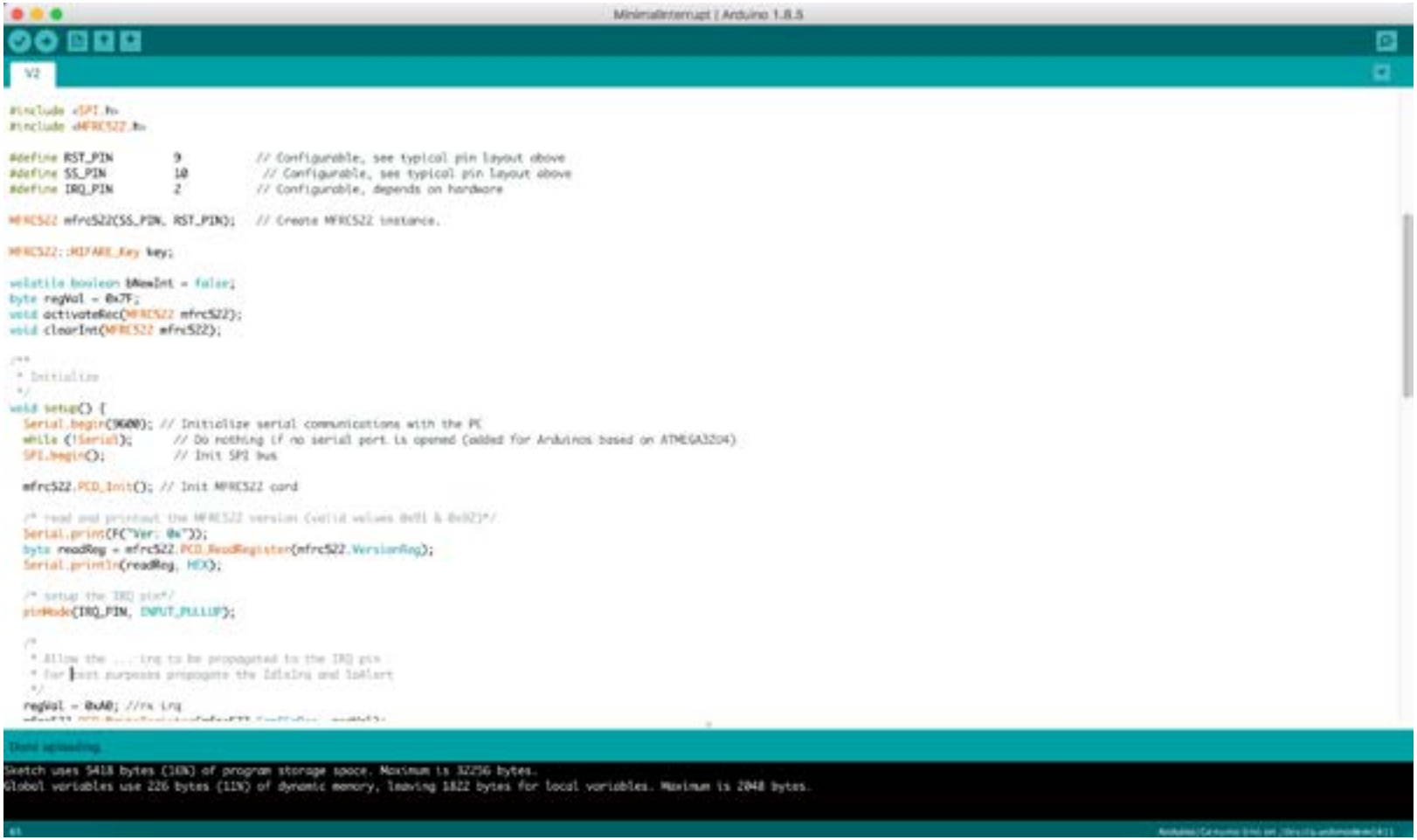
Arduino

```
// RFID reader for Arduino
// Wiring version by BARRAGAN <http://people.interaction-ivrea.it/h.barragan>
// Modified for Arduino by djmatic


int  val = 0;
char code[10];
int bytesread = 0;

void setup() {

Serial.begin(2400);  // RFID reader SOUT pin connected to Serial RX pin at 2400bps
pinMode(2,OUTPUT);   // Set digital pin 2 as OUTPUT to connect it to the RFID /ENABLE pin
digitalWrite(2, LOW);                 // Activate the RFID reader
}


 void loop() {

  if(Serial.available() > 0) {          // if data available from reader
    if((val = Serial.read()) == 10) {   // check for header
      bytesread = 0;
      while(bytesread<10) {              // read 10 digit code
        if( Serial.available() > 0) {
          val = Serial.read();
          if((val == 10)||(val == 13)) { // if header or stop bytes before the 10 digit reading
            break;                       // stop reading
          }
          code[bytesread] = val;         // add the digit
          bytesread++;                   // ready to read next digit
        }
      }
      if(bytesread == 10) {              // if 10 digit read is complete
        Serial.print("TAG code is: ");   // possibly a good TAG
        Serial.println(code);            // print the TAG code
      }
      bytesread = 0;
      digitalWrite(2, HIGH);                 // deactivate the RFID reader for a moment so it will not flood
           delay(1500);                      // wait for a bit
           digitalWrite(2, LOW);                 // Activate the RFID reader
    }
  }
}

// extra stuff
// digitalWrite(2, HIGH);            // deactivate RFID reader
```

Testing the code

I began looking at existing code for similar projects that had been done using RFID and Processing. I tested a variety of code in Arduino to see which one suited my project the best, there were different versions that allowed users to swipe objects over the RFID or even to place them on the rfid for a long period of time.

I decided to use the swipe as it was more interesting for a user to swipe and object and still be allowed to hold the object whilst something was playing in the background for them to observe.



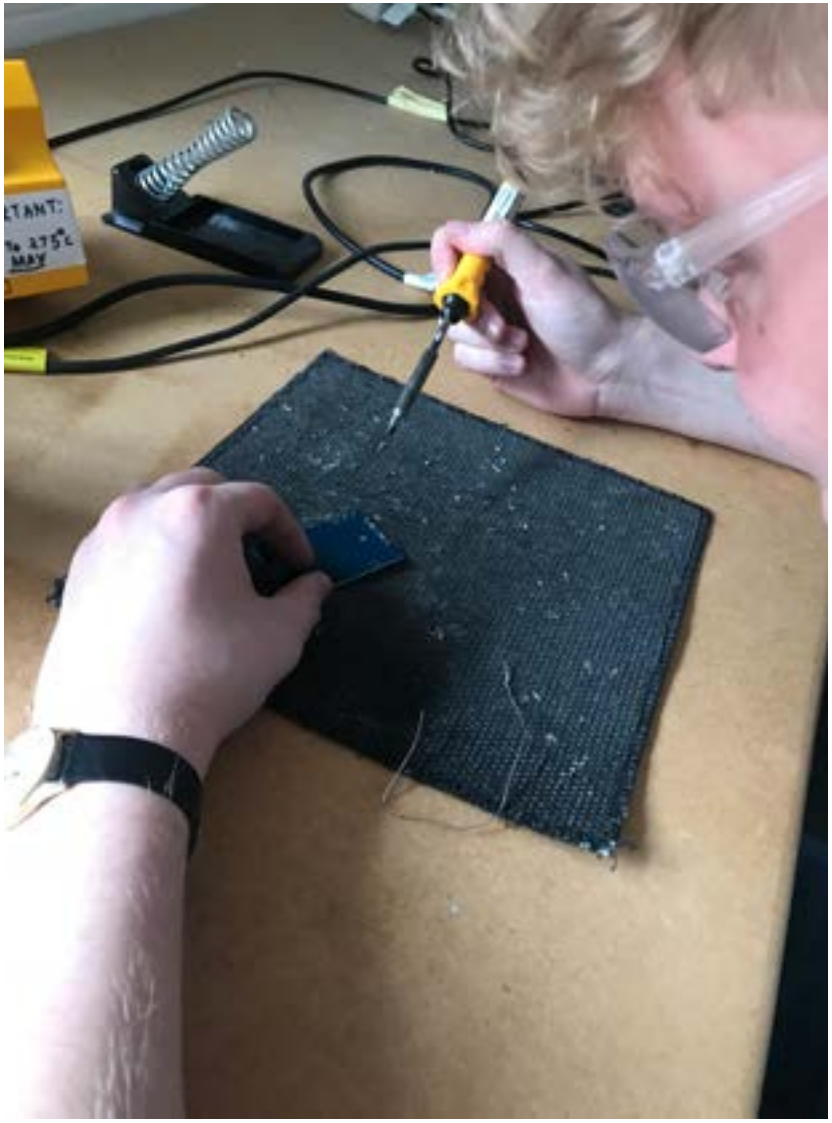
I set up the swipe code and had a meeting with Tommy to discuss which option he thought was best and if it was possible to do. We both agreed that the swipe would benefit the users more as they aren't just placing an object down and looking at something, they still get to touch and feel what it is that stores the memories inside it.

