ALI

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DE0972 Peronsal Project 2 and Final Project
BA (hons) Interactive Media Design

Contents

PROJECT

Brief

For my final major project, I was giving an open self-determined brief that encourages me to use the design skills I have obtained over my time at university. By using my design skills, creative techniques and independent learning I hope to achieve a design concept that is a solution to a problem.

To meet this brief I will be researching and investigating the current market to discover an opportunity where I can come up with a unique design concept. I will need to use my skills as a designer to create a functional and well-designed solution that will be designed in a professional manner. I will independently demonstrate the ability and skills to critically justify and evaluate my work.

Work requirements

1. Prototype - created using the most appropriate tools to resolve your design problem or concept.

2. Design Document.

Aim

I would like to create an innovative project that can help people organise their life. As well as organization I would like this project to be fun and engaging for whoever the user might be.

Concept

For my final project, I have come up with Ali the child-friendly personal assistant. Ali is used to encourage children to learn, improve communication skills, be a source of entertainment whilst also being a personal assistant for the parent. The selling point of this device is that the alien has come to earth to learn more about the earth and with help from a child they can achieve this.

RESEARCH

Existing technology research

Before I decide what I would like to do for my final project I decided it would be best to look at the existing technology available on the market. Doing this will help me to refine the aspects of my idea and allow me to gather a better understanding of the technology already available and their uses. We currently live in a society where the majority of people depend on technology to complete and organize their daily tasks. I will be looking at cutting-edge technology to understand how they have improved the lives of the users. Using this research, I hope to be able to generate unique and innovative concepts that I could use for my Final Project.

Cloud computing – Cloud computing uses remote servers to store manage and process data. This allows users to access/ store their information by using the internet rather than using their hard drive devices. Using cloud computing users can access information that they have worked on in previous devices and pick up where they have left off. This is a suitable way for smart devices to connect to one another than can benefit the organization of the user.

Artificial intelligence - Artifical intelligence (AI) is the intelligence that is demonstrated by machines. Artifical intelligence basically gives a device the ability to learn and problem-solve independently. Recently, there has been a lot of research and experimenting that has gone into the study of AI.

Virtual Reality – Virtual reality immerses the user into a computer-generated world that simulates a realistic experience. VR is an interesting and interactive way for a user to interact with a digital world. The combination of images, videos, sounds and triggering other sensory organs this technology is developing into a media outlet that can be fully engaging for the user.

Electronic virtual assistants

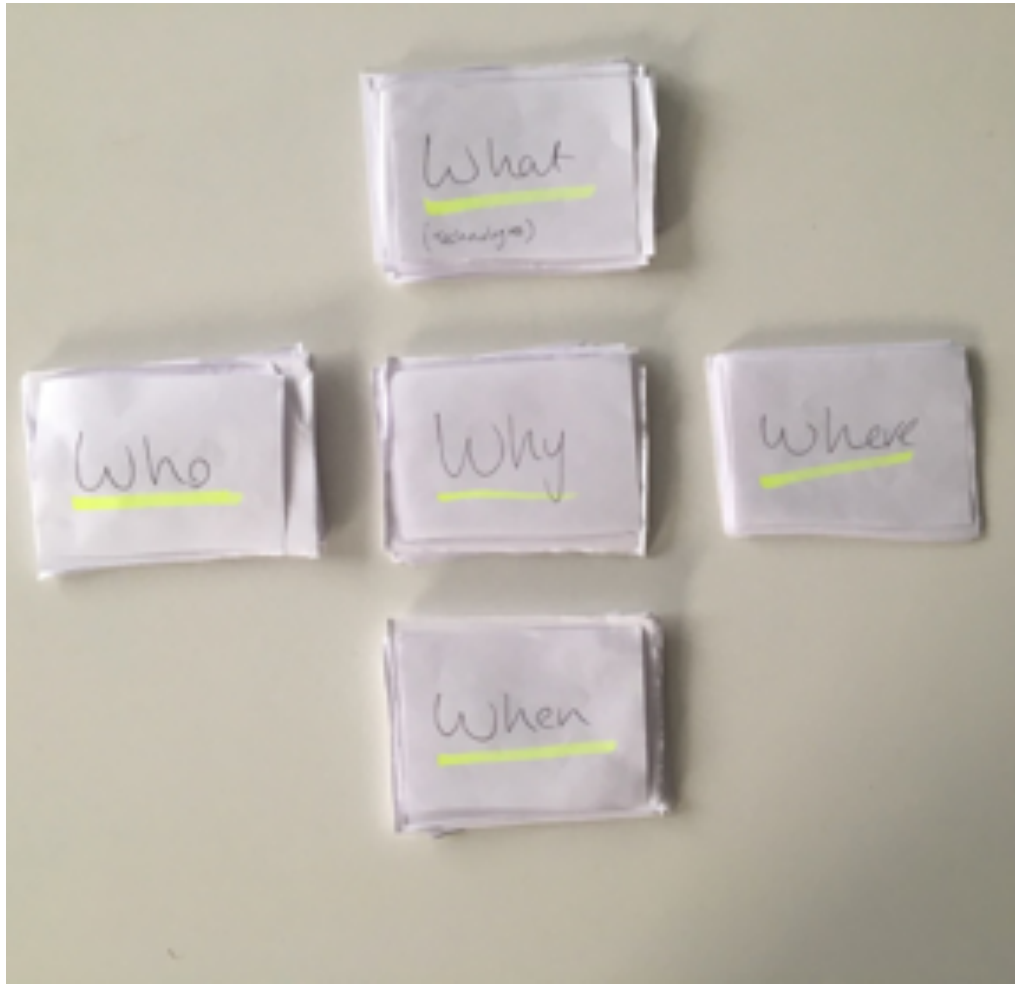
- With the development of artificial intelligence, virtual assistants have had an amazing development progressing. Virtual assistants assist the user in a number of useful ways by using speech recognition technology that enables users to organize their lives, find information quickly, have conversations and command the device. Increasing over the last number of years electronic virtual assistants have become part of many people's homes and are used commonly with smart devices.

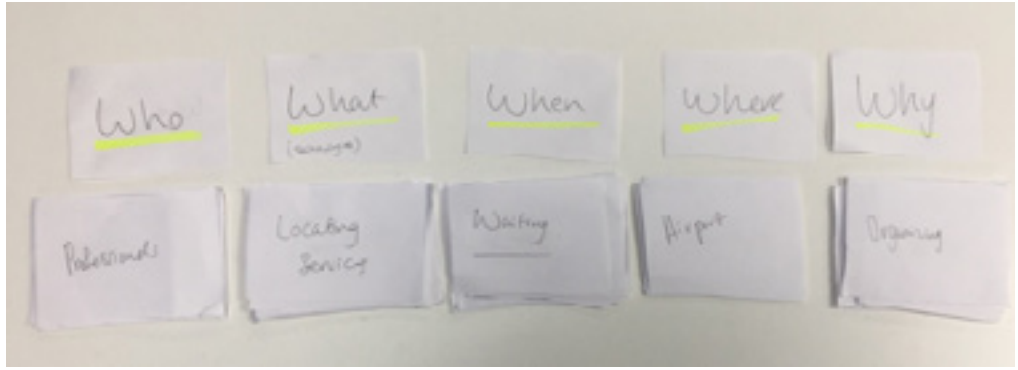
Idea Generation Excercise

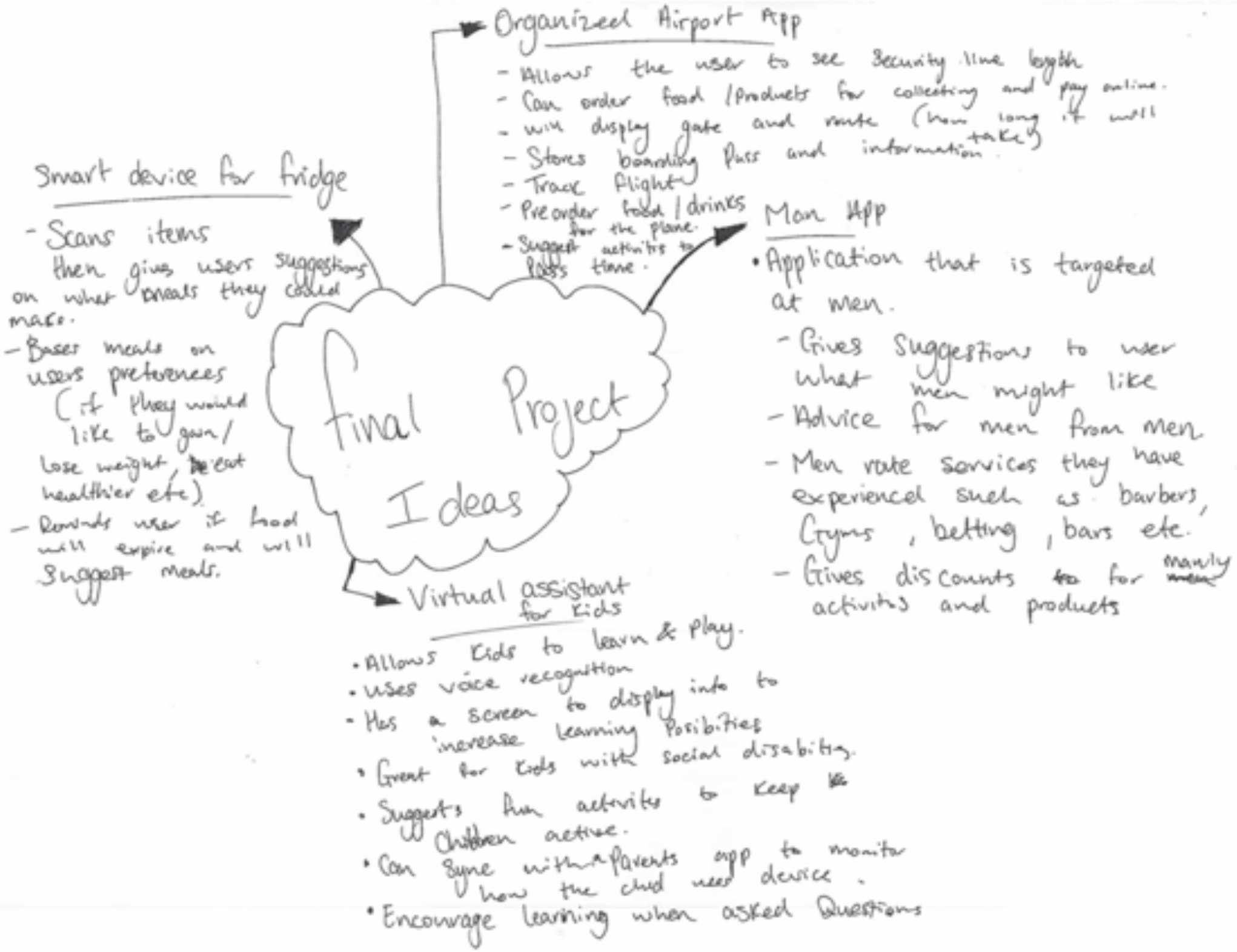
For this project, I wanted to create a project, that had a specific target audience, that faced a current issue that could be resolved by using technology. For this, I made categories named eho, what, when where and why. I used these categories to think of solutions to problems. This was a handy idea generation exercise as it allowed me to think of situations that I wouldn't normally come up with.

Not all categories where useful all the time so I would only select a few that I could come up with a solution. This was good as I was able to generate some interesting ideas based on the information I had.

An example of how this exercise was useful is I came up with a solution to people being bored waiting for flights at an airport. The application allows the users to organize their time spent in the airport. Using location services to help the user locate certain stores/ activities within the airport. It would also give estimated times to get through security until boarding the plane.






Final Project Ideas
Organized Airport App
- Allows the user to see Security line length
- Can order food / Products for collecting and pay online.
- will display gate and route (how long it will take)
- Stores boarding Pass and information
- Track flight
- Preorder food / drinks for the plane.
- Suggest activities to pass time.
Smart device for fridge
- Scans items then gives users suggestions on what meals they could make.
- Bases meals on users preferences (if they would like to gain / lose weight, eat healthier etc)
- Reminds user if food will expire and will suggest meals.
Man App
• Application that is targeted at men.
- Gives suggestions to user what men might like
- Advice for men from men
- Men rate services they have experienced such as barbers, Gyms, betting, bars etc.
- Gives discounts to for manly activities and products
Virtual assistant for Kids
• Allows Kids to learn & play.
• uses voice recognition
• Has a screen to display info to increase learning Posibities
• Great for kids with social disabilities.
• Suggests fun activities to keep children active.
• Can Syne with a Parents app to monitor how the child uses device.
• Encourage learning when asked Questions

Intial ideas

A smart device for fridge

This idea is a smart device that is attached the fridge that the user will scan or input products. The device will compile different meals that could be made with the contents of the fridge. It bases meals on the user's preferences and also when the food will expire. The device will consider dietary requirements if the user is looking to gain/lose weight or eat healthier. This aims to reduce food waste and make mealtimes easier for the user. The smart device will have a companion application that allows the user to track the contents of the fridge and build up a shopping list.

Market research

LG ThinQ Smart refrigerator – After I thought about the ideas for the smart device that would keep track of what was in your fridge I decided to do some market research to see what kind of competitors this device could have. With a quick search, I was able to bring up tons of products for internet Fridges (smart fridges).

The LQ ThinQ smart fridge allows for the user to scan the barcodes of products when putting the item in the fridge. This is used to track expiration dates and recommends recipes based on the food available. It comes with an internal camera that connects to a smartphone so the user can check the fridge content. The LG ThinQ fridge also comes with a built-in dietician that will suggest healthy meals.

After thinking that I came up with a quite feasible and unique idea I was able to find a lot of products that were quite similar to my idea. I might have been a number of years too late to come up with this device.

MAN app

This idea is an application that is solely targeted at men. The aim of this application is so men can easily find advice or deals for men. The application would be personalised to each user by selecting hobbies and interests. From this, it will suggest nearby activities or events that the user could be interested in. There will also be a section that gives a range of advice to men on numerous topics including health and fitness. There would be sections that all men to rate products and services they have used such as gyms, barbers, bars etc. There will also be a discount section that would suggest some discounts the user might be interested in. The aims of this application are to make the lives of men easier, ensure they are keeping healthy and giving advice that they might be too embarrassed to talk about.

Market research

Whilst doing market research for this concept, I was unable to find a similar solution to the design problem that there is no application/ service that primarily focuses on improving the organisation of men’s lives whilst providing them with deals and advice. This suggests that there could be a possible unique design solution that I could come up with that essentially improves the lives of the male population.

Virtual Assistant for kids

This idea is a virtual assistant that is aimed at children. The device will encourage children to learn but also has the ability to play. By using voice recognition, artificial intelligence, cloud computing and a display this device will not online increase learning possibilities but will also let children get familiar with cutting-edge technology. The device won't simply answer questions from the user but will encourage them to learn the answer and could check up another time to see if the user remembers the information. This device would help children with social or learning disabilities as it is a calm, nonintrusive way of communicating. When it is in use it will encourage the children to have fun by doing activities so the children aren't sitting around all the time. It will have a companion app for the parents so that they can monitor the child's usage of the device. The parent app can monitor the activities and the questions being asked by the device. They can also select some activities that the device will encourage the children to do. The device can be used to help children calm down before bed by selecting wind down time. The parents can also input text that the device would say to encourage the children to behave in certain ways. The child application allows the children to unlock achievements, see how their friendship has grown with the device.