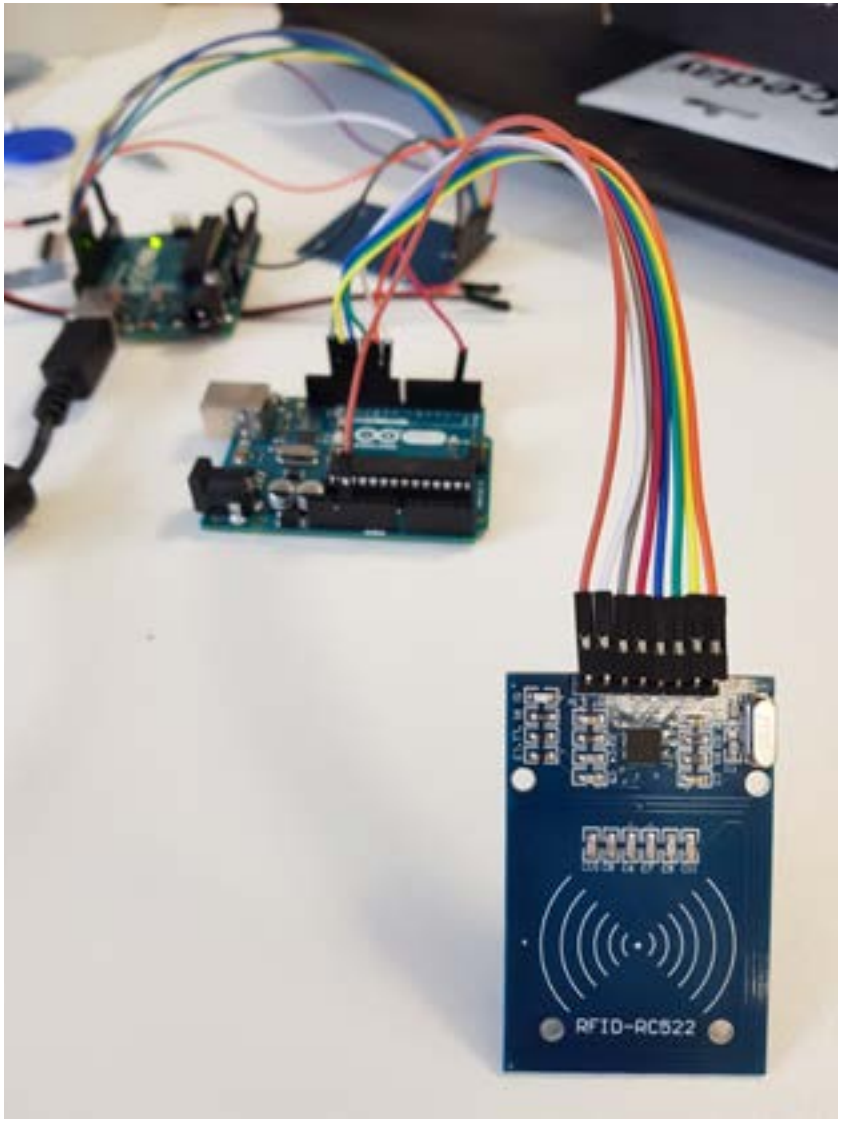
Once this part of the code was working it was time to get Processing and Arduino communicating which was easy enough, as each serial had to match within each piece of software.

The Code

```
#Include <SPI.h>
#include <MFRC522.h>

#include <Adafruit_NeoPixel.h>
#ifdef __AVR__
#include <avr/power.h>
#endif

// Which pin on the Arduino is connected to the NeoPixels?
// On a Trinket or Gemma we suggest changing this to 1
#define PIN            7

// How many NeoPixels are attached to the Arduino?
#define NUMPIXELS      24

// When we setup the NeoPixel library, we tell it how many pixels,
and which pin to use to send signals.
// Note that for older NeoPixel strips you might need to change
the third parameter--see the strandtest
// example for more information on possible values.
Adafruit_NeoPixel strip = Adafruit_NeoPixel(NUMPIXELS,
PIN, NEO_GRBW + NEO_KHZ800);

#define RST_PIN        9          // Configurable, see typical pin
layout above
#define SS_PIN         10         // Configurable, see typical pin
layout above
#define IRQ_PIN        2          // Configurable, depends on
hardware

MFRC522 mfrc522(SS_PIN, RST_PIN);   // Create MFRC522
instance.

MFRC522::MIFARE_Key key;

byte cardValue[4];

volatile boolean bNewInt = false;
byte regVal = 0x7F;
void activateRec(MFRC522 mfrc522);
void clearInt(MFRC522 mfrc522);

uint32_t currentColor;
uint8_t  currentOffindex;
/**
  Initialize.
*/
void setup() {
  Serial.begin(9600); // Initialize serial communications with the
PC
  while (!Serial);     // Do nothing if no serial port is opened
(added for Arduinos based on ATMEGA32U4)
  SPI.begin();         // Init SPI bus

  mfrc522.PCD_Init(); // Init MFRC522 card

  currentColor    = strip.Color(0, 0, 0);
  currentOffindex = 0;

  /* read and printout the MFRC522 version (valid values 0x91
& 0x92)*/
  Serial.print(F("Ver: 0x"));
  byte readReg = mfrc522.PCD_ReadRegister(mfrc522.Version-
Reg);
  Serial.println(readReg, HEX);

  /* setup the IRQ pin*/
  pinMode(IRQ_PIN, INPUT_PULLUP);

  /*
    Allow the ... irq to be propagated to the IRQ pin
    For test purposes propagate the IdleIrq and loAlert
  */
  regVal = 0xA0; //rx irq
  mfrc522.PCD_WriteRegister(mfrc522.ComIEnReg, regVal);

  bNewInt = false; //interrupt flag

  /*Activate the interrupt*/
  attachInterrupt(digitalPinToInterrupt(IRQ_PIN), readCard,
FALLING);

  do { //clear a spourious interrupt at start
    ;
  } while (!bNewInt);
  bNewInt = false;

  Serial.println(F("End setup"));

  strip.begin(); // This initializes the NeoPixel library.

  colorWipe(strip.Color(0, 0, 0), 150); // Red
  colorWipe(strip.Color(0, 0, 0), 150); // Green
  colorWipe(strip.Color(0, 0, 0), 150); // Blue
}

void colorWipe(uint32_t color, uint8_t offindex) {
  for (uint16_t i = 0; I < strip.numPixels(); i++) {
    if (I != offindex)
      strip.setPixelColor(i, strip.Color(0, 0, 0));
    else
      strip.setPixelColor(i, color);

  }
  strip.show();
}

/**
  Main loop.
*/
void loop() {
  if (bNewInt) { //new read interrupt
    //  Serial.print(F("Interrupt. "));
    mfrc522.PICC_ReadCardSerial(); //read the tag data
    // Show some details of the PICC (that is: the tag/card)
    // Serial.print(F("Card UID:"));

    // String value = (String)mfrc522.uid.uidByte[0];
    //   Serial.print(value);

    String value;

    for (int I = 0; I < mfrc522.uid.size; I++)
    {
      cardValue[i] = mfrc522.uid.uidByte[i];
      value = value + String(cardValue[i], HEX);
    }
    Serial.println(value);

    if (value == "b524fcf")
    {
      // change colour

      currentColor = strip.Color(75, 0, 219); // Green

    }
    else if (value == "c72518f2")
    {
      // change colour
      currentColor = strip.Color(255, 69, 0); // Blue
    }
    else if (value == "572418f2")
    {
      // change colour
      currentColor = strip.Color(255, 0, 0); // Red
    }

    clearInt(mfrc522);
    mfrc522.PICC_HaltA();
    bNewInt = false;

  }

  // The receiving block needs regular retriggering (tell the tag it
should transmit??)
  // (mfrc522.PCD_WriteRegister(mfrc522.FIFODataReg,m-
frc522.PICC_CMD_REQA);)
  activateRec(mfrc522);
  delay(50);

  colorWipe(currentColor, currentOffindex);
  currentOffindex = (currentOffindex + 1) % strip.numPixels();
} //loop()

/**
  Helper routine to dump a byte array as hex values to Serial.
*/
void dump_byte_array(byte * buffer, byte bufferSize) {
  for (byte I = 0; I < bufferSize; i++) {
    Serial.print(buffer[i] < 0x10 ? " 0" : " ");
    Serial.print(buffer[i], HEX);
  }
}
/**
  MFRC522 interrupt serving routine
*/
void readCard() {
  bNewInt = true;
}

/*
  The function sending to the MFRC522 the needed commands
to activate the reception
*/
void activateRec(MFRC522 mfrc522) {
  mfrc522.PCD_WriteRegister(mfrc522.FIFODataReg, mfrc522.
PICC_CMD_REQA);
  mfrc522.PCD_WriteRegister(mfrc522.CommandReg, mfrc522.
PCD_Transceive);
  mfrc522.PCD_WriteRegister(mfrc522.BitFramingReg, 0x87);
}

/*
  The function to clear the pending interrupt bits after interrupt
serving routine
*/
void clearInt(MFRC522 mfrc522) {
  mfrc522.PCD_WriteRegister(mfrc522.ComIrqReg, 0x7F);
}
```

Setting Up The Arduino Rfid Scanner



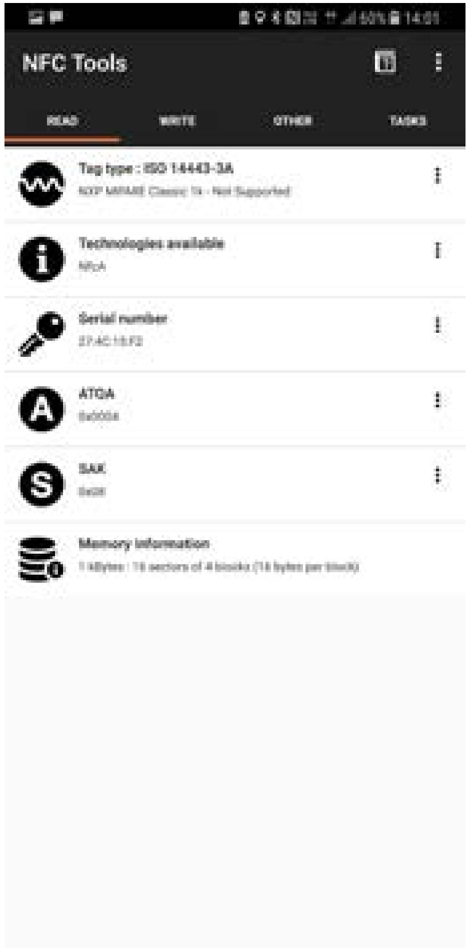


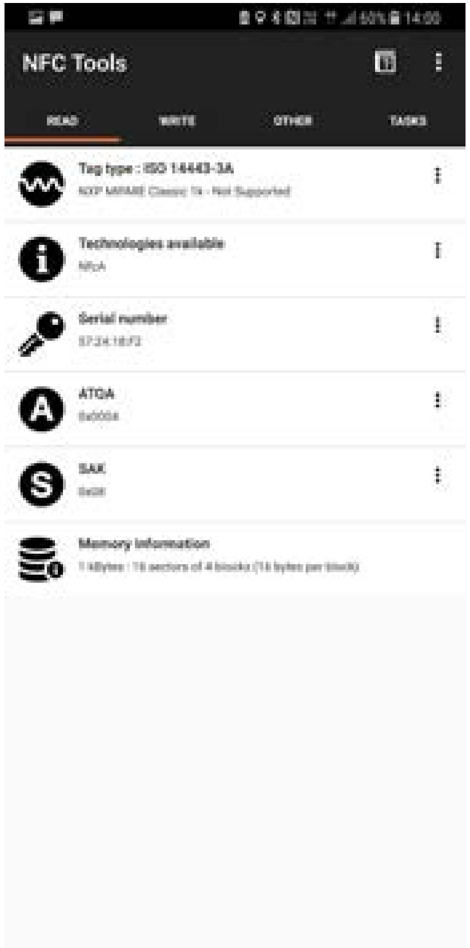
Neo-pixel Code

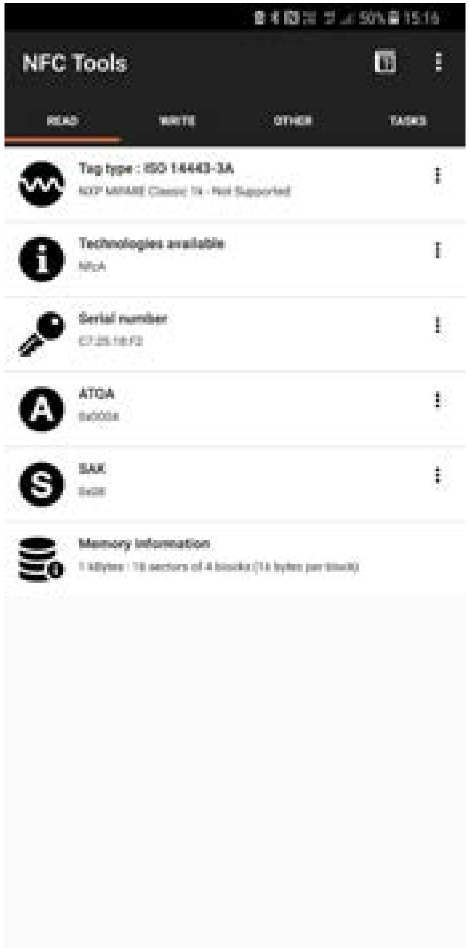
```
  for (int i = 0; i < mfrc522.uid.size; i++)
  {
    cardValue[i] = mfrc522.uid.uidByte[i];
    value = value + String(cardValue[i], HEX);
  }
  Serial.println(value);

  if (value == "b524fcf")
  {
    // change colour

    currentColor = strip.Color(0, 255, 0); // Green

  }
  else if (value == "274c15f2")
  {
    // change colour
    currentColor = strip.Color(0, 0, 255); // Blue
  }
  else if (value == "572418f2")
  {
    // change colour
    currentColor = strip.Color(255, 0, 0); // Red
  }

  clearInt(mfrc522);
  mfrc522.PICC_HaltA();
  bNewInt = false;

}

// The receiving block needs regular retriggering (tell the tag it should transmit??)
// (mfrc522.PCD_WriteRegister(mfrc522.FIFODataReg,mfrc522.PICC_CMD_REQA);)
activateRec(mfrc522);
delay(25);

colorWipe(currentColor, currentOffindex);
currentOffindex = (currentOffindex + 1) % strip.numPixels();
```

When it came to coding the Neopixel ring, I firstly made all the led's light up to one colour and then I singled out a pixel and set it to loop so that it was continuous until the next object would be placed down which would change the colour.

Each Rfid tag was linked to a colour for example 'b524fcf' is linked to the colour green (0, 255, 0).





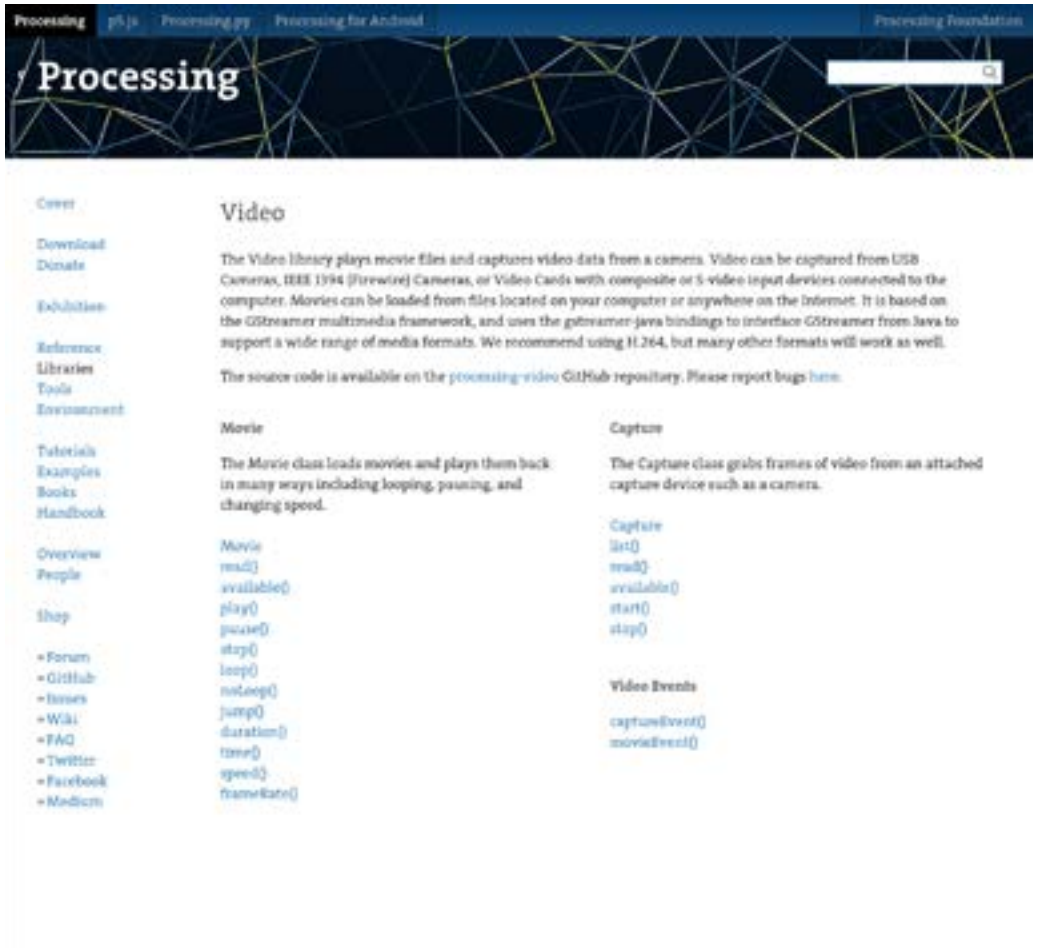


Sourcing Serial Number

To find out what each serial number was on the rfid tag I downloaded NFC tools which allowed me to scan the tags and it gave me a range of information that helped me when it came to defining each tag within processing.

The functions of the software allowed me to Read, Write, View other options and assign tasks. Which was helpful as viewing these other options allowed me to learn more about how Rfid works.