Market Research – Amazon Show

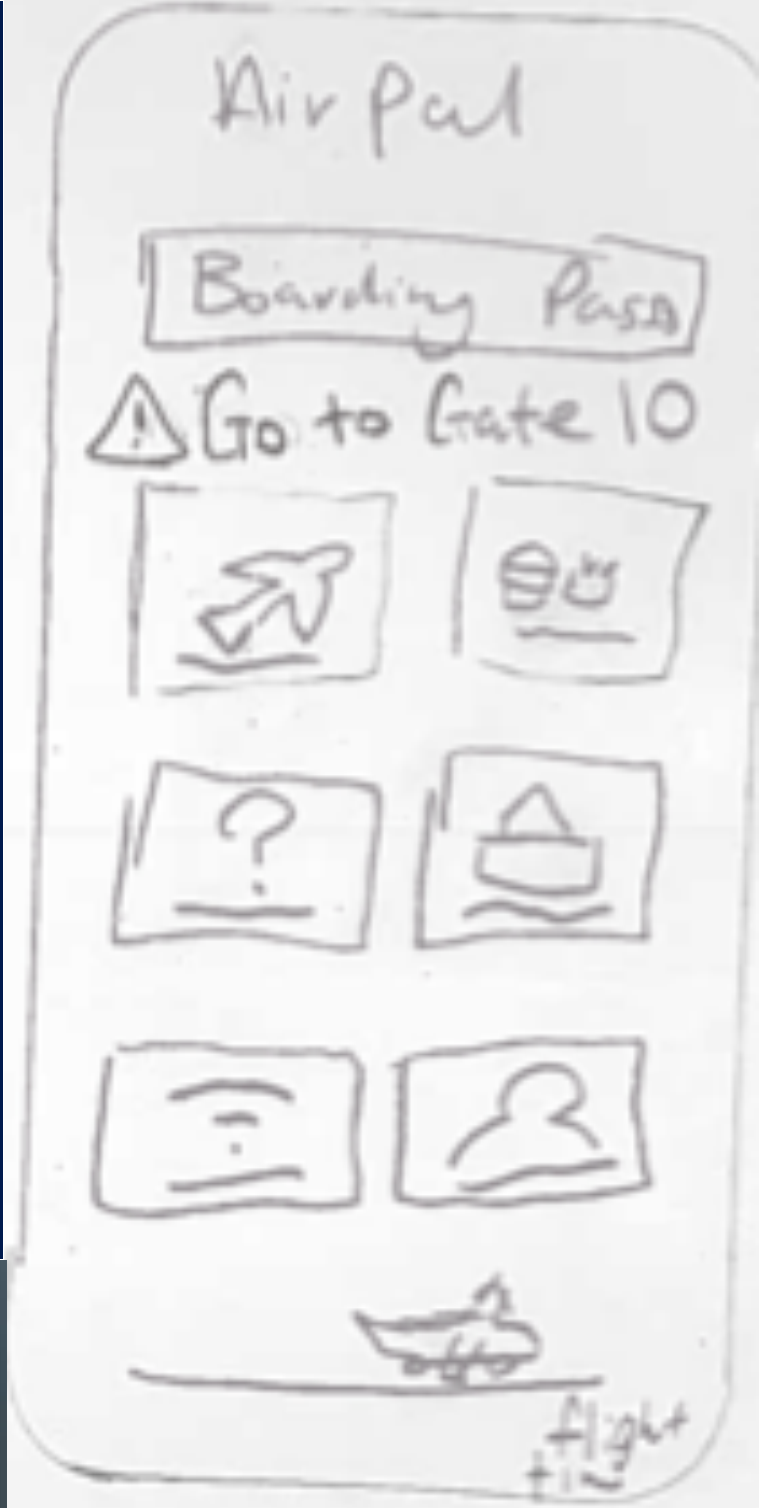
The amazon show would be similar to this concept as it is a virtual assistant that also uses a display. The features of the Amazon Show is that the user can make commands, play music, get questions answered, organise the users daily routine and plans. The Amazone show also has a front-facing camera that allows the user to make video calls with their contacts. However, with my concept, I would not like the child to be able to make video calls just yet as this could be a possible improvement to the design solution.

Organized Airport app

This applications aim is to make the journey to and in airports as stressless as possible. Before the user reaches the airport they are able to see how long the line for security is and how long that the will be in this queue. They can order food on the app for the restaurants in the airport so it is ready to eat when they get through security. There would also be a section that has deals within duty-free to ensure the customers get the best deal they can get. The application will store boarding passes and information for easy access for the user. Whilst the user waits to receive information about the gate the application will suggest some stores or activities they can do at the airport. When the airport is ready for the users to board the plane, the application will display the gate number and give directions to the user how to find the gate and how long it will take them. The user can prepay for food on the airplane before the board the plane so they can ensure to have the meal ready when took off. The application will also be able to track flights to see when planes are arriving and departing.

Market research- FLIO

FLIO is an airport organisation application that provides the user with arrival and departure details. The offer deals in airport restaurants and for items at duty-free. It also gives the user tips and advice on what they can do whilst in certain airports. The user can purchase VIP lounge, book transport and receive discounts by using this application. FLIO is quite similar to the concept I came up with and the application is already signed up to by hundreds of airports.



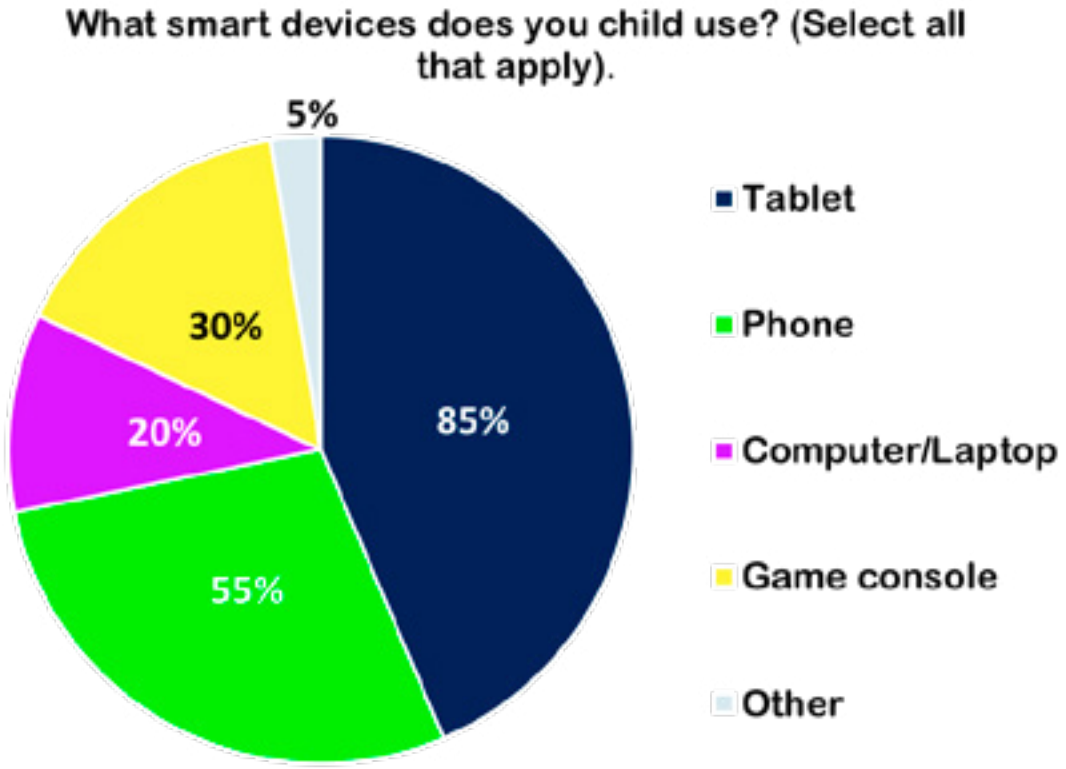
Chosen Concept

After producing concepts for my final project and doing market and user research for each idea. I showed the ideas to my tutor who agreed with me that my strongest idea would be the electronic virtual assistant for children. I have chosen this concept as I believe that although it will be challenging it would be a great hybrid project to design. After speaking to with the tutor I had search for some additional help regarding what technology I would need to create this prototype. However, before I start thinking about the build of the prototype and what technology is needed I have decided to do more research into technology and how children use it on a daily basis.

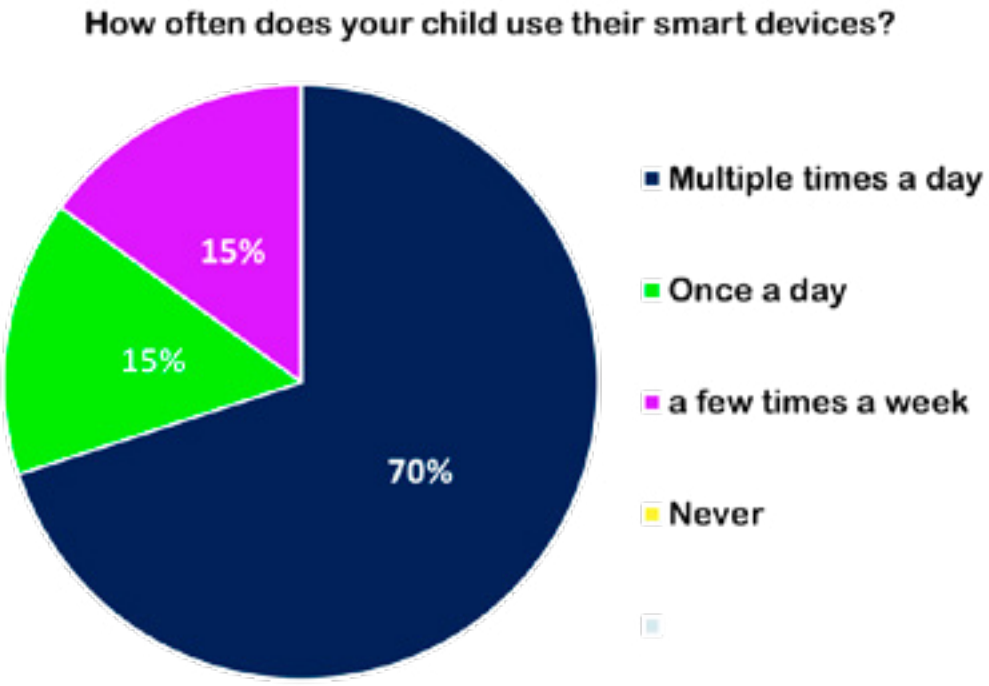
Children and technology

To get a better understanding of how children use technology and the concerns parents might have about their child's smart device usage I decided to create a survey to gain an insight into parents opinions. I posted the survey on Facebook asking parents with children under the age of 13 to complete the survey. From the survey, I hope to understand how familiar children are with smart devices, how much they use them and if they have ever used electronic digital assistants. This survey is also a good way for me to find out concerns the parent might have and hopefully, I can come up with a design solution to the concerns.

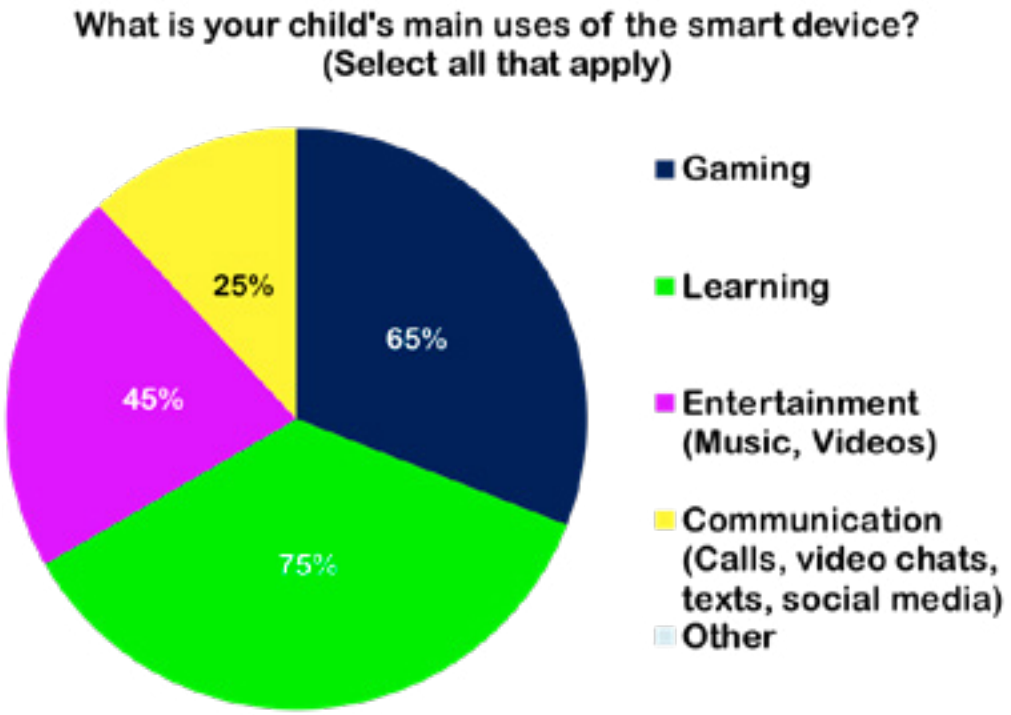
From this survey, I gathered 20 response to 10 questions that allowed me to gather the following information. The parents who had participated in this survey had children between the age of 1 - 13.



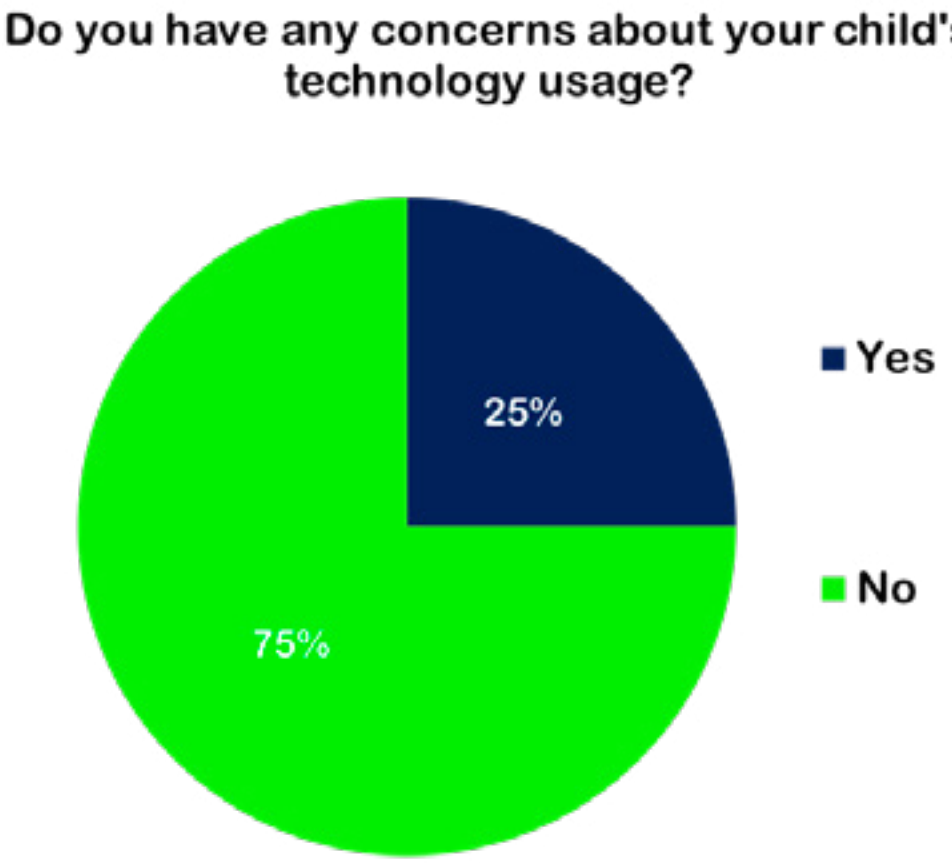
I asked this question to find out what smart devices children were already familiar with, the most common is tablets. I left other to see if anyone would mention a virtual assistant and only one person responded stating that their child uses Alexa. This shows there is a current opportunity to introduce children to digital assistants.