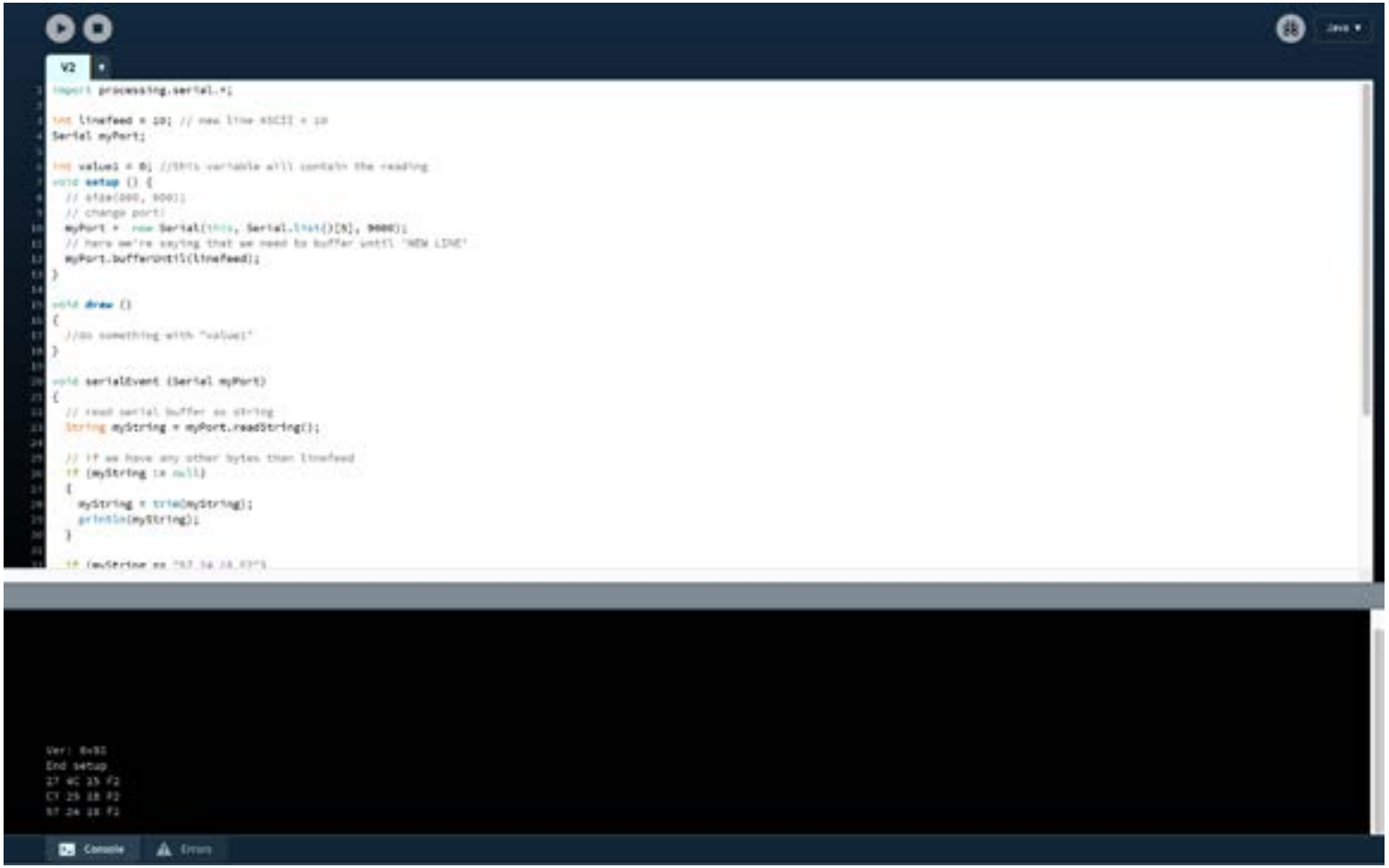
Processing



Previously I used processing for an interactive book so I have looked at my previous code to see if I could use parts of it to help me with this project.

I then began to look on the processing website, on how to re install the video library. Allowing me to access the example code to see what I changed that allowed me to connect it to arduino.

I was allowed to explore the movie class which allows me to load videos into the software as well as having control over the loop, pausing, and speed.



When writing the code within processing I had to firstly download the video library which allowed me to play videos within Processing and then I had to import the processing serial. I compared my previous code to the one which I was writing and kept the key parts such as the **setup** and the **draw.** Once the code was written I ran it and it showed that the videos were playing but the display screen was still greyed out.

The problem kept on going and after looking at a variety of different example I decided to go back to Maker Space to see if they could see what the issue was.

Position of video in Processing

After importing the videos in processing and looking at the preview I came across an issue where the video was positioned in the top left hand corner. I tried increasing the video size but this made the videos too slow and the audio would cut off, I also tested on other computers but the issue was still the same. After looking over my code I noticed that X & Y were both at 0, 0, I changed this to 150, 120 and my videos were then centred with a black border.


```
void draw() {

  if(currentMovie == 1)
  {
    image(weddingMovie, 150, 120);
   // print("1");
  }
  else if (currentMovie == 2)
  {
    image(womenspartyMovie, 150, 120);
   // print("2");
  }
  else if (currentMovie == 3)
  {
    image(cricketMovie, 150, 120);
   // print("3");
  }
```

The Code

```
import processing.serial.*;
import processing.video.*;

// MOVIES
Movie weddingMovie;
Movie womenspartyMovie;
Movie cricketMovie;
int currentMovie = 0;
int x = 0;
int linefeed = 10; // new line ASCII = 10
Serial myPort;

int value1 = 0; //this variable will contain the
reading
void setup () {
  printArray(Serial.list());
  fullScreen();
  background(0);
  noStroke();
  fill(102);

  // change port!
  myPort =  new Serial(this, Serial.list()[3], 9600);
  // here we're saying that we need to buffer until
'NEW LINE'
  myPort.bufferUntil(linefeed);

//LOAD MOVIES
weddingMovie = new Movie(this, "Wedding.
mp4");
womenspartyMovie = new Movie(this, "Women-
sparty.mp4");
cricketMovie = new Movie(this, "Cricket.mp4");
}

void movieEvent(Movie m) {
  m.read();
}

void serialEvent (Serial myPort)
{
  // read serial buffer as string
  String myString = myString = myPort.read-
String();

  // if we have any other bytes than linefeed
  if (myString != null)
  {
    myString = trim(myString);
    println(myString);
  }

  if (myString.equals("572418f2"))
  {
    print("play video 1");
    currentMovie = 1;
    weddingMovie.loop();
    womenspartyMovie.stop();
    cricketMovie.stop();
  }
  if (myString.equals("c72518f2"))
  {
    print("play video 2");
    currentMovie = 2;
    weddingMovie.stop();
    womenspartyMovie.loop();
    cricketMovie.stop();
  }
  if (myString.equals("b524fcf"))
  {
    print("play video 3");
    currentMovie = 3;
    weddingMovie.stop();
    womenspartyMovie.stop();
    cricketMovie.loop();
  }

}


void draw() {

  if(currentMovie == 1)
  {
    image(weddingMovie, 250, 150);
   // print("1");
  }
  else if (currentMovie == 2)
  {
    image(womenspartyMovie, 250, 150);
   // print("2");
  }
  else if (currentMovie == 3)
  {
    image(cricketMovie, 250, 150);
   // print("3");
  }

}
```

Testing Code on other Devices

Mac Book Pro Retina

Mac OS High Sierra
Processor 2.6 GHz Intel Core i5
Memory 8GB 1600 MHZ DDR3
Display 13.3 inch

IMac

OS X el Capitan
Processor 3.2 GHz Intel Core i5
Memory 8GB 1600 MHZ DDR3
Display 27 inch

Mac Book Air

OS X yosemite
Processor 1.4 GHz Intel Core i5
Memory 8GB 1600 MHZ DDR3
Display 13.3 inch

Transferring Arduino and Processing to the PI 3

When I tried to transfer everything over to the Raspberry Pi, the code showed that it was working fine but there were no videos playing. After overlooking the issue it showed up that the Pi was over heating and that the processor wasn't powerful enough to play the video. This is when I had to decide that keeping everything on the Mac Book would be easier as it managed to play the videos to the fit scale.

Stand Alone Product

After having to alter the way that I wanted my product to look because of the Pi 3 not being strong enough to play the videos through processing, I thought it would be important to show how I wanted Orb to look.

I now have to power Orb through my Mac book pro as it has enough processing power to play the videos when triggered through from Arduino.

User Testing

To get more feedback on Orb I decided to test it with a variety of users, so that I could make improvments as well as take a note of the the positives.

User feedback

General Public

After finishing my prototype I decided to test it with people to gain a variety of responses that would benefit my project in terms of improvements.

In terms of improvements (which are taken inconsideration for the final show) people said that the Neo pixel ring could be bigger as it would fill Orb with more colour, as well as a base for the objects to be scanned/placed on. Both of these points I agree with and aim to have done for the final show as it will make my project look stronger.

People also stated that Orb “felt like a magical experience”, “it looks like it stores secrets” and that the “physical build was intriguing”. This was very positive and made me feel that people enjoyed Orb as it was a “nice step back in time”.

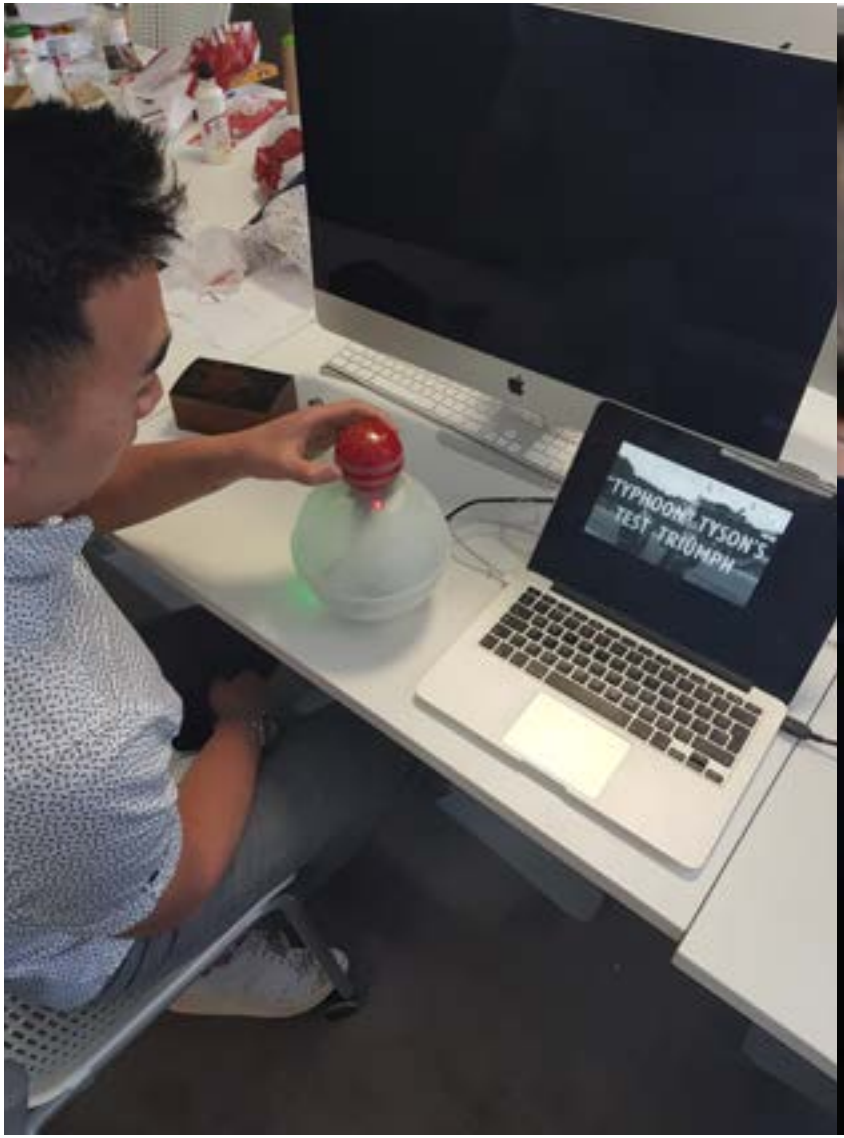
The majority of people that tested Orb said that it was ”very engaging” and “interactive”.

Dementia Audience

After testing my product on my Grandmother and a group of her friends who have similar symptoms of memory loss and communication issues, I thought it was important to take a note of their experience using Orb.

As many of the people using Orb didn’t understand how it was programmed to work there response when using it was priceless. I had a variety of comments stating that it was “inspiring, easy to use, captured your imagination,brought back memories, interactive and creative, user friendly and fit for purpose”

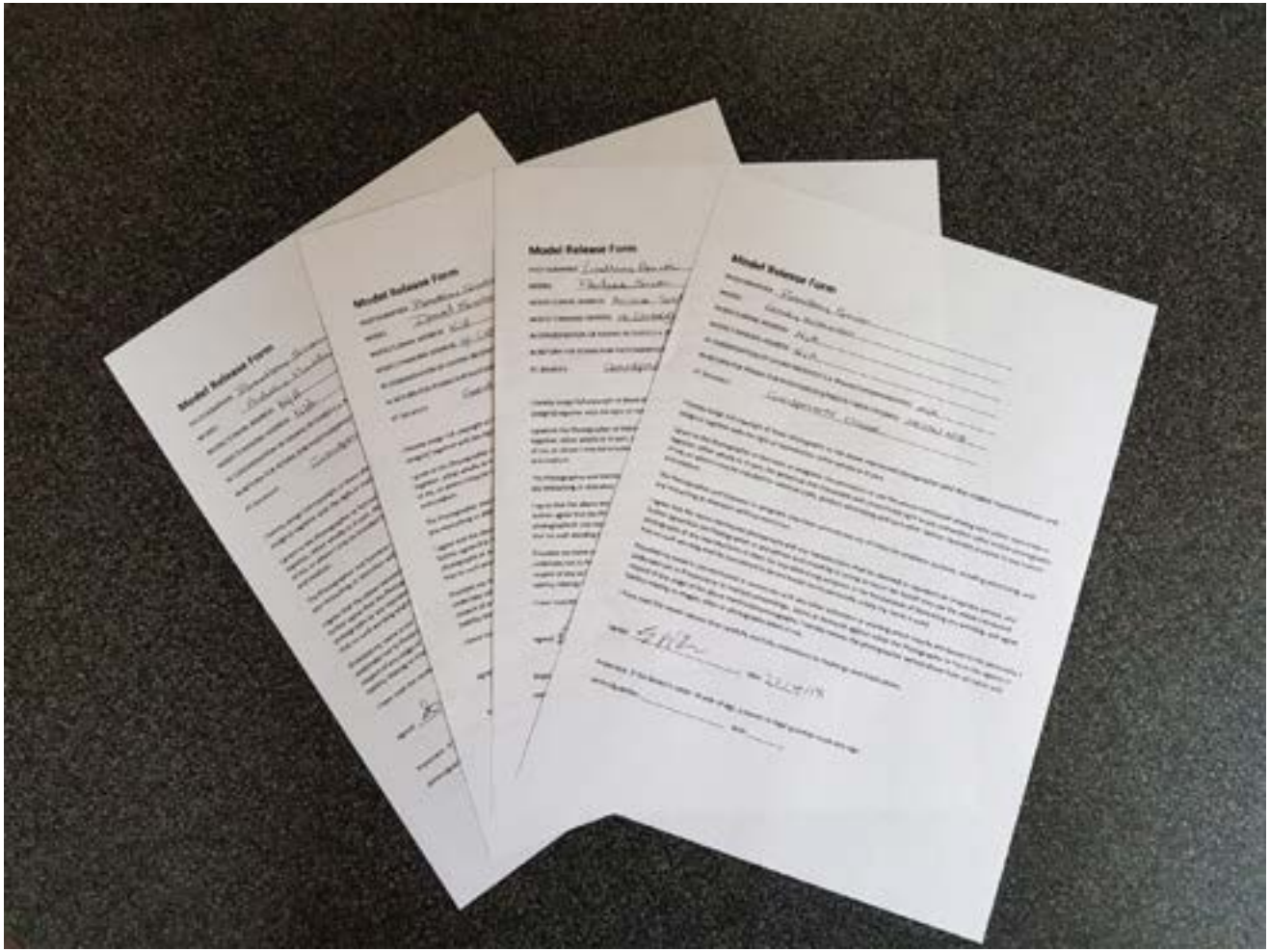
When watching people use Orb it was nice to hear these responses as it made me feel that it helped them remember and made an impact on their conversation.


"TYPHOON" TYSON'S
TEST TRIUMPH

Video & Voice Over

This part of the document will show parts of my own footage and found that I will use to create my video and well as my written script for the voice over.

Model Release Forms



Before I could film for my project I needed to get the models that I were using to sign and complete the form so that they understood what it is they were taking part in.

I decided that I wanted to create a close family setting where the person who suffers from dementia had their children and grandchildren around them whilst they share the memories that have been made. I think its important to show an audience something that they can relate to and feel comfortable watching it.

Writing the Script

I wrote out my original script before making it digital and sending it across to the voice over actor. I wanted to set the correct tone with the script by overall giving update information about dementia and how serious it is getting for the people that it affects. As well I wanted to give enough information about what Orb is and how users can interact with their families and feel comfortable with the conversation. This is why I asked for the tone to feel welcoming and supportive.