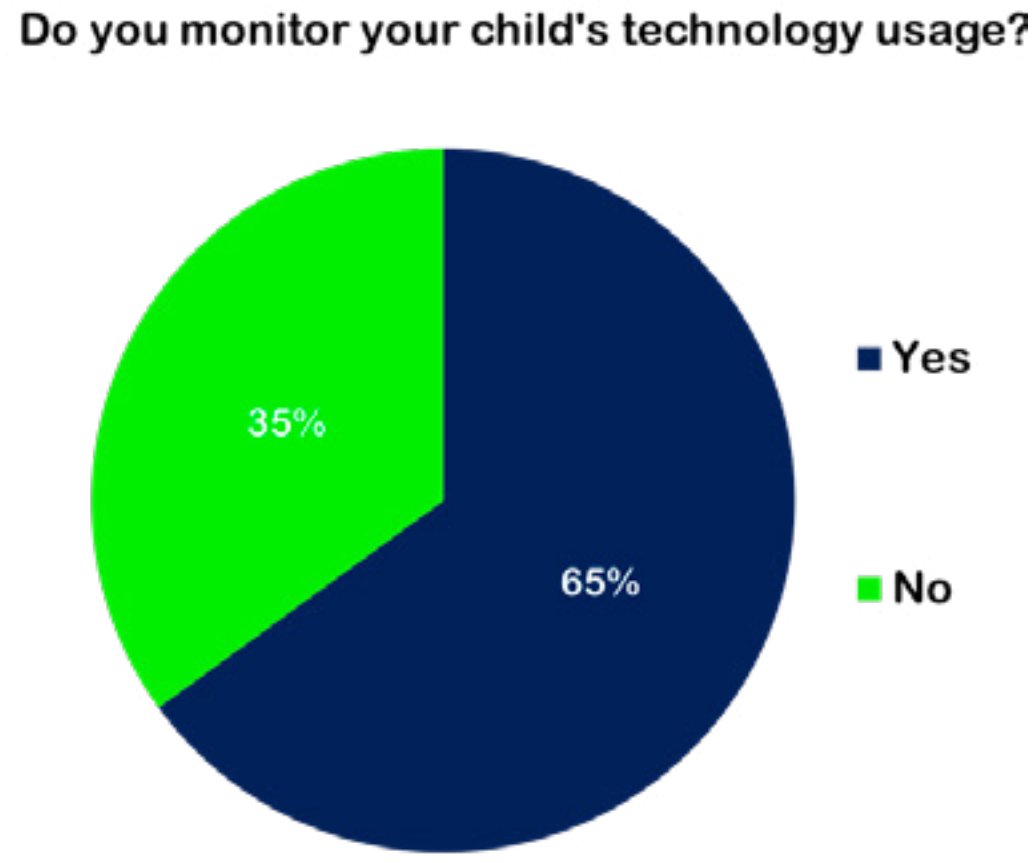


The majority of the children have access to their smart devices for multiple uses a day.



I wanted to see why children use their preferred smart device the information I gathered from this would allow me to focus what the device should do to make it entertaining but educational.

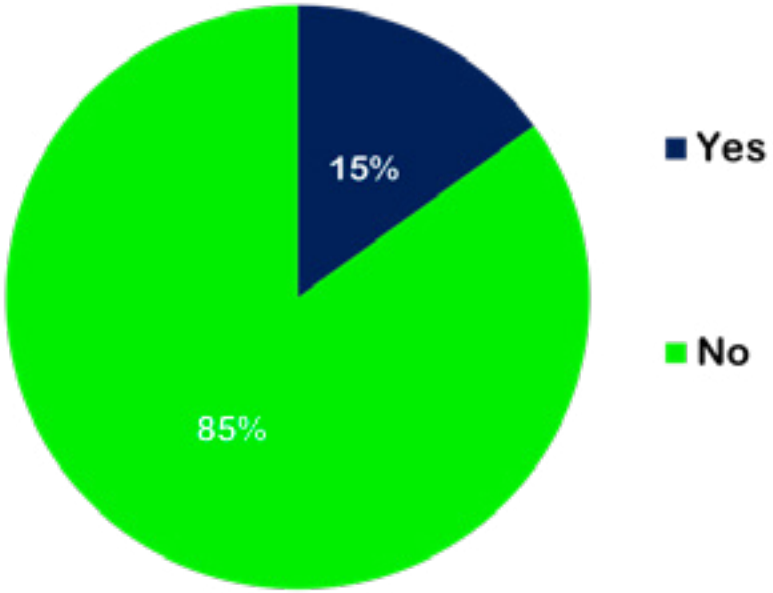




Asking this question allows me to find out what concerns parents have with this child's technology usage. From this question, I was able to find out some concerns parent have with children using smart devices. The issues raised were using the device too much, eyesight issues, age-appropriate content, lack of exercise, doesn't listen to the parent whilst using the device and using the device too much but not for learning. This allows me to tailor my solution to ensure that my device will not raise these concerns.

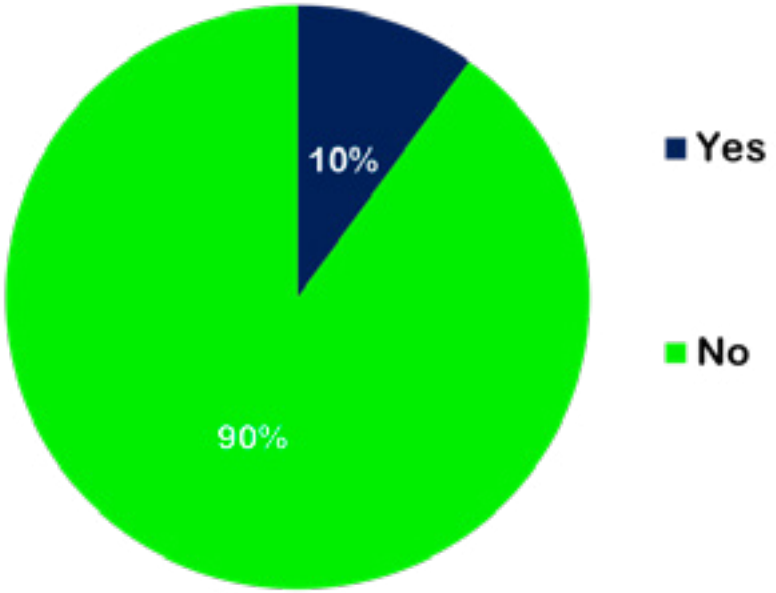
Understanding that the parents want to protect their children from the harmful online information I decided to find out if and how parents were monitoring their child's device usage. This allowed me to find out that the parent's current methods of monitoring the device usage. I found out that some children are only allowed to use the device in the company of the adult. The parents are also checking the videos and apps the children are viewing. Some have opted for using parental controls and setting a time restriction on the device so they can only use it at certain times.

Do you allow your child to make purchases on their smart devices?

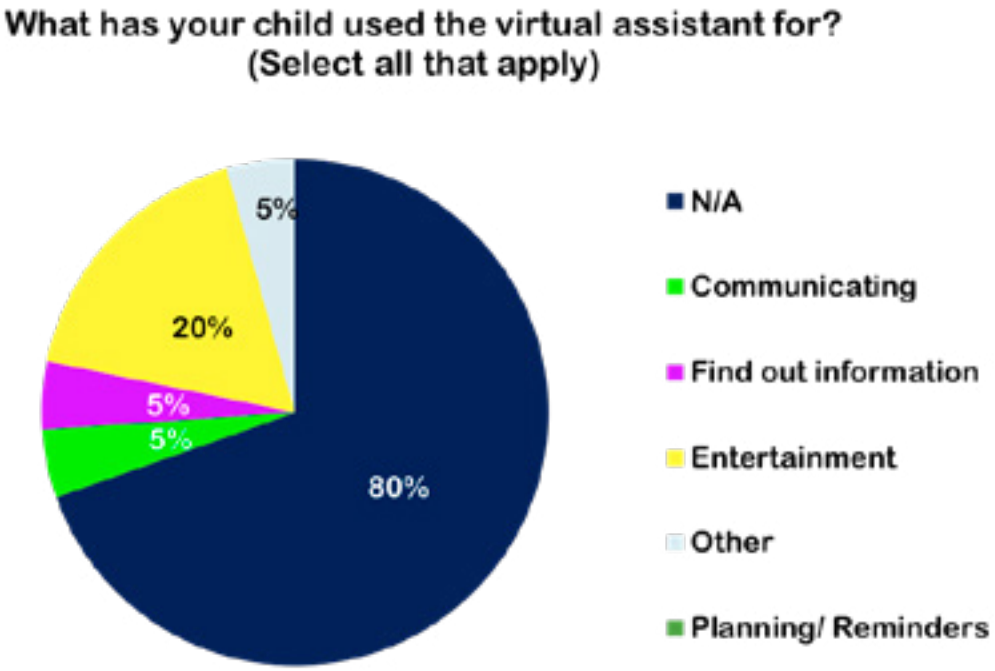


I asked to question to find out if the parents trust their children to make their own purchases on smart devices. I was asking this as I thought if my design solution was successful they possibly could be apps that come out specifically to be used on the device. Some of these could cost money and I wanted to understand if the parents allow children to purchase using their existing smart devices.

Does your child use any virtual assistant? e.g Alexa, Siri, Cortana, Google home etc.



Majority of children don't use a virtual assistant. A small amount use Alexa as their digital assistant. This insight allowed me to figure that children are not using digital assistants that frequently, hopefully using my design skills I can create something useful that can change this statistic.



Asking this question allows me to investigate the reasons the children who have used a virtual assistant use it for. Those who have used a virtual assistant mainly used it for entertainment purpose. I am hoping that I can incorporate education with this so it can be a fun education device.

The final question of my survey was "**Is there anything else you would like to share about your child's technology usage?**" .

I asked this as I knew there would be some comments and opinions that I didn't cover in the survey that some parents might want to state. From this, I found out that the parents think that smart devices are a great way for children to learn, improve communication skill, keep children occupied and also assists with school projects.

Survey Insights

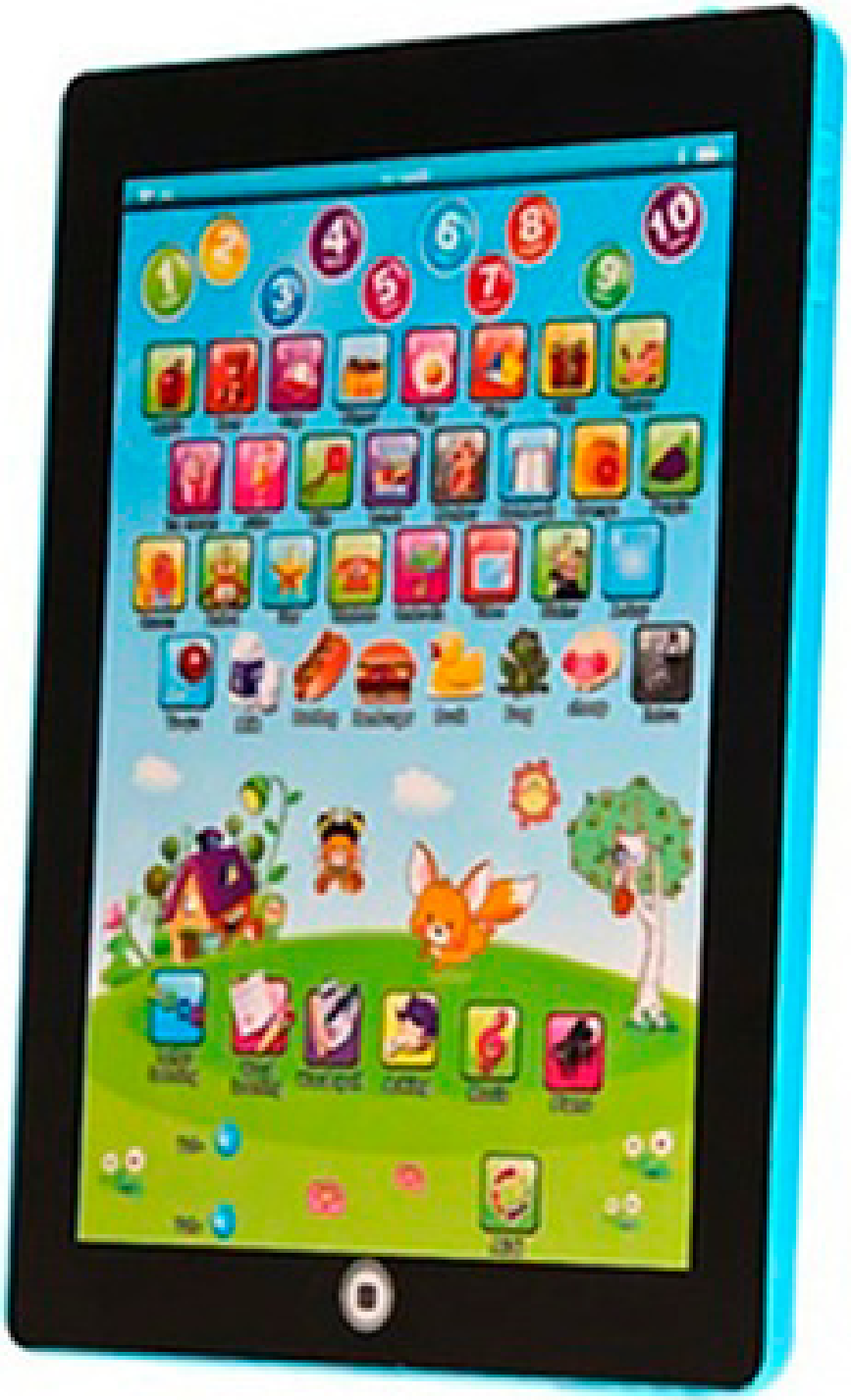
There are numerous insights that I am able to take from this survey. An insight gathered which is important the design of the device is children are not overly familiar with using digital assistants so I will need to make the interaction of the device very simple. From the concerns, I am able to develop solutions that will allow my device to eliminate the concerns that have been raised.

Exsiting Products

Smart Toy

Smart Toy Bear comes with a built in rechargeable battery and connects through wifi to an app for parents to personalise the experience; adding the child's name, birthday etc. The app also allows parents to control the toy to help with everyday routine, making it fun for the children. With the addition of smart card children can choose activities to play with their toy; drawing adventuring etc. The toy learns each child's preference over time. With monthly updates and expansion smart card packs the child won't get bored on the same old activities.

Parent controlled
Encourages indepence by allowing child to select activity
Constantly changing activities



Exsiting Products

Learning Tablets

One of the main existing products that are used for learning is tablets. There is an abundance of different learning tablets on the market that focus on children. Tablets have become one of the most popular learning devices on the market and the majority of households will own at least one.