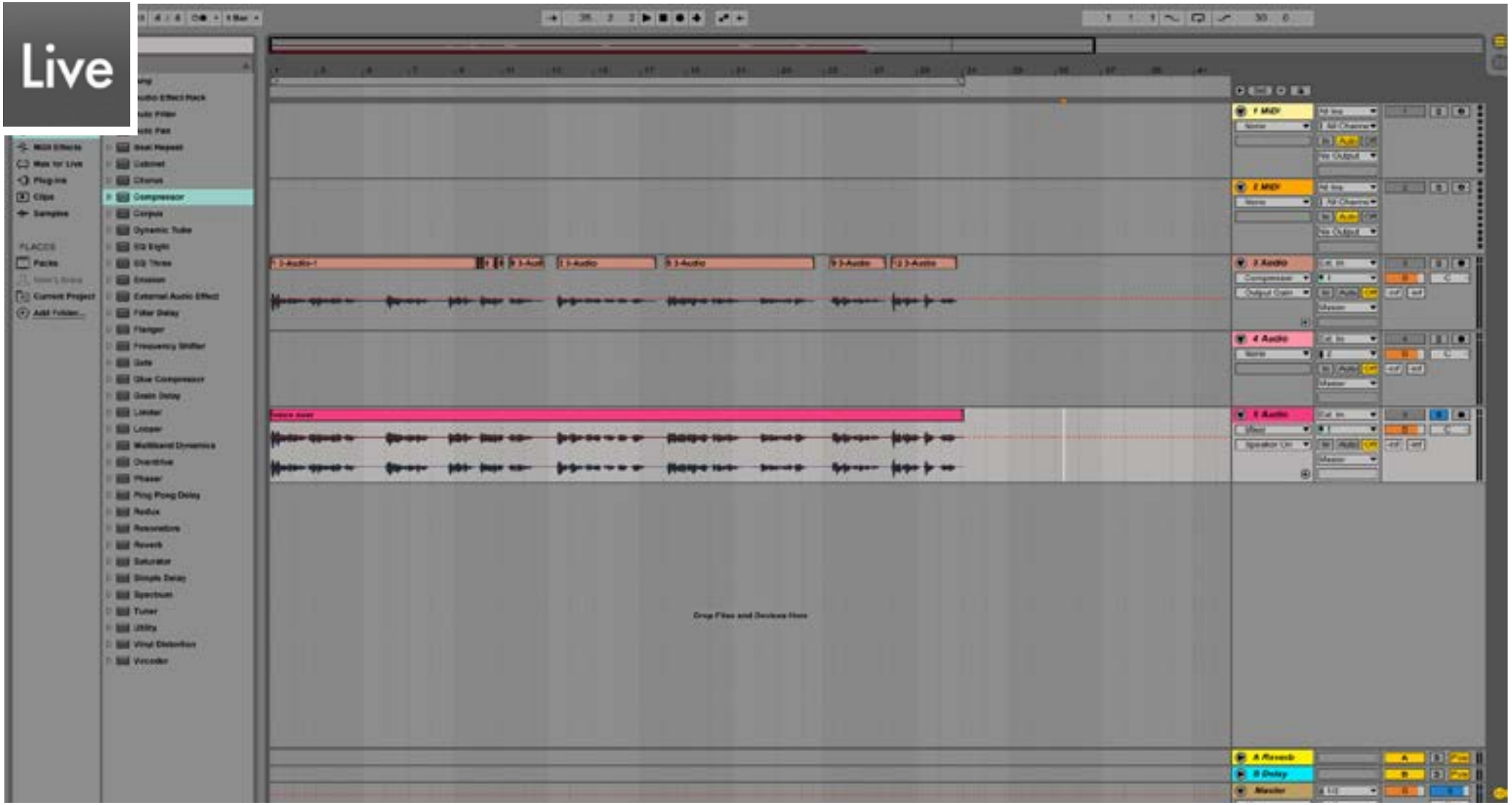
Monday, 30 April 2018

Communicare

Orb Script

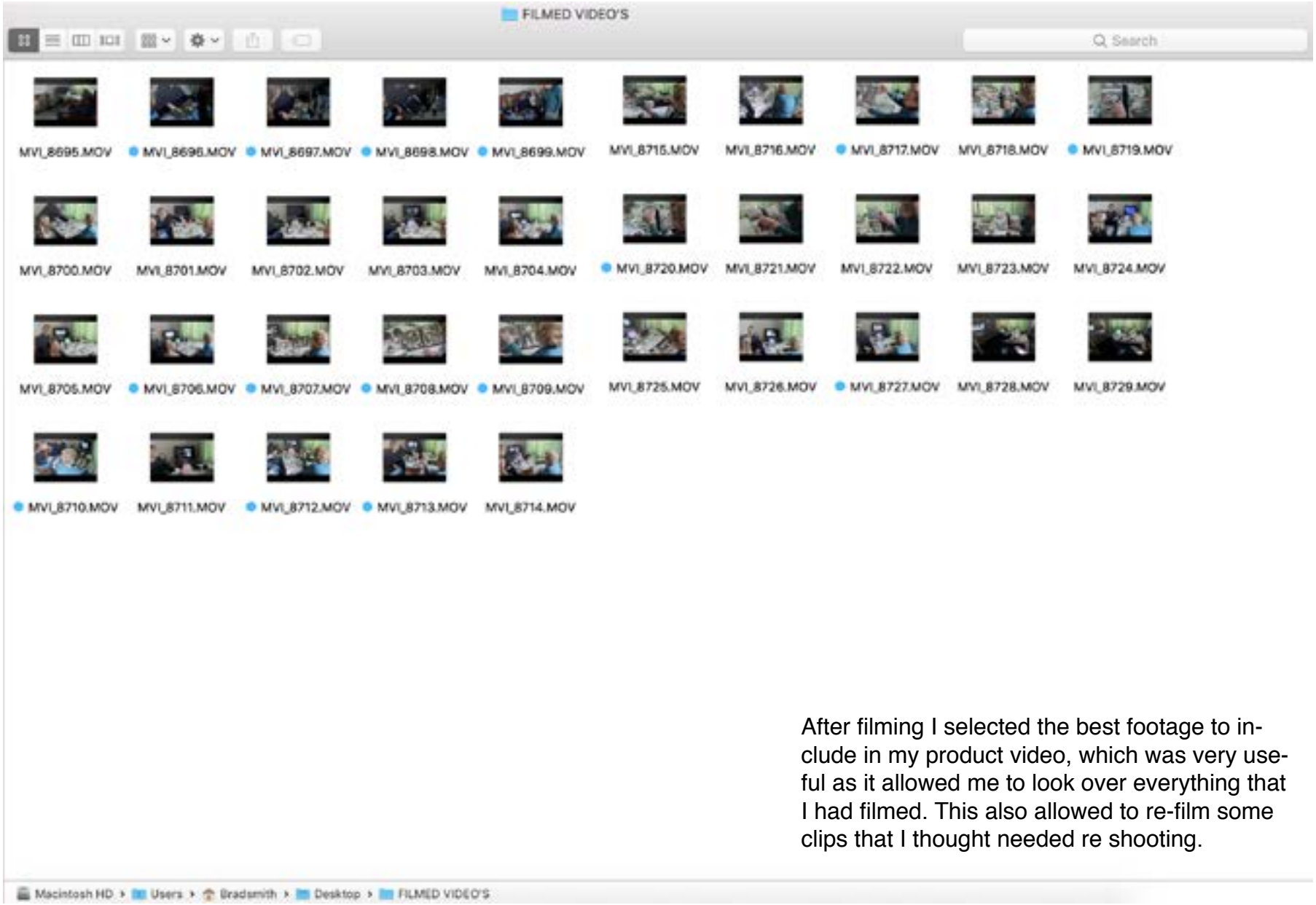
- 850,000 people are currently living with dementia in the UK, with numbers set to rise up to 2 million by 2050.
- Orb focuses on helping people with; memory loss, feeling socially withdrawn and communication issues. And is aimed for those who have early to mid stage dementia.
- Sharing memories helps those around you remember the past.
- This is Audrey who suffers from dementia and is using Orb with her family for the first time.
- She has a wide selection of memories stored within photo albums and video tapes. Audrey's daughter has told her about Orb and how she can upload and share memories with family and friends.
- Audrey likes to tell stories about the people she has in her photo books, but sometimes struggles putting a face to a name.
- Users can assign a specific colour to the memory that they upload, which helps stimulate and calm their memories as well as improve communication.
- Don’t let the memories fade away….

The focus of this script is to make the viewers feel empowered and that they are not left to their one devices. I would like the tone to be welcoming and supportive as well as a direct approach when getting informed about what orb is.

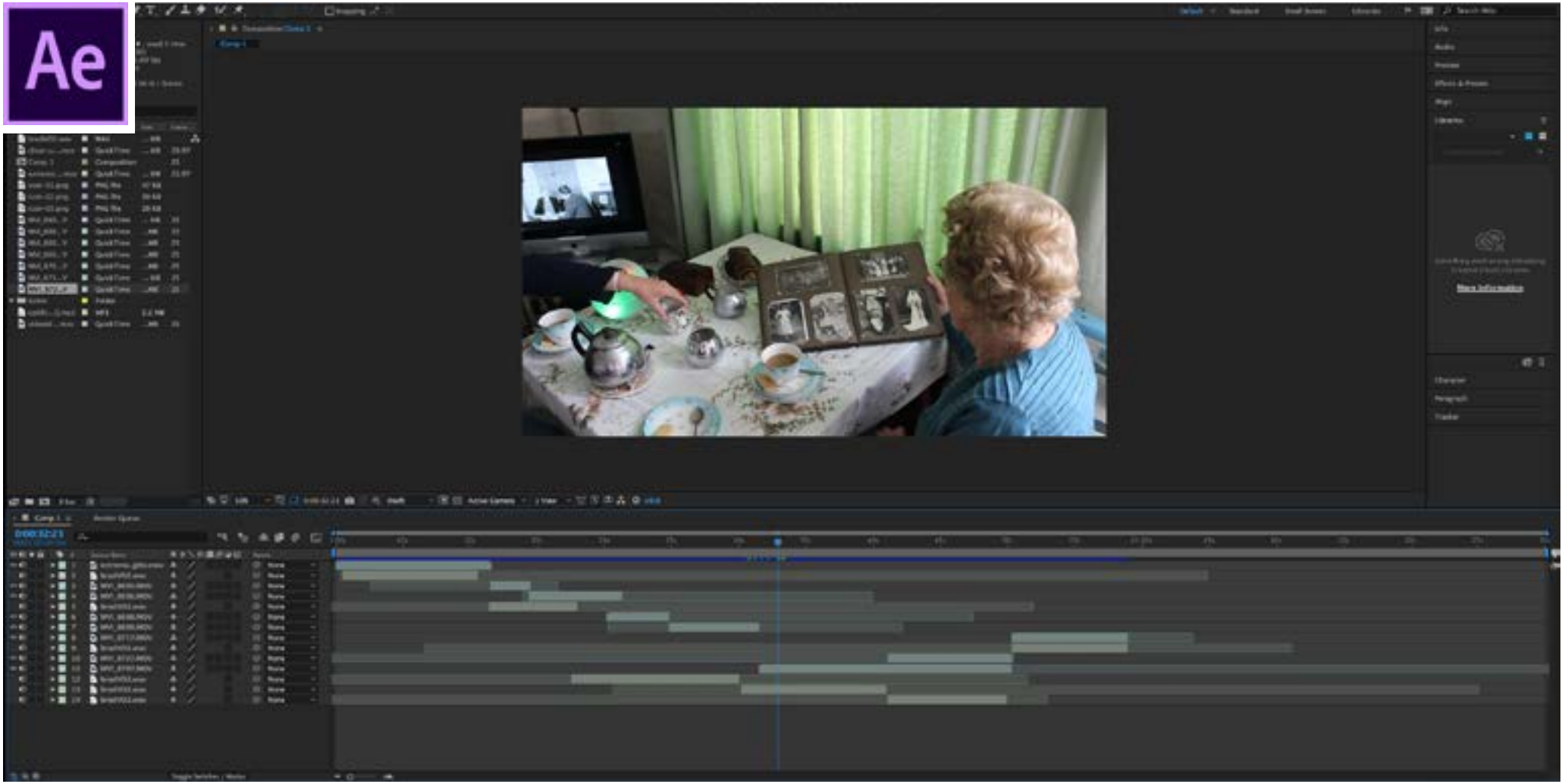


When it came to recording the voice over I used Trevor as my actor to produce the script. After he had recorded the script I used a compressor and a gate on the track to make the levels consistent. This made my voice over stronger and meant that I didn't have to alter it when I placed it After effects.

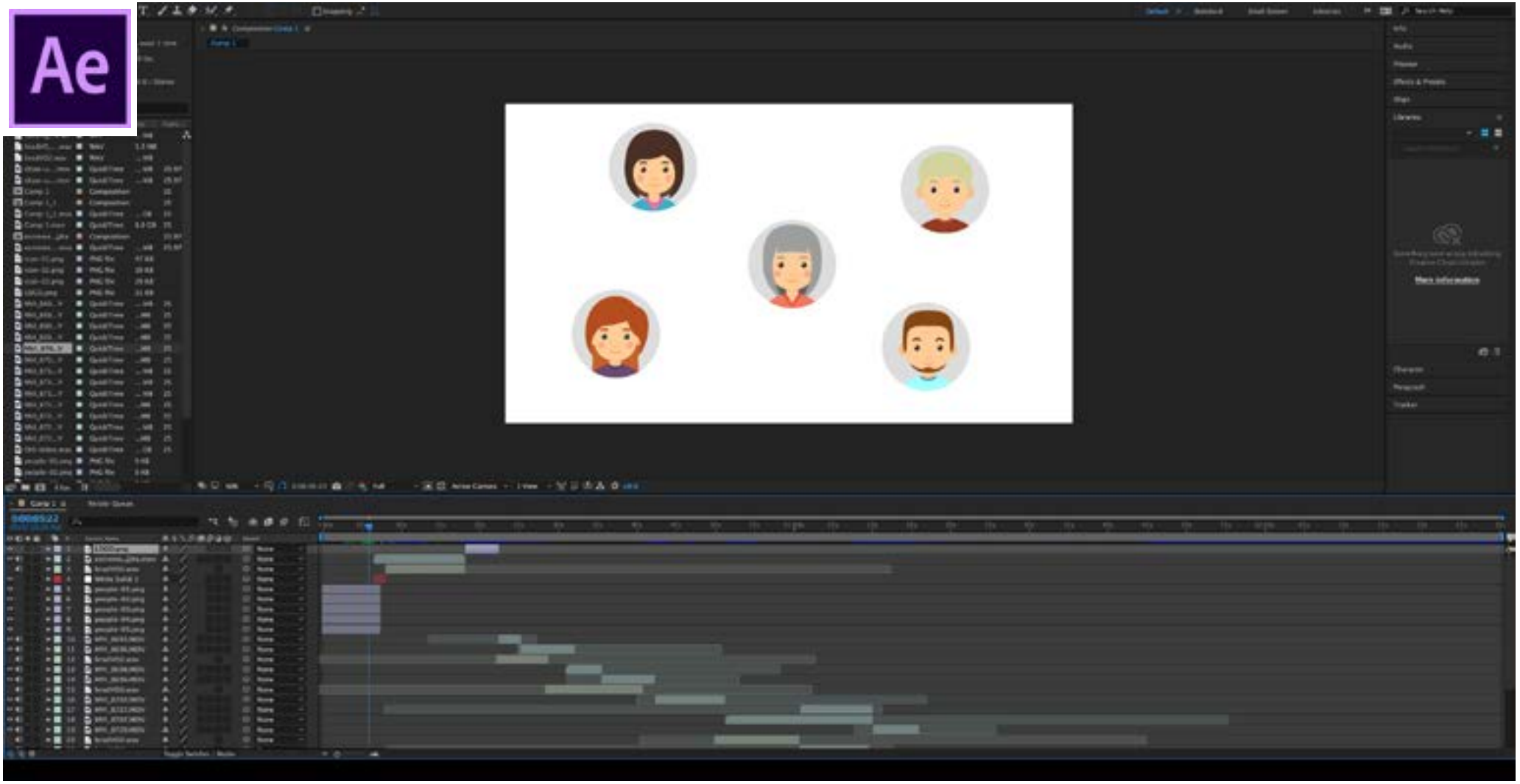
Chosen Footage



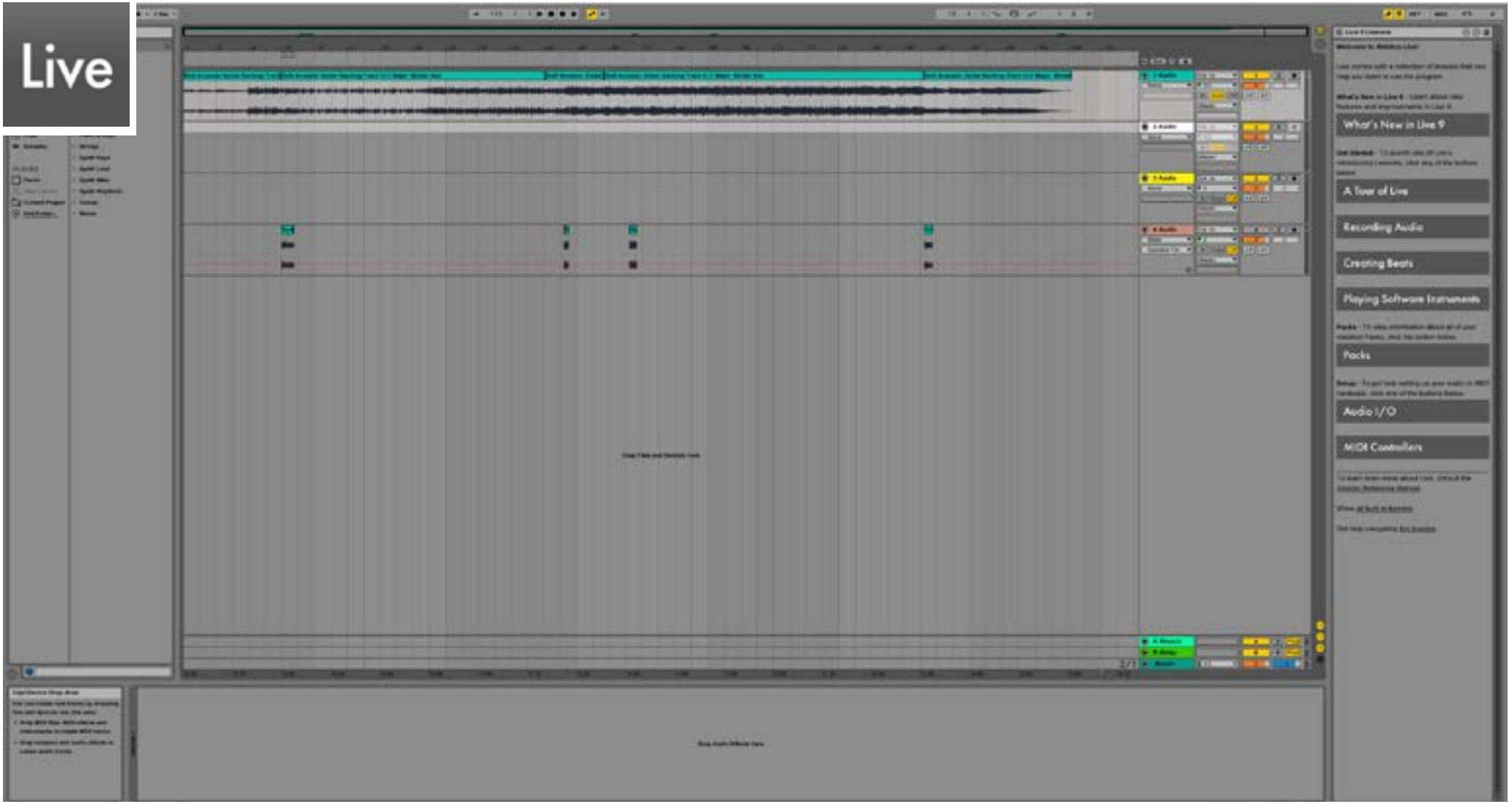
After filming I selected the best footage to include in my product video, which was very useful as it allowed me to look over everything that I had filmed. This also allowed to re-film some clips that I thought needed re shooting.