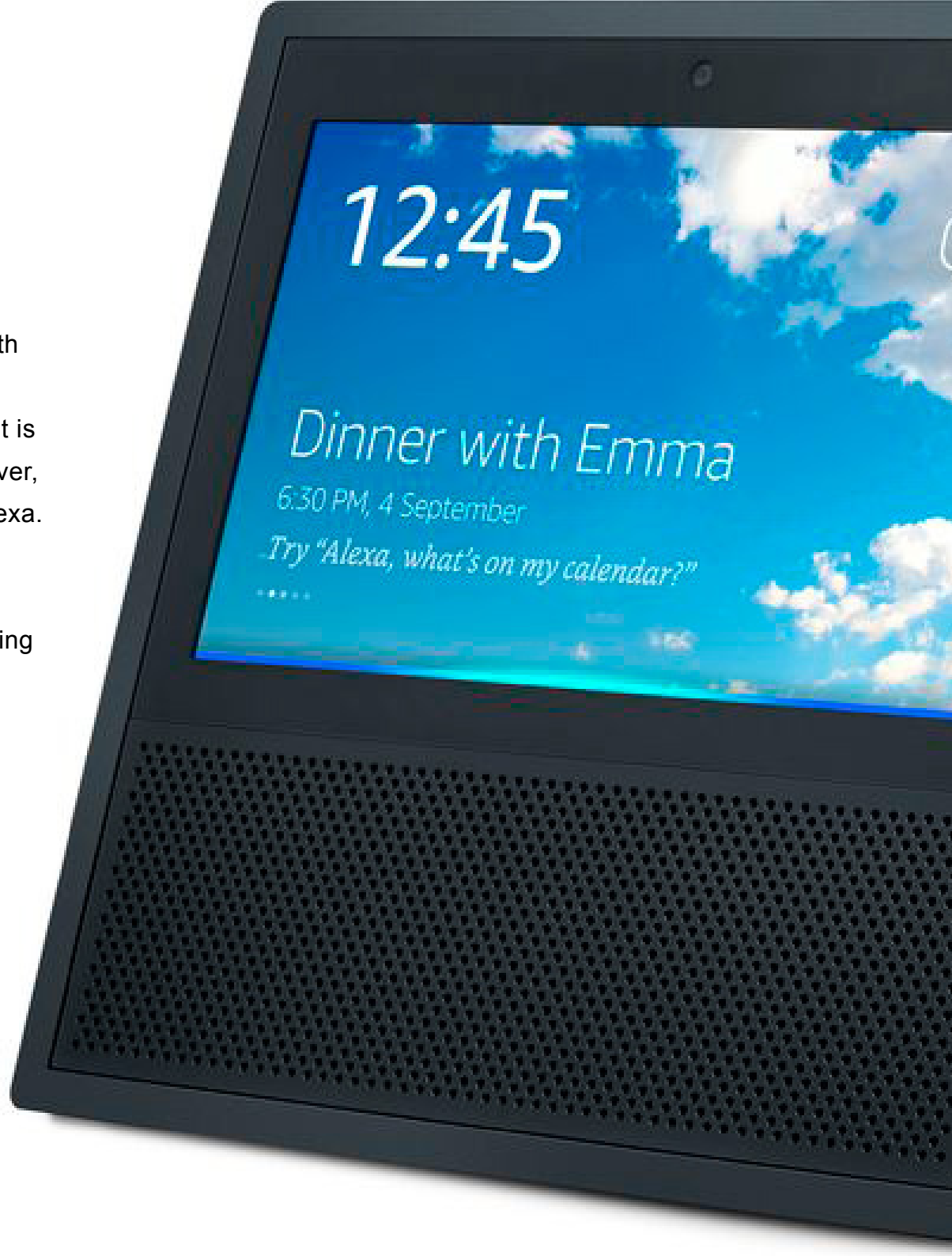
Allows to learn independently
Helps with speech
Fun and intriguing
Easy to use

Exsiting Products

Alexa Show

Alexa show is a digital assistant that utilises a display to help with the user's commands. This virtual assistant would be the most similar existing product I could find, however, unlike my device, it is not targeted at children or marketed as a learning device. However, Amazon has now introduced kid-friendly activities to use with Alexa. The child has the ability to hear stories, play games and watch kid-appropriate videos. They have also partnered with children's entertainment companies such as Disney and Nickelodeon to bring even more entertainment to the children.

Utilises a display
Plays music and videos
Obeys command and answers questions
Personal assistant
Fun activities specifically for children



Exsiting Products

Google Home

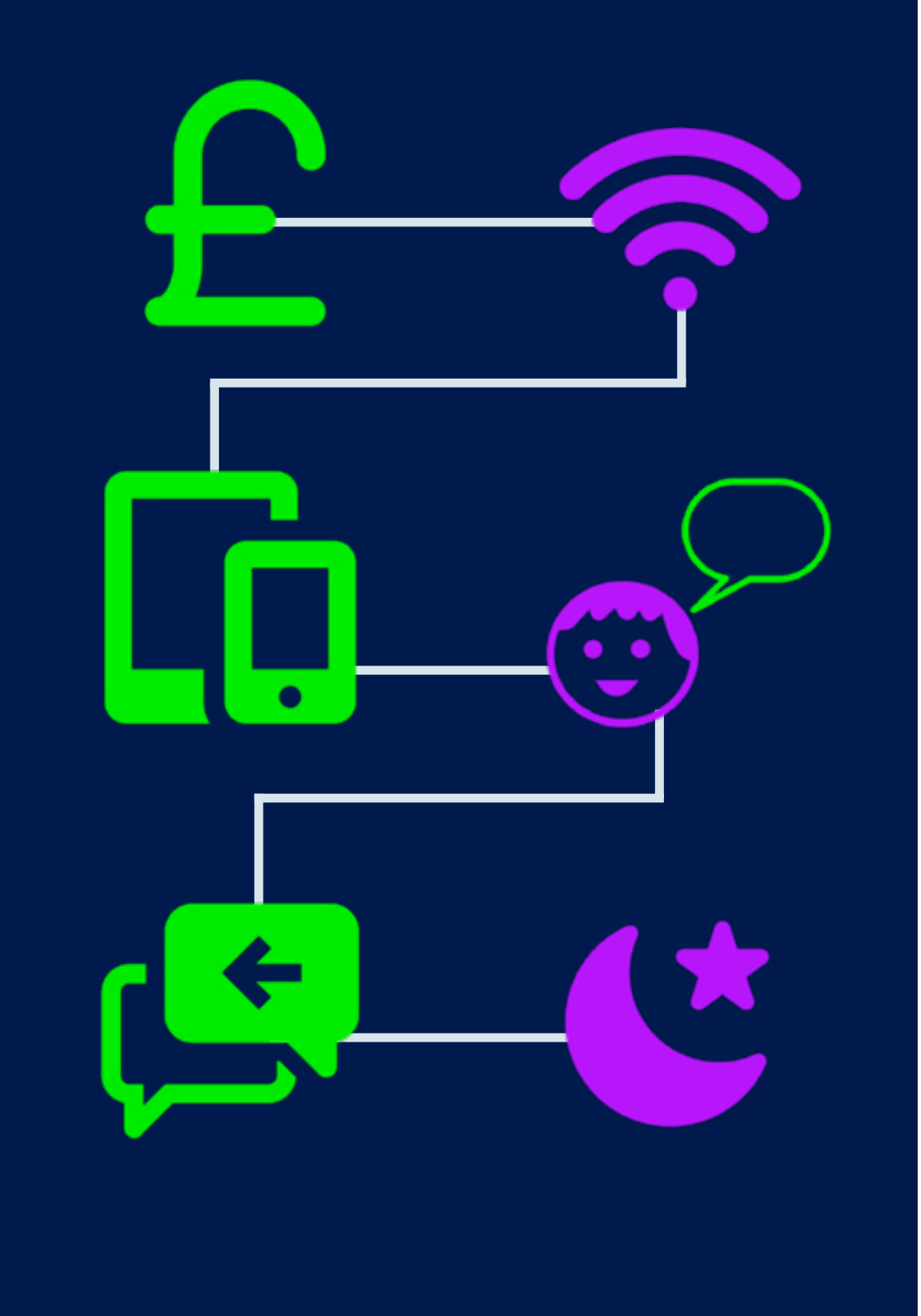
Google home is a voice-controlled virtual assistant that allows the user to make calls, asked questions, play music and is a personal assistant. It also has features that give children the opportunity to use the device. Google home allows for the user to play games, it has games that help children. With memory, rhyming, creativity and has quizzes. It also has a storytelling feature that is used to entertain the children. It also has a calming feature that helps with meditation that will help the child wind down when it close to bedtime.

Personal assistant
Can be used to play games
Make voice calls
Source of entertainment

Research insights

- A current gap in the market for a learning virtual assistant for kids
- That children are using smart devices every day
- Parents will encourage children to use a device if it has learning possibilities
- Children main use of smart devices is Learning closely followed by gaming and entertainment
- Children are using certain devices too much and are so immersed they don’t listen to their parents.
- Concerns about eyesight and lack of exercise being raised about children using smart devices
- Parents appreciate the ability to monitor their children activities and like so watch them learn.
- The majority of children do not use virtual assistants yet
- Children enjoy learning independently

CONCEPT DEVELOPMENT



Customer Journey

This is the customer's journey a user will have when the purchase Ali. Firstly, the customer purchases the device, once they are home they are able to connect the device to the internet using wifi. When the wifi is connected the adult will be able to use the application to set up some of the basic set up information, they are able to connect the device to other smart devices. The user can then start asking Ali questions and using commands. Ali will answer the question or perform the task that has been asked. Ali will also call out to the user to ask questions such as when the child has returned from school it could ask what did they learn about today. Ali will also have a night mode that can be set up in the parent's app this will restrict what the device can do an what the children can ask. It can be used to get children ready for bed and introduce medication or wind down time.

Target Audience

The target audience for this device is children around the age of 3-8. I have chosen this demographic as children around this age are learning to speak and are quite inquisitive. I plan on creating a child-friendly physical device that children this age will enjoy. I am focusing this device on both boys and girls as it should be seen as a device that can be enjoyed by both gender

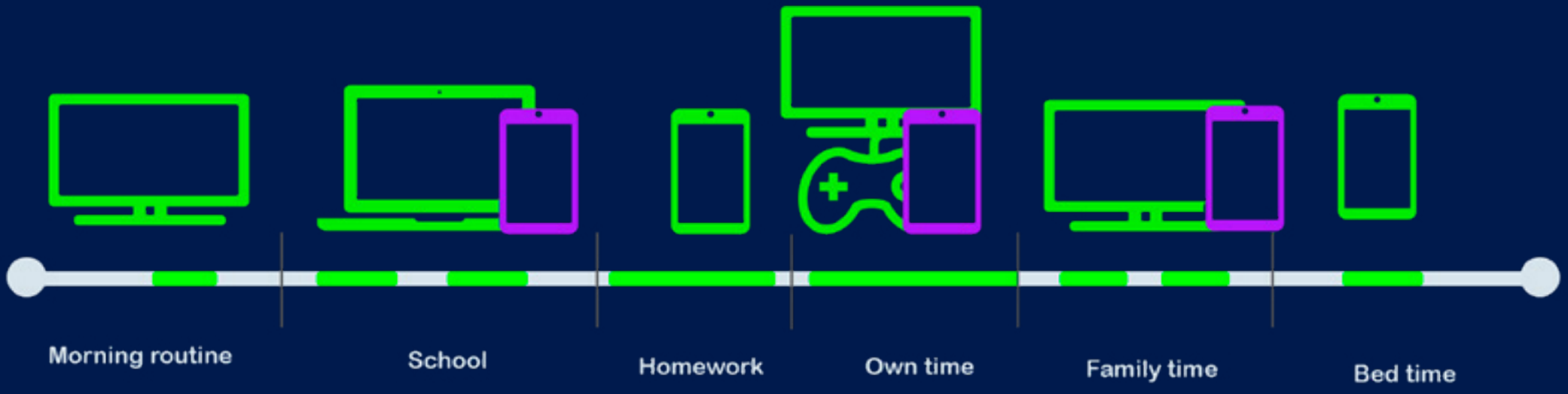
Personas

Kyle Marshall - 6

Kyle has a autism that affects how he communicates and behaves with people. He is quite uneasy and shy around people. Kyle likes to play on his tablet and if he is by himself will talk/ sing along with his applications. His parents have noticed that he is more confident when he is speaking about something he has found out on his tablet. Ali would be able to help Kyle with his communication issues. By using speech to command and because it is an animate object he will feel more confident to speak with the machine. Ali can also allow for Kyles parents to monitor how he uses technology and the subjects he is interested in.

Shy
Short attention span
Sensitive

Kyle’s daily device journey



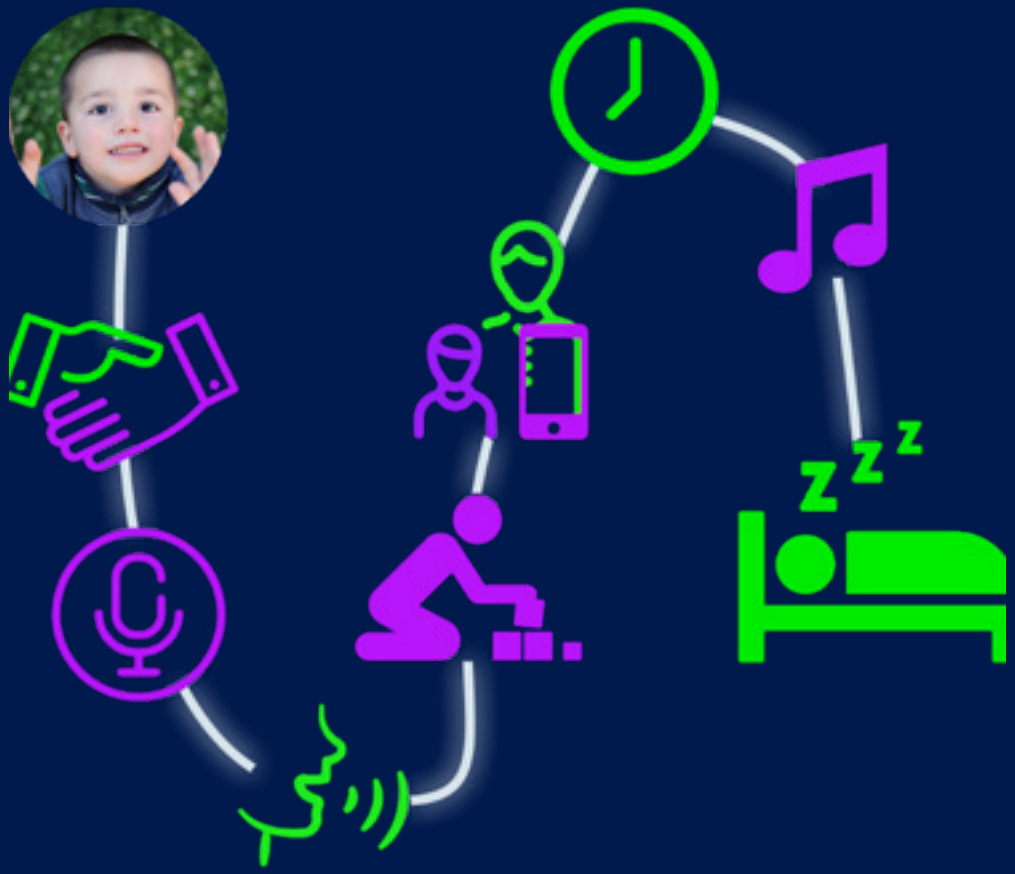
Kyle’s user journey

Kyle is a bit wary of the new device in his home as it is unfamiliar.

His parents encourage him to have a go with the device. The parents advise Kyle to introduce himself to the device.

The device responds to Kyle introducing itself and describing that is his companion. It asks Kyle some general information about his age, where he lives.

Kyle becomes more confident and excited about this new device and brings it to his bedroom to play more.



Kyle’s parents are able to monitor what is being said to the device. They can see that Kyle is having a fun time with his new device.

Close to Kyles bedtime, the device reminds him that his bedtime is soon and that he should get ready for bed. Kyle goes to brush his teeth and get his pyjamas on.

The device goes into night mode playing relaxation noises to calm Kyle down.

Kyle is happy to go to bed knowing his new companion is also there.

Personas

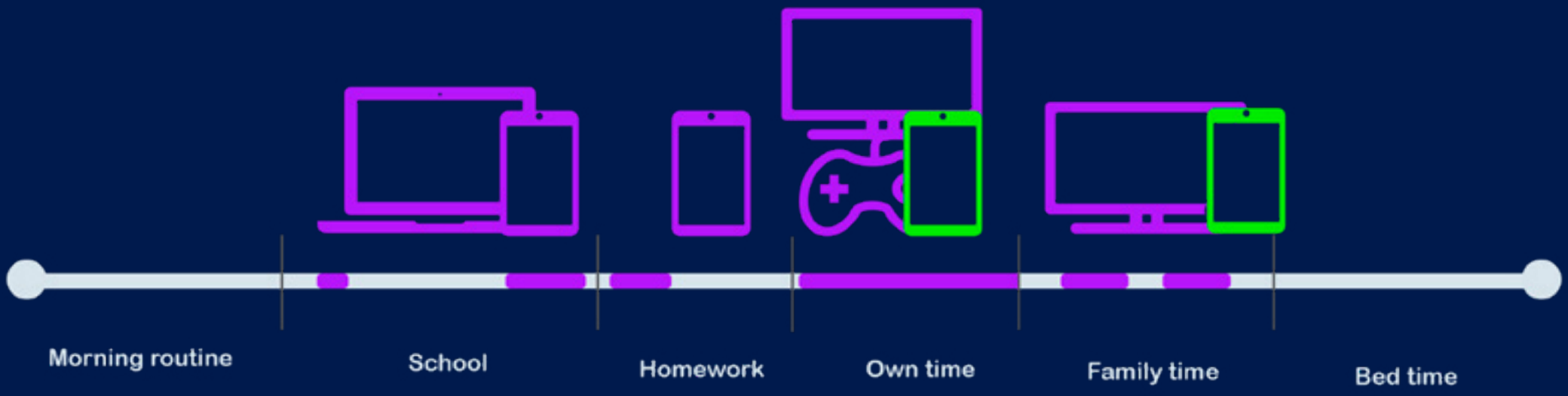
Riley Barnes - 7

Riley is a hyperactive, naughty child. He doesn't enjoy school much as he doesn't like to sit in silence for too long. This attitude has affected his academic progressing. His parents are worried that he isn't going to learn much if his attention isn't improved.