When it came to putting my video together I decided to use After affects, this allowed me to make the transactions that I wanted as well as any animations that I thought were appropriate for the video. When it came to editing and clipping the videos together I mainly altered the Length, Audio and position of the videos.



Animated introduction - After the feedback from the final presentation I decided to do a more detailed introduction to the video, giving a brief overview of Orb. I thought it would also look nice for there to be a mixture of filmed footage and animated as it gives the video extra character. For this specific screen shot I wanted to show that it is the people around the person who has dementia that also suffer, so by getting the other characters to appear around the older character gives the effect I wanted.



I found a backing track that had part audio, so I imported it into Arduino and removed the audio and replaced it with another verse from the song. This allowed me to create the backing track that I thought was appropriate for Orb and it also fitted well with the videos and animations.

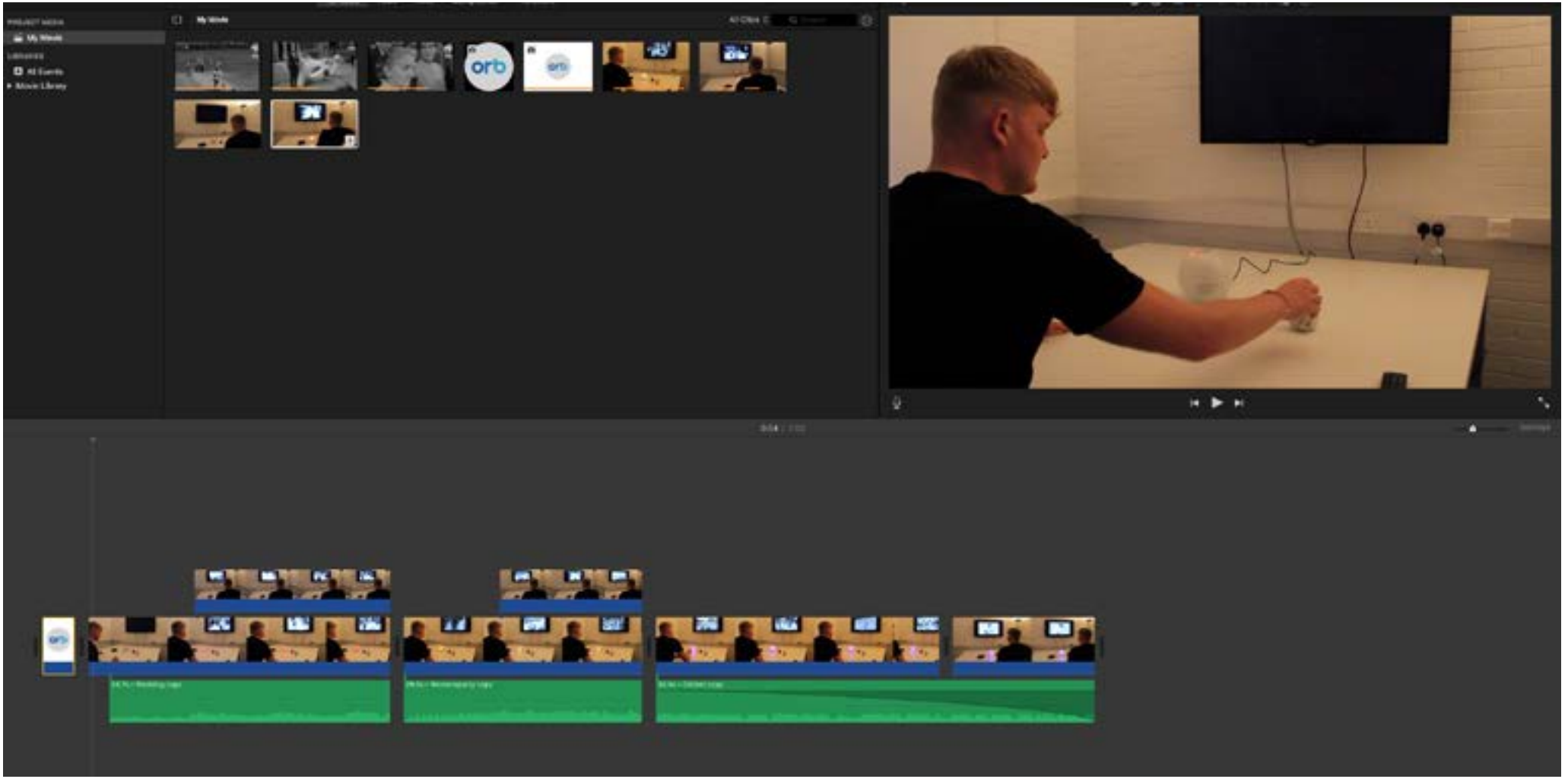
Video Feedback

After doing a couple of drafts for my video I thought that I would share it with people to gain some feedback and this would also mean I could make improvements for the hand in. The feedback was very positive people stated that it looked “professional” and that it “gave enough information” when asked if they understood what Orb was.

The only improvements that I received were with the 2nd intro clip, this was to make it shorter to split the clip up and add another as it was too long. As well as lowering the backing track so that you can hear the voice over more clearly.

In total I got around 25 responses all stating the similar feedback which was very positive and made me feel that I were in a good position with my video.

Walk through Video



I decided to create a walk through video to show users how simple it is to use Orb, through the use of picking up and placing/scanning. I filmed it within the setting that Orb will be shown in the final show so everything what fit to scale for the video and show.

Final Presentation Feedback

After presenting it was nice to get feedback off John as it was a fresh pair of eyes on my project and he gave me some very beneficial feedback.

The main feedback that I got

“Define that Communicare is the business and that Orb is the product”

“Design how Orb would be house as a stand alone product”

“Add more to the video around Orbs features”

A main point of feedback that I recieved was how would a person gain access to the Rfid tags and would they be pre assigned to an object or would they be blank for them to assign. This got me thinking about possible packages that people could apply to or specific time periods, this would be something to think about for the final show.

After getting this feedback I made the changes that were necessary, which has made my project stronger as well as made me think about necessary decisions to change for the final show. For the final show I have decided to design a room for Orb to be observed in which will be an interactive space set like an old persons home living room. This will give the feeling of how the person with dementia will be using Orb and place the users in a dementia friendly setting.

In terms of Video adjustments I added a section in the introduction that gave more information on what Orb focuses on as well as adjustments to the body. This showed more interaction with users and Orb as people didn’t think that there was enough in the video that captures what Orb does. This also linked in with making sure I focused more on Orb as a product as I made the video more inviting and welcoming for users to feel a part of when viewing the video.

Applying for the service

The way I picture Orb to be acquired is by the advertisements that I have shown, this would allow people to apply for the service either for a set of objects that have already been linked to a Rfid tag. The other way I picture people to use the service is by receiving a variety of blank tags that they can place them on objects of their choice. This would then allow the user to upload specific memories of their choosing and allocate the colour that they think fits the memory.

Future Development

In terms of future development I would like to explore the possibilities of Augmented Reality and how you can explore peoples memories through an object been placed on a surface. The reason for this is due to the simplicity of placing an object down and getting to share the memories linked to it. As I already understood how linking images/videos/voice to objects helps create a new space of communication and engagement, this would be an expansion on my idea.

I thought about the possibilities of this idea after speaking to Marianne Whitfield who has connections with a company who specialise in AR. She reassured me that this is a strong idea and that the possibilities for extending the technology are available. This is something that I would be interested in exploring as AR is something that I have never explored and I do find the technology very interesting.

Evaluation

Overall I am happy with the outcome of Orb and how I have got it to work as I pictured it to. Although I didn't get it to work as a stand alone product with the Raspberry Pi 3 I still think that the project has been a success. The biggest achievement for me was learning a new language and been able to understand how to link 2 software's together so that I could produce what I pictured.

After continuing from last year I had a good understanding of how dementia affects people and what the best non drug treatments are to help people cope with the disease. Also understanding why certain colours are used so that it can help people focus on their memories and this also helps with them communicating better. As well as colour, music is a key part when focusing on memories as it helps people engage in a more in depth conversation. This was interesting to research and look and test with my users as you could see the difference once colour and music were linked the memory got a lot stronger.

Also recording for Orb was also interesting as I got to include my family and my Grandmother who has early stage dementia, so it was good to test Orb on here and get a detailed response from somebody who has dementia. It was very interesting to see her response when she looked over all her memories as this also meant that I could see the positive impact it had on her. This is what made my project strong as I had the correct target audience to test on which mean if I needed to I could make it much more simpler.

Another thing that I enjoyed doing throughout this project were the small presentations within class as it allowed me to gain valuable feedback from not only Joyce but my class mates. I found this very helpful as everyone contributed and it made my project a lot stronger from doing this.

If I were to do this project again I would of tried to learn Python so that the videos could run off the Raspberry Pi 3, meaning that Orb would have been a stand alone project and wouldn't need to be connected to a laptop to display the Video's/Imagery. If I had more time I would like to learn Python as it would widen my understanding of different languages and would mean I could develop my skills further.
The only negative aspect of this project is not having enough time with Tommy to fully understand the Arduino and processing code but when Tommy wasn't available I did make the most of Maker Spaces availability.