Ali will be able to assist with Riley as he will understand that if he wants an answer he will need to wait. As Ali encourages children to learn this will be a friendly way to teach the kid without having an "authority" figure. The parents are able to monitor what Riley says to Ali which can help him not use rude language. The parents can also find out what he is interested and find a way that he can learn.

Naughty
Mischievous
Confident

Riley’s daily device journey



Riley’s user journey

Riley is introduced to the device by his parents. His parents foolishly describe it as a learning device. Once Riley hears that is a learning device he loses interest but is still intrigued by what it can do.

His parents encourage him to ask it to play a song. Riley askes the device to play his favourite song

The device plays his favourite song

Riley is impressed and wants to use the device more. He asks the device questions and it responds.

Riley is really enjoying the device and asks to take it away.

Once he is away by himself, his parents get a notification that he has used inappropriate language.

The parents are able to speak to Riley about “what they just heard” and threaten to take the device

Riley doesn’t want to lose the device and pleads to let him keep it if he is good.

The parents agree and leave them too it. Riley asks the device more appropriate questions. His parents are happy that Riley is using the device and are able to see what interests Riley so are happy leaving him to use the device knowing that they will be alerted if something inappropriate is said.

Personas

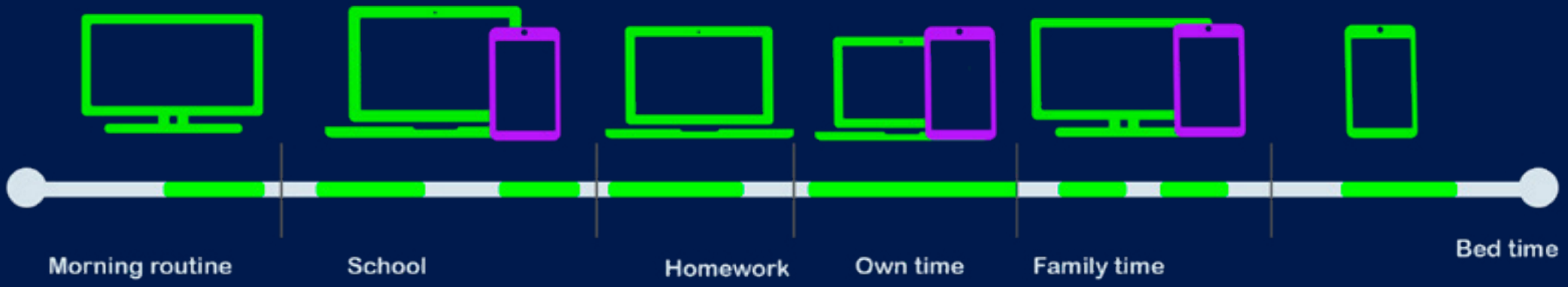
Jessy Thompson - 7

Jessy is an intelligent and caring child. She enjoys learning and school. She is constantly questioning her parents to try to find out the information that she is curious about. As she is inquisitive sometimes her parent get frustrated as they are unable to tell her the answer. This then means that the parent has to search this which takes time out of the schedule.

The learning device would be perfect for Jessy as she enjoys learning and can bombard the device with how much questions she would like. As the device is connected to the internet it gives her endless opportunities to learn about new topics.

Intelligent
Well-behaved
Inquisitive

Jessy’s daily device journey



Jessy’s user journey

Jessy is excited about the new device her parents told her she was getting. She rushes to her room when she gets home and she introduces herself to the device.

The device responds by introducing itself and asks more follow up questions to Jessy.

Jessie wants to test out some of the features, she asks the device to draw then asks it to play some music.

The device responds appropriately.

She continues to play with the device asking question after questions.

Her parents are monitoring the conversation as they can her Jessy laughing and giggling. They are happy to see Jessy is having fun with the new device.

using the device the parent’s tell Jessy its time for dinner. Jessy listens and goes for her dinner.

Once she is finished she asks can she use the device more. She used the device until near her bedtime. The device advises her to get ready to bed and plays relaxation music. Jessy goes an gets ready for bed.

When Jessy is in bed she continues to use the device. However, this is in night mode and tells her to ask questions in the morning. The parents also get a notification that Jessy is trying to use the device.

They advise her that she should sleep and the device will be there in the morning, Jessy is happy to go back to bed.

Personas

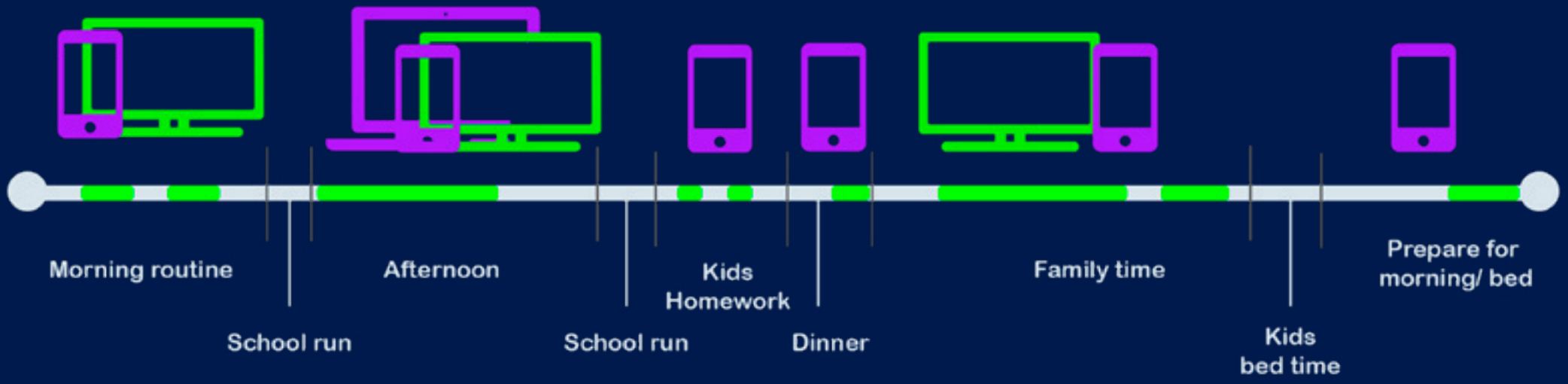
Lisa Pollock - 34 - Parent of 2

Lisa is a single parent with two young children Cassie (age 3) and Aaron (age 6). As a single parent, Lisa is constantly busy running after the children, this is particularly more exhausting when Aaron returns from school. She likes to give her children an iPad when she needs to get something done and when she just needs to take a breather. However, there is only one iPad between the two children which can be quite irritating when they start to fight over the device. She would like a device that will not only keep the children occupied but can be used to help the children learn.

As the learning digital assistant has a wind-down feature this could ideal for calming the children down at certain parts of the day. As no one physically needs to hold to a device to use it the kids can enjoy the device together. By introducing this device she will also help the children with their communication skills and this is quite good as Cassie will be learning to speak. The device will prompt the user if it doesn’t understand the command or if it can make it out. This will then make the kid repeat the command hopefully encouraging them to speak more clearly and to think about how they are wording the command.

Single Parent, Busy, Caring

Lisa’s daily device journey



Lisa’s user journey

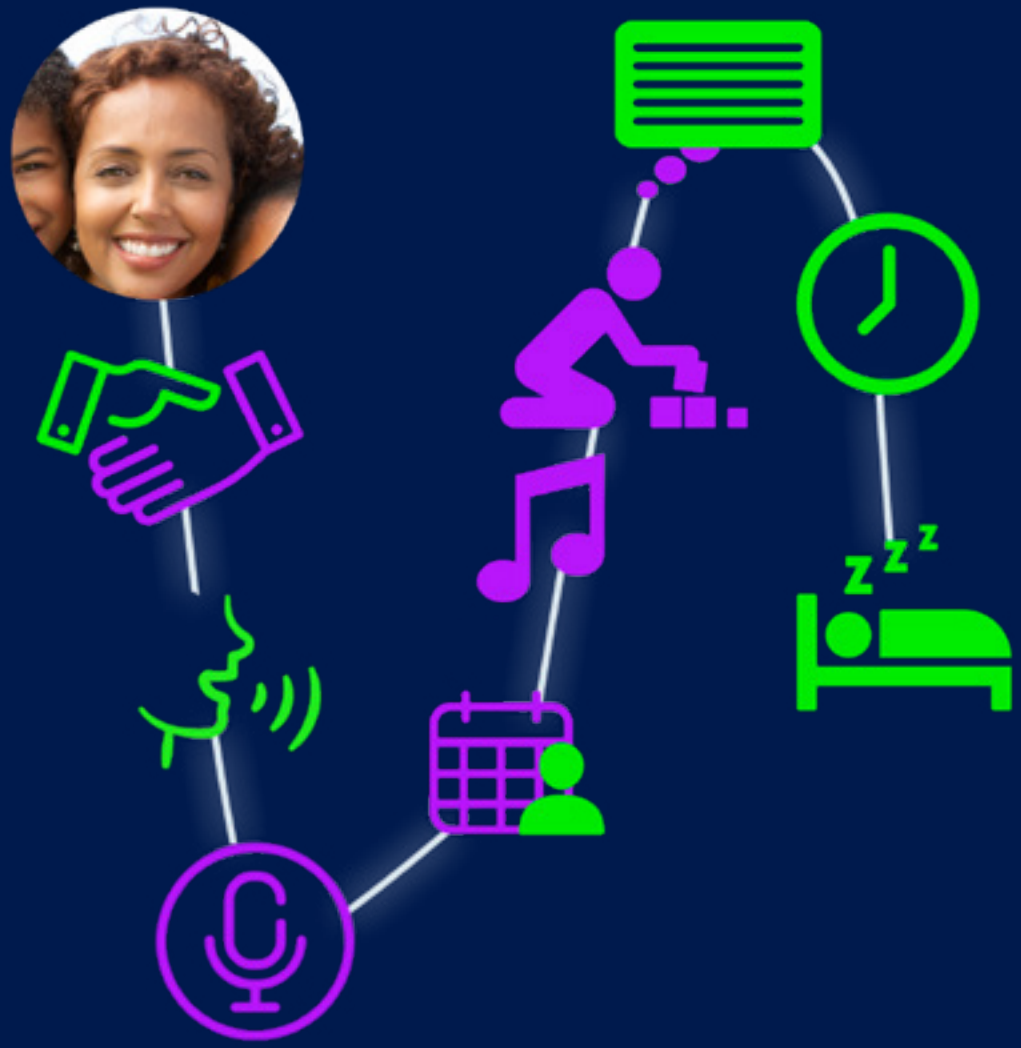
Lisa purchases the device as she is quite busy with two children and is hoping this will give her more time to herself but also help the two children to learn.

When Aaron returns from school, Lisa introduces him an Cassie to the device.

She begins by letting Aaron speak. Lisa is impressed how well the device responds.

She uses Aaron to set up the rest of the device.

Lisa inputs the rest of the information for Aaron and Cassie.



Lisa is cleaning and wants some music so she uses the device to play her favourite Tom Jones playlist. The kids then want to use the device

Using the speech feature she is able to tell the kids that their dinner is ready and to come to the kitchen.

whilst having family time the device reminds them that bedtime is coming up soon and to get ready for bed. Lisa is happy as the kids jump when they hear this command.

She notices the relaxing music and is able to get the kids to bed in no time.

Benefits

- A unique and fun learning device.
- Helps with communication skills.
- Source of entertainment to keep children occupied.
- Personal assistant for the parent.
- Use voice recognition which means that children won’t be constantly holding the device and ignoring parents.
- The child won’t be staring at screens for long period of times.
- Parents have the ability to monitor usage. Using notifications to make them aware of how the device is being used.
- Games on the device to make the child be more active.
- Allows the parent to type in a command to the child will listen to them.

Refining features

Child

Answers questions the child might have. It will also ask this question back to the child in a period of time to see if the child remembers the answer.

Can help with speech, learning, maths, and speech.

The device knows child's routine so is able to get the child to discuss what they learned at school that day.

Touchscreen Display- Shows images and can be used as a drawing pad. (children are used to touchscreen displays so this is why it needs to be touchscreen)

Built-in speaker for vocal feedback and audio for music.

Nighttime mode - Suggest that the child should get ready for bed, plays relaxing music and gives child limited access to features. (notifies the parent if being used after bedtime).

Parent

Allows the Parent to use the companion application to monitor and watch the child's learning progression. The parent can use the device to as a personal assistant by adding things to the child daily routine. It can also be used to tell time, weather and will be reminded when an event in the planner is coming up

The device has a speech feature which allows the parent to give out commands via the device.

Notifications via application remind the parent if the child has an appointment, has used inappropriate language or is using the device past their bedtime.

Parents are able to monitor the child usage via the device as they can see the chat log. They can also watch the child's learning progress through the application.

Unique selling point

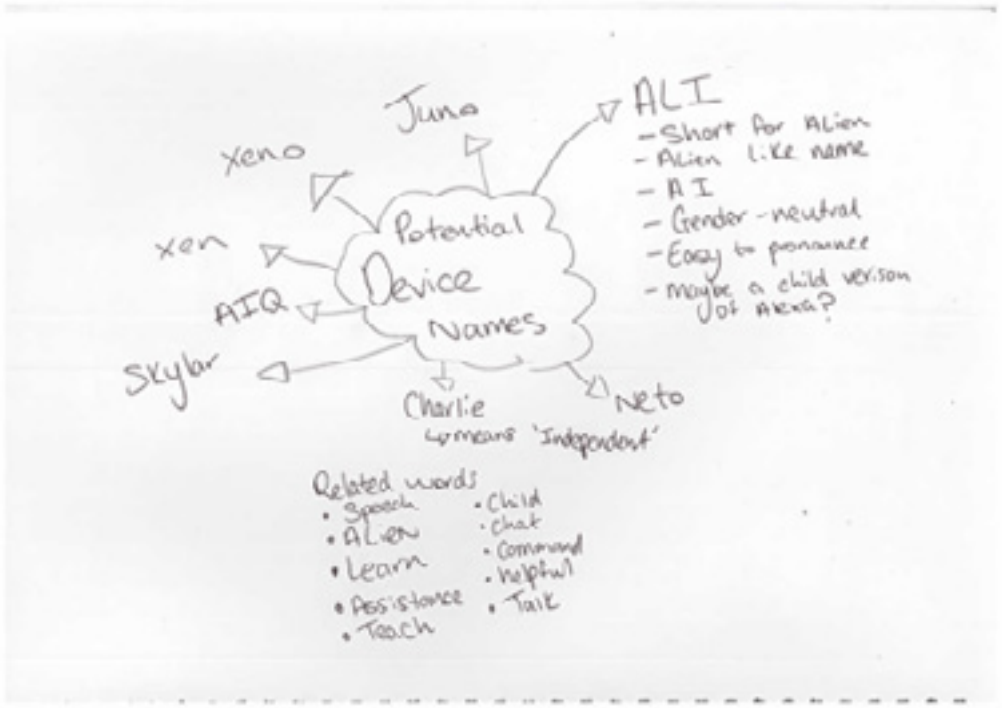
A unique child-friendly digital assistant that encourages children to learn. Not only does it do this but can be a source of entertainment. The device also allows the parents to use it as a personal assistant for the child, along with the companion application they can monitor the device usage and watch the child’s learning progression.

DESIGN DEVELOPMENT

Branding

Names

After gathering feedback in relation to the child-friendly virtual assistance I decided to then come up with names that would suit the product. For this, I wanted a unique and easy to say name so that a child at the age as young as 2 would be able to say this. I started to think about what the character of the device could look like to help me decide on a name and what type of names I should be thinking about. As the device would potentially learning with the children I thought that the idea of a young type of creature would be best so the child can connect with it. I thought the idea of an Alien coming to Earth to learn would be a good way for children to use the device.



I decided on the name Ali for this device for numerous reasons. Ali seemed to fit the project as it is a short and easy to pronounce name. This will make it accessible for the target users to use. It also suited it as it Ali can be short for alien. Ali is similar to the word Ally meaning that it will be a close friend. Ali is a gender-neutral name this is important as the device will be marketed as boys and girls. Without giving the device a gender-specific name the child can imagine the Alien as whatever they like.

Branding

After choosing the Ali as the name of the device and coming up with a few ideas of how the logo should look like I decided to try this out with some colours schemes and fonts.

The font I was aiming for would be one that is appealing to kids, I decided that I liked rounded fonts as this looked quite playful. I tried the word Ali in numerous different thoughts. The one that stood out to me was Arial Rounded MT Bold, this stood out as it looked quite well wrote as Ali and has a child feel to it.

I started looking online for colour schemes associated with space. I saw a lot of greens, dark blues, and purples. I liked the contrast between the green and purple, so wanted to incorporate this into my own design. I went for vibrant bold colours as I feel this would appeal to the target audience.

Font

ALI

ALI

ALI

Colour Scheme

Hex Code: #21eb1c

Hex Code: #9d1cf6

Hex Code: #fff354

Hex Code: #dbe4eb

Hex Code: #02234e

When I started to develop and create logos, I thought about what was the related aspects of an alien. From this, I created multiple logo designs with UFO's and antennas.

Logo development

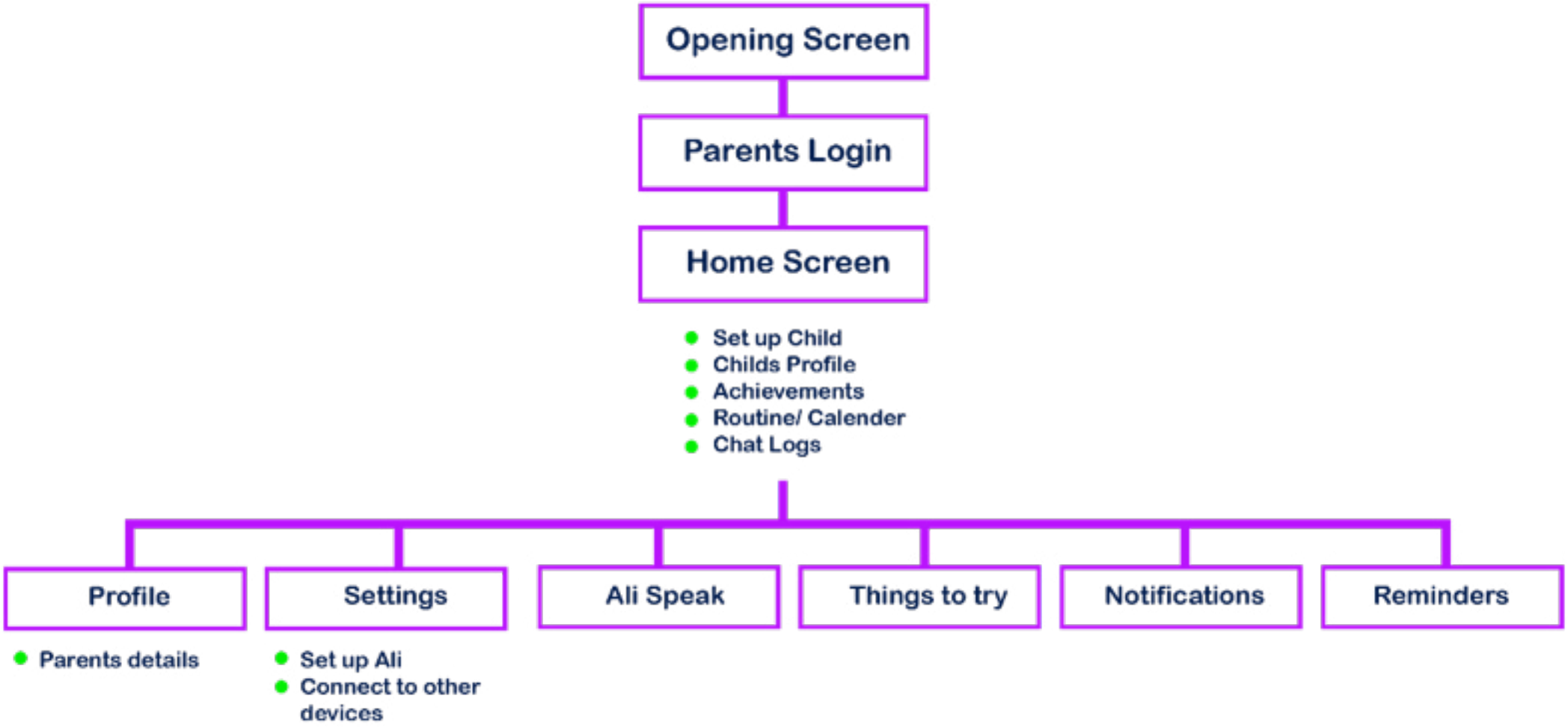
After sketching my logo ideas, I decided to make some of my favourite designs into digital versions using the brand colours so I could have an idea of how this might look. I wanted the logo to look be easily recognizable and be able to be drawn by a child. I experimented with different colours for the features of the logo.

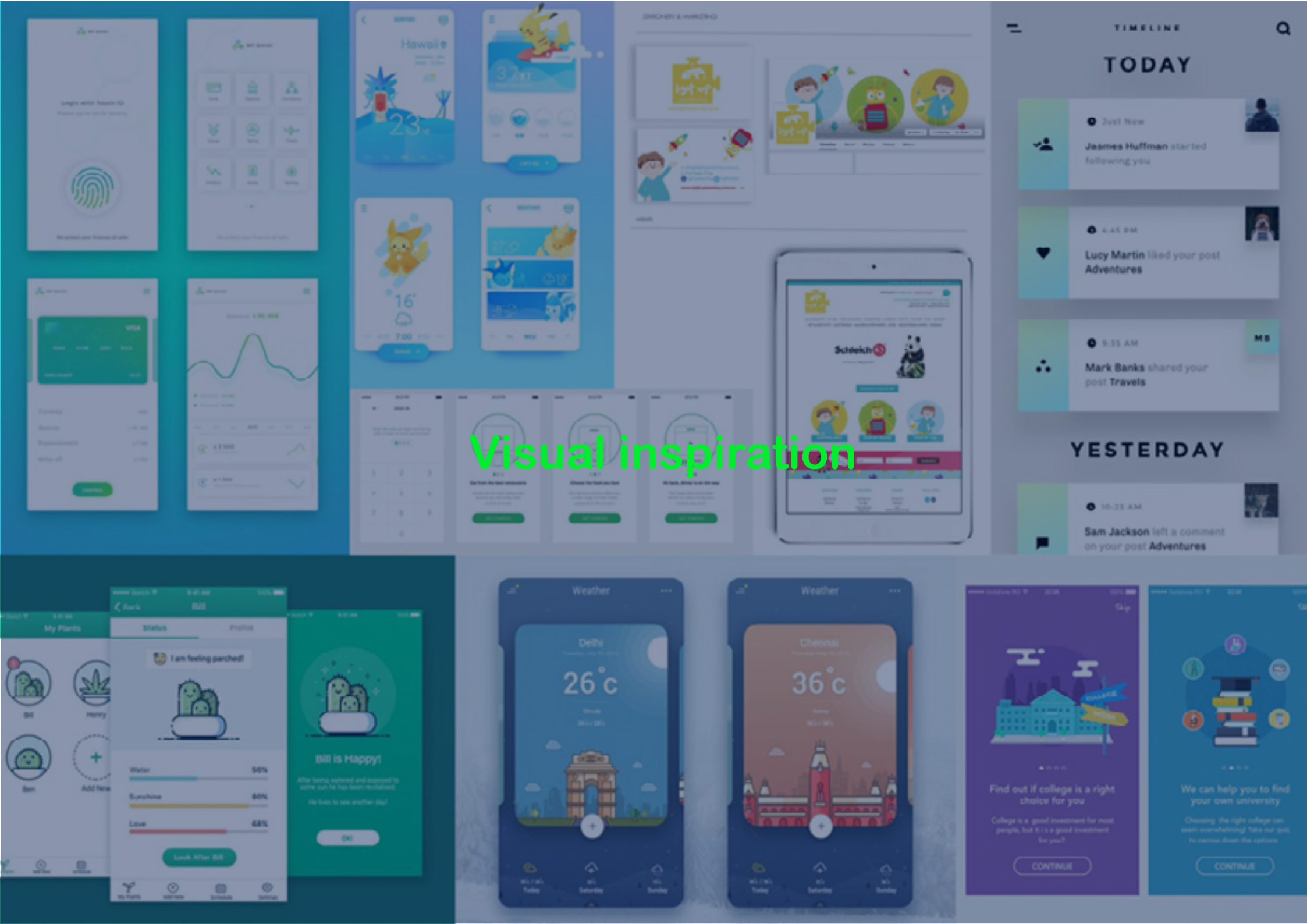
Chosen Logo

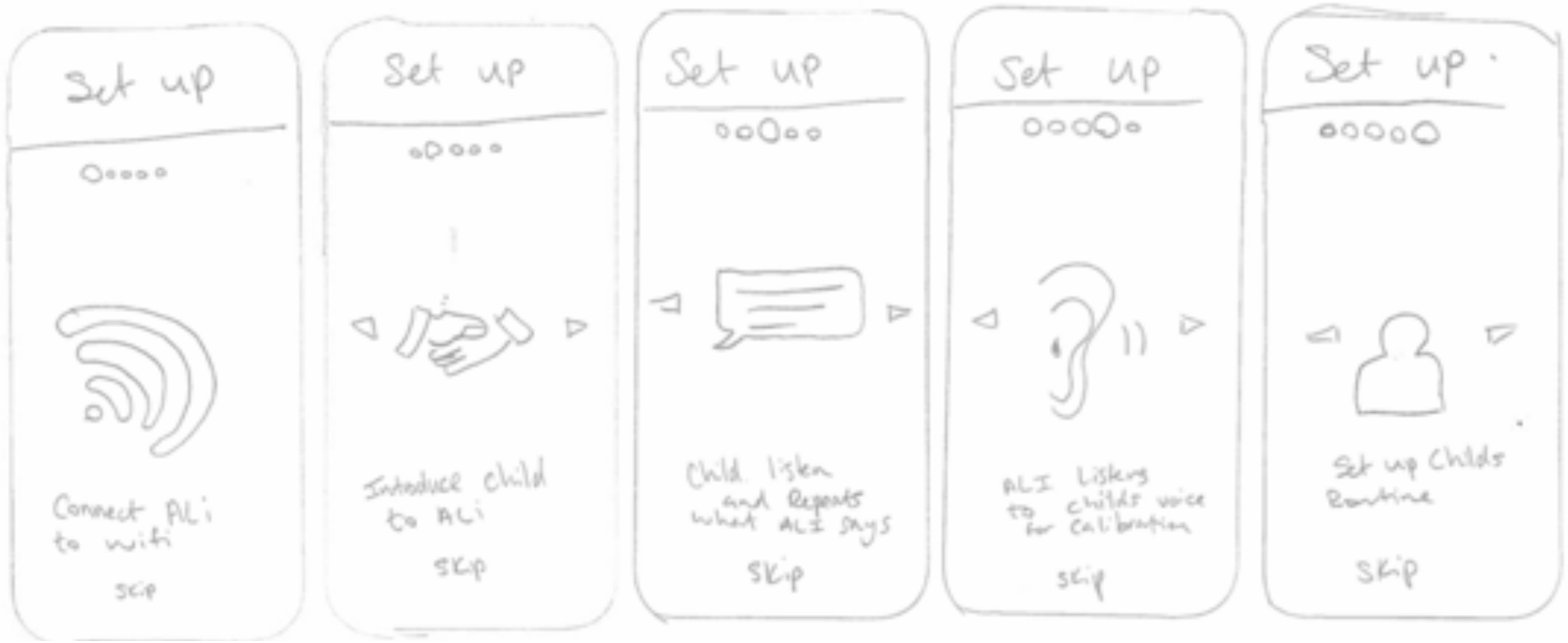
After looking at the different iterations that I created for Ali's logo, I decided that the most suitable design was to keep it minimal and not have too much design to it. This is so the logo is easy to recognise and be able to be copied by a child. I have added the slogan "Your Alien Ally" this gives the user an inkling of what the device might be used for but are intrigued to find out why this device is an ally. I decided to use Arial Rounded MT Bold as the font as this looks like an inviting font as the rounded edges give it a welcoming childlike feel.

APPLICATION DESIGN

Infrastructure

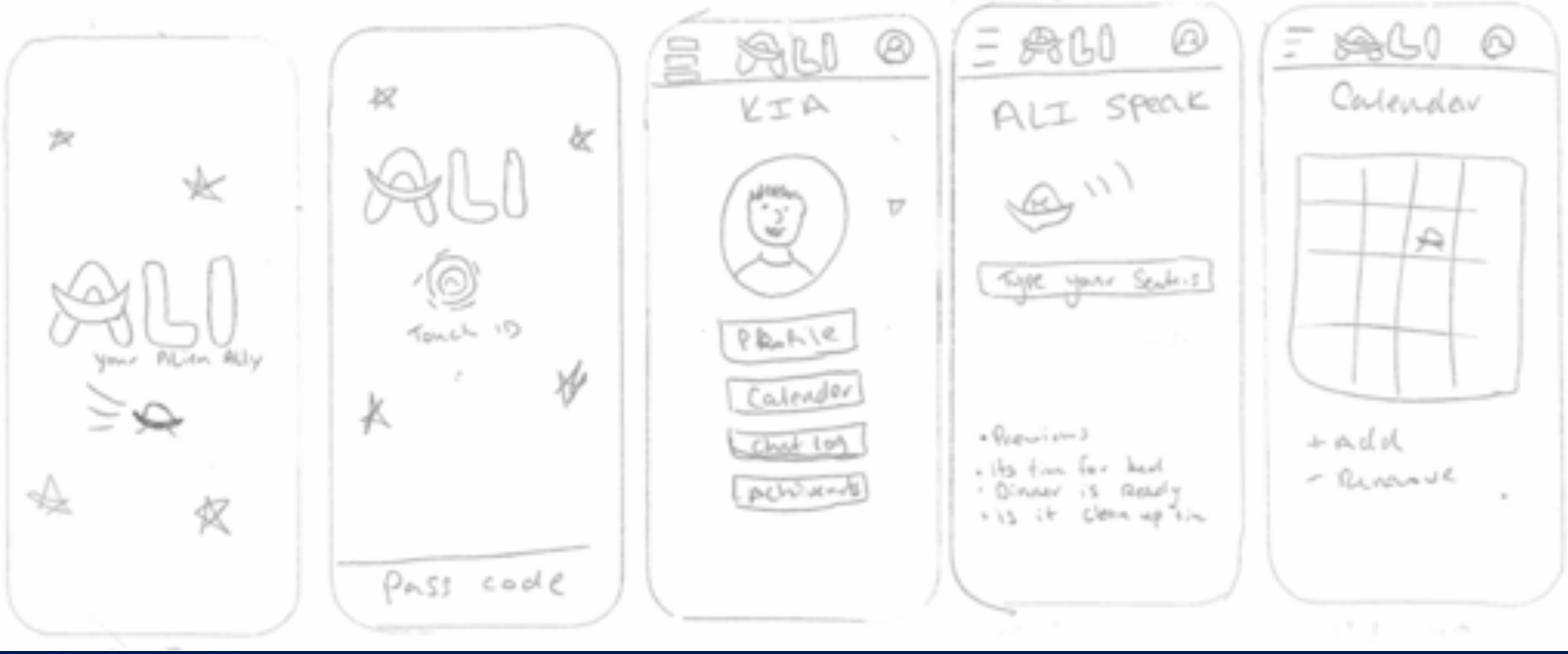



Visual inspiration
TIMELINE
TODAY
Just Now
Jasmes Huffman started following you
Lucy Martin liked your post Adventures
Mark Banks shared your post Travels
YESTERDAY
Sam Jackson left a comment on your post Adventures
Weather
Delhi
26°c
Chennai
36°c
Find out if college is a right choice for you
We can help you to find your own university
CONTINUE
Bill is Happy!



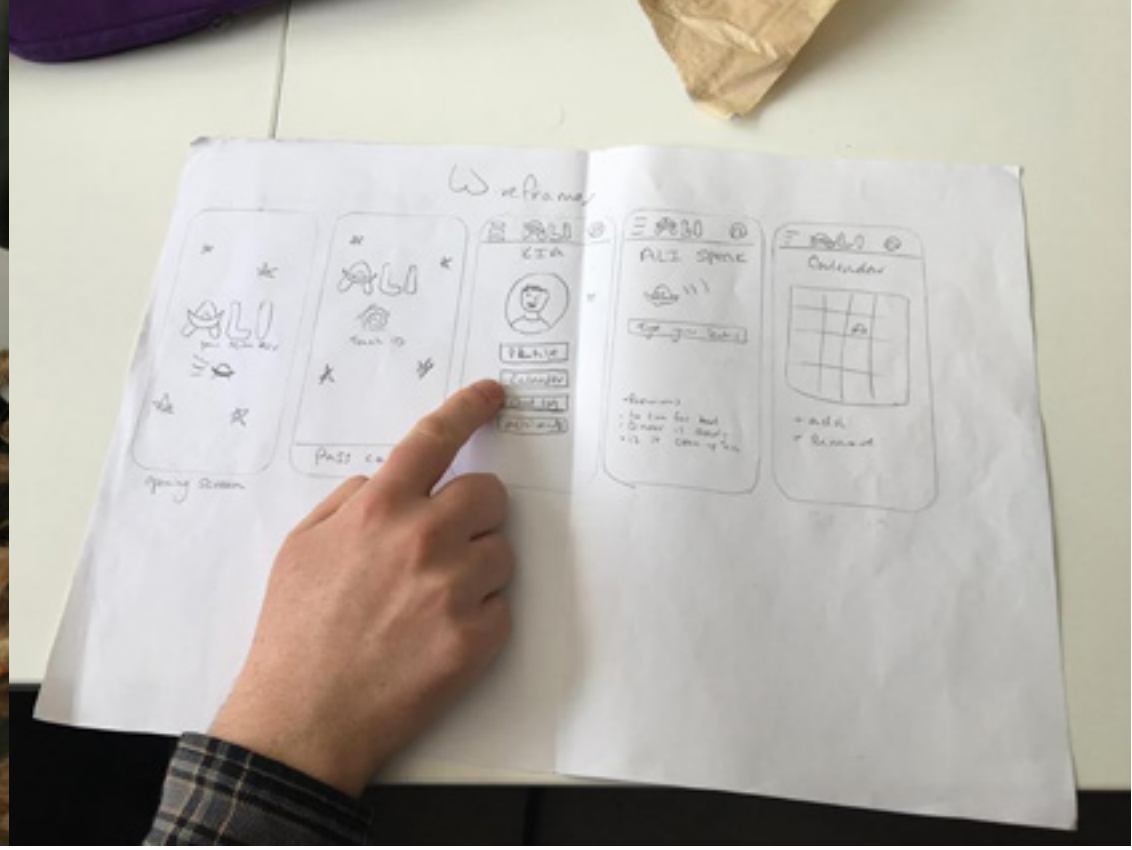
Wireframes - Onboarding

These wireframes are wireframes for onboarding Ali. You can see here that Ali needs to connect to the wifi so it can obtain its features. By introducing the child to Ali they can begin their friendship. The child then listenings to what Ali says and repeats the statements. This allows for the Ali to listen and calibrate with the child's voice/ speech pattern. After the child has been introduced to the device the parent can then do the rest of the onboarding procedure via the companion application. The parent can set up child's routine and inform Ali of the child's details (age, name, interests etc)



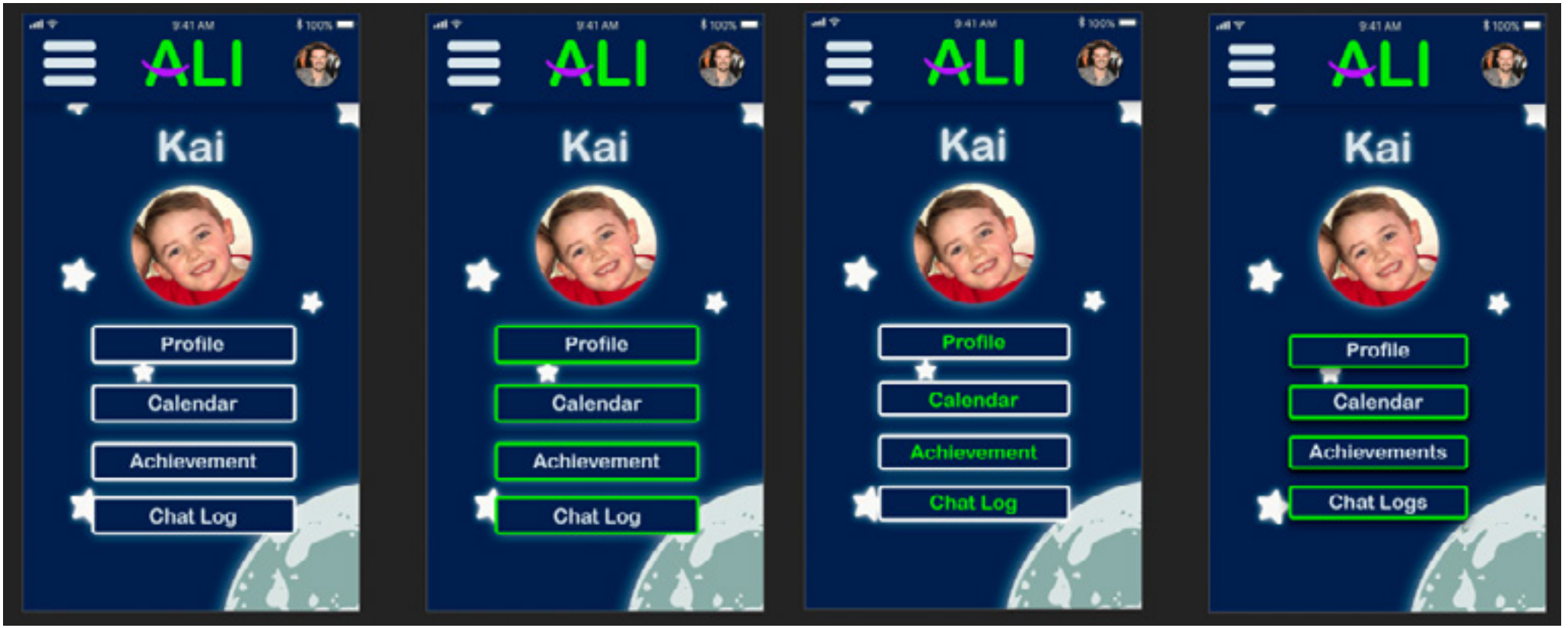
Wireframes - Application

These wireframes show the parent application. You can see from these wireframes that the application will passcode protected and the parent can use their fingerprint to access the application. I have added this as their will be data stored in the application relating to their child so this will protect this data. I designed the application to be minimal but glanceable so the parent can easily find the information they are looking for.

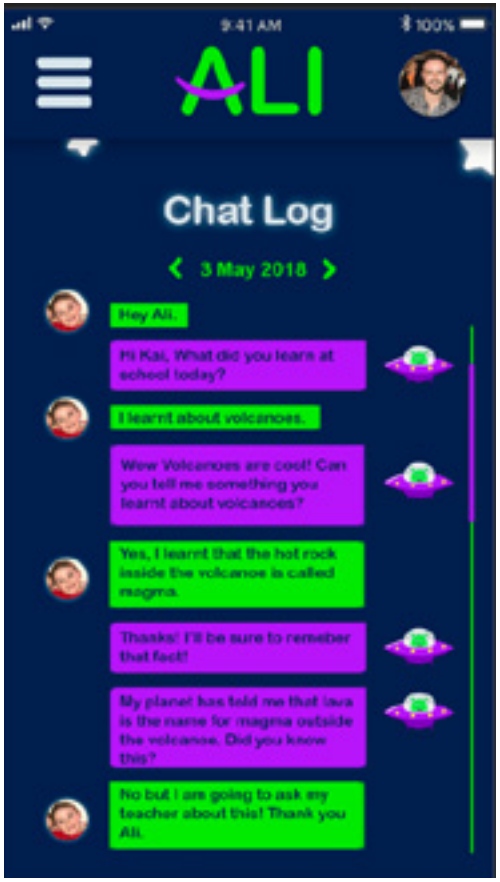


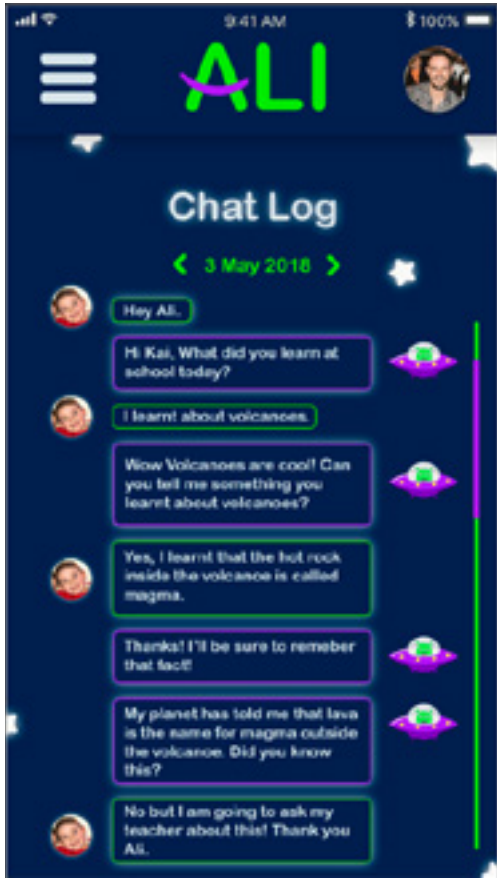
Before I developed my application screens into hi-fidelity screens I thought it would be best to user test the designs to ensure that the user finds it as straight-forward as I do. From this testing, I was able to see that the users knew how to find certain pages with the application. I also found out what they expected to happen when they clicked certain parts of the screen.

Design decision

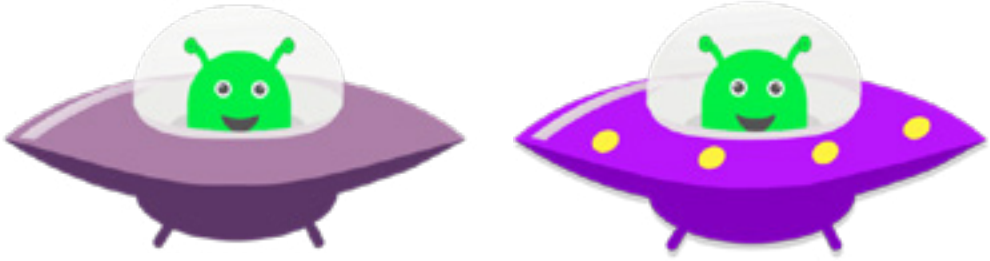


A design decision I needed to make when I was developing the home screen was how I would like the menu bars to look like. I wanted this to stick to the brand style but was finding this quite difficult to choose what iteration that looked the best. I wanted the menu to stand out from the background so it easy to see. In the end, I decided to pick the green stroke box with a glow as this stood out the most.





When creating the design for the chat log section of the application I had numerous ideas of how this could possibly look. I originally thought about solid colours with different colours to represent Ali and the child. However, I thought this looked too blocky and didn't really fit in with the sleek design of the application. I opted to use strokes will no fill as this looked nice on the screen. This will also keep the design of the application consistent.

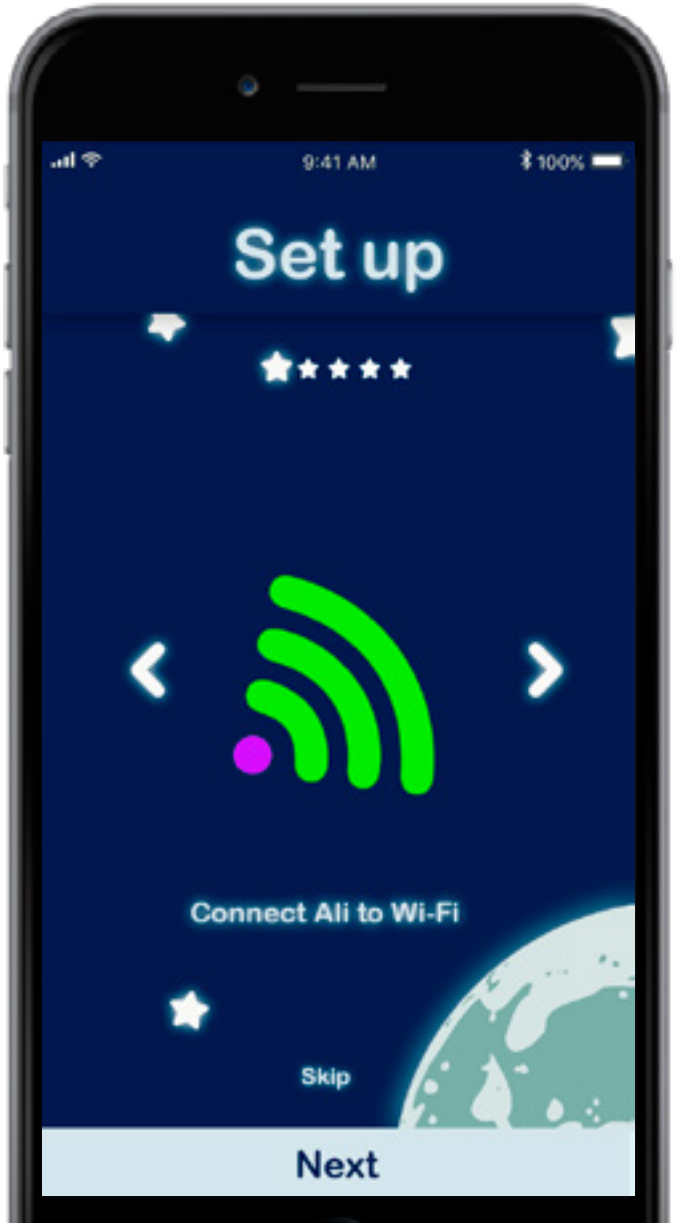


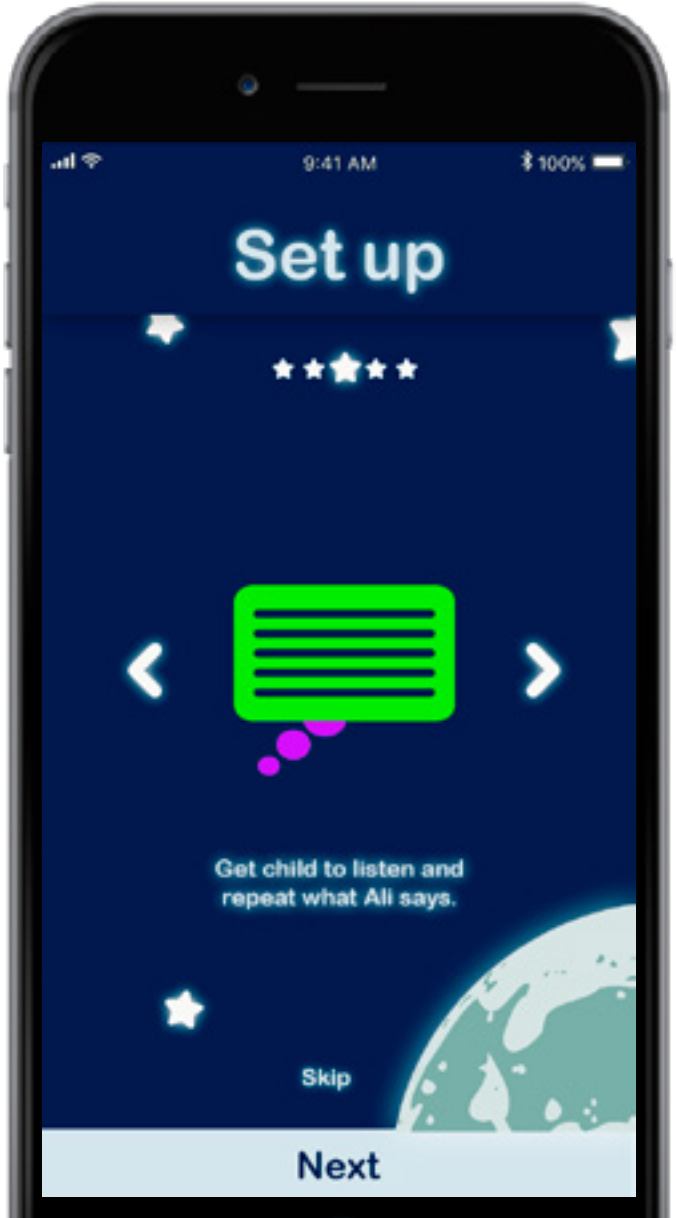
Within the app I wanted to create Ali that would be inside a ufo as this would fit well will my space-themed application. I decided that I would have a sketch of how this might look like. I then decided to produce this digitally. I firstly tried it with different colours, but when I was adding this to my application screen this didn't look like it fitted with the design. I then decided to give this another revamp using the brand colours I had chosen for Ali.

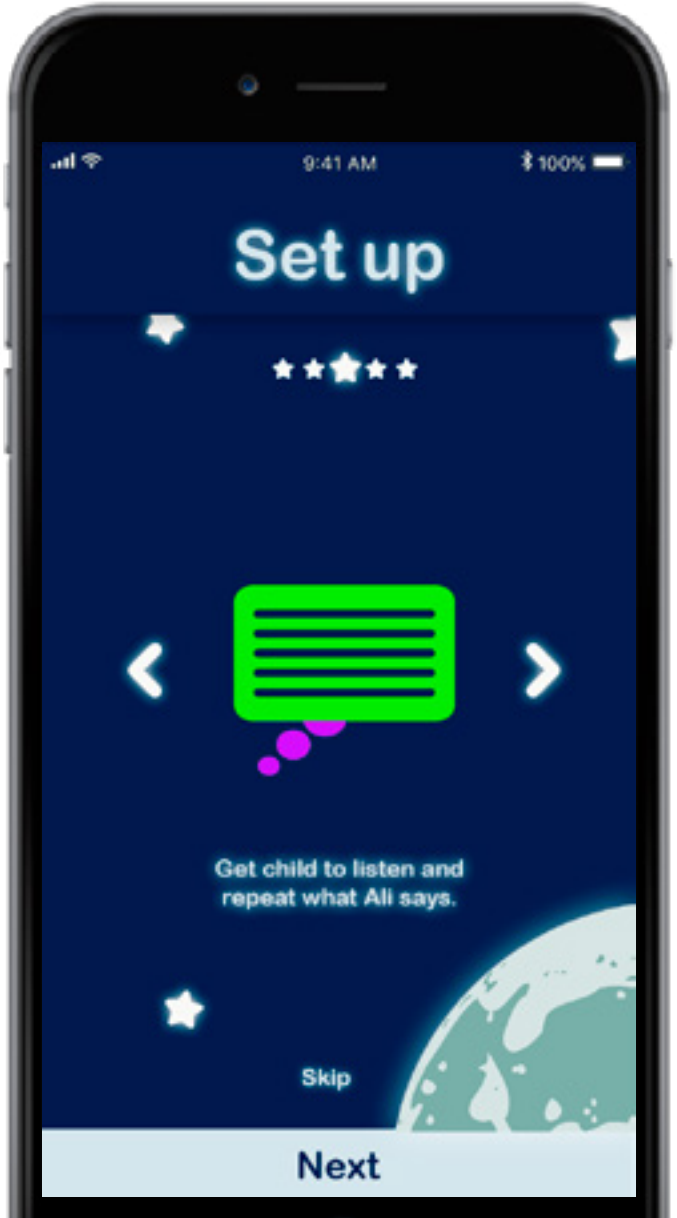
As well as changing the colour to the ufo I also added some lights and added a drop shadow to the ufo. This small design change makes the ufo stand out from the background of the app screen it also makes the graphics look better compared to my first attempt.

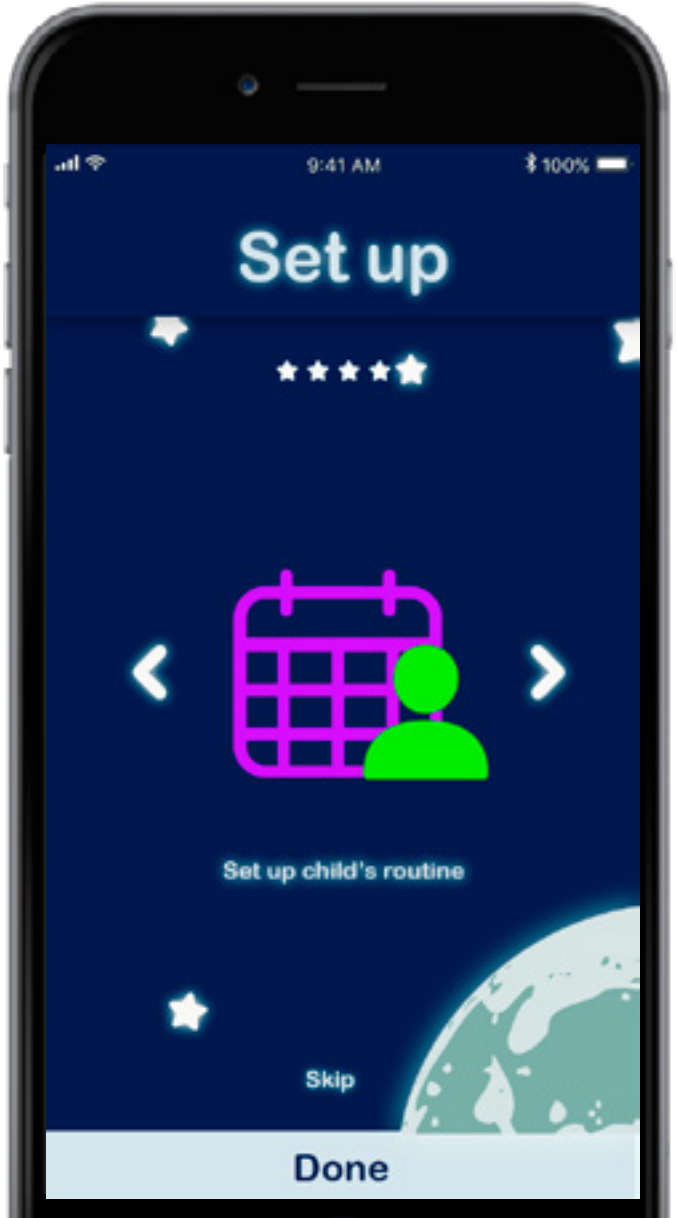
Developed screens

This is developed screens for the onboarding process of the application. When Ali is purchased these would be the screens that the user will see when they download the application. It was important for me to explain what is expected of the user to ensure the device is set up correctly.




9:41 AM
100%
Set up
Get child to listen and repeat what Ali says.
Skip
Next


9:41 AM
100%
Set up
Get child to listen and repeat what Ali says.
Skip
Next

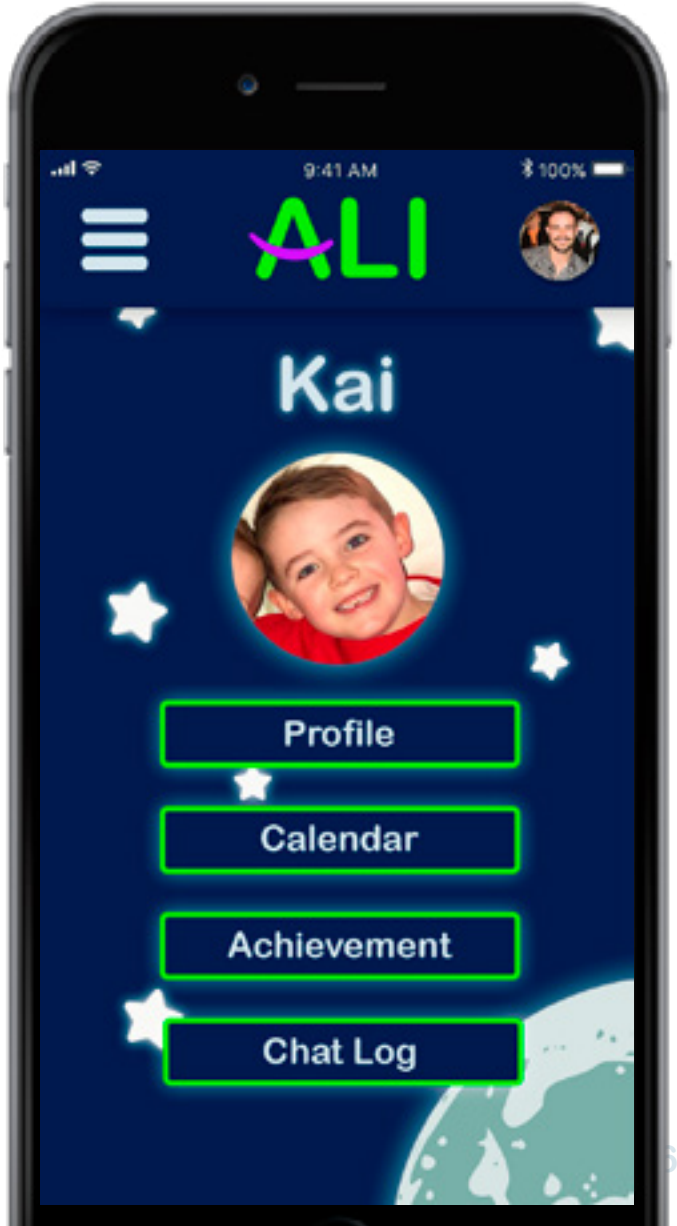

9:41 AM
100%
Set up
Set up child's routine
Skip
Done

Developed screens

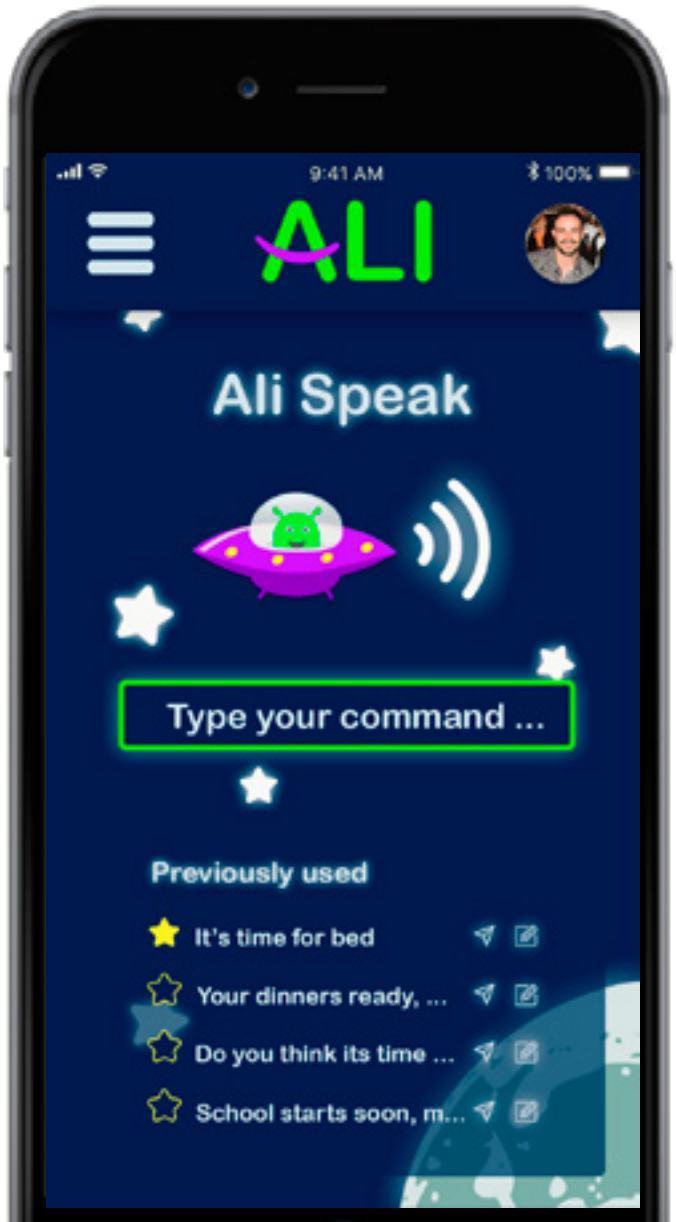
Opening screen

Passcode

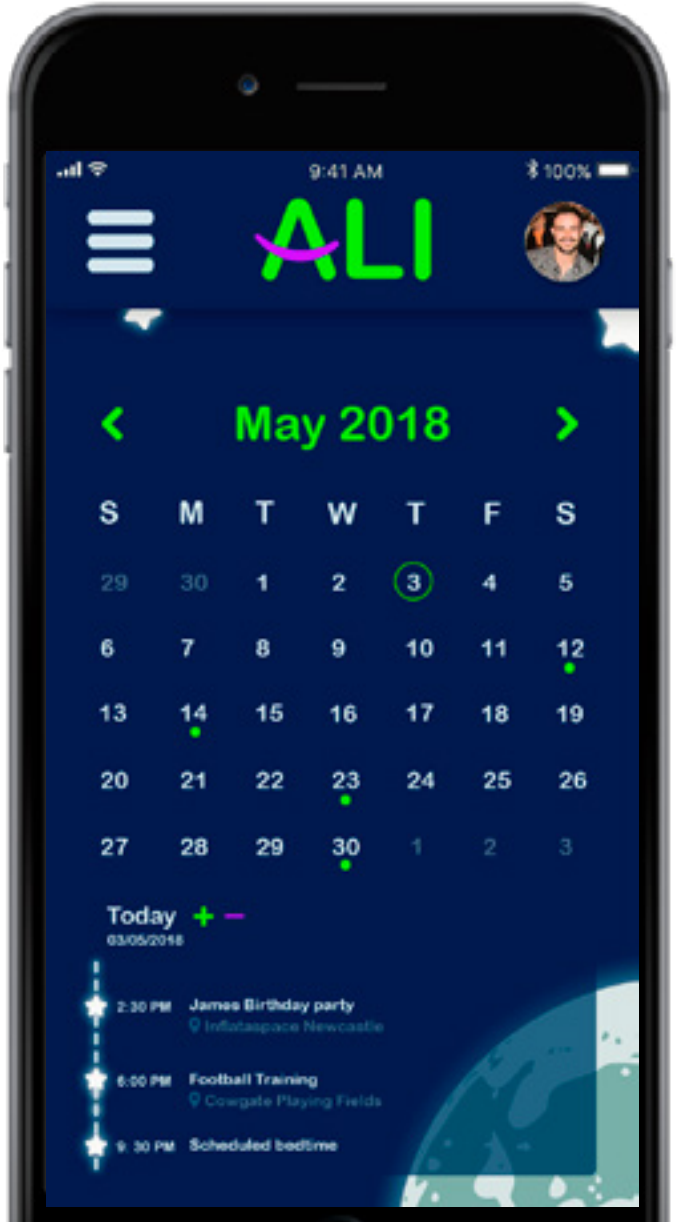
Homepage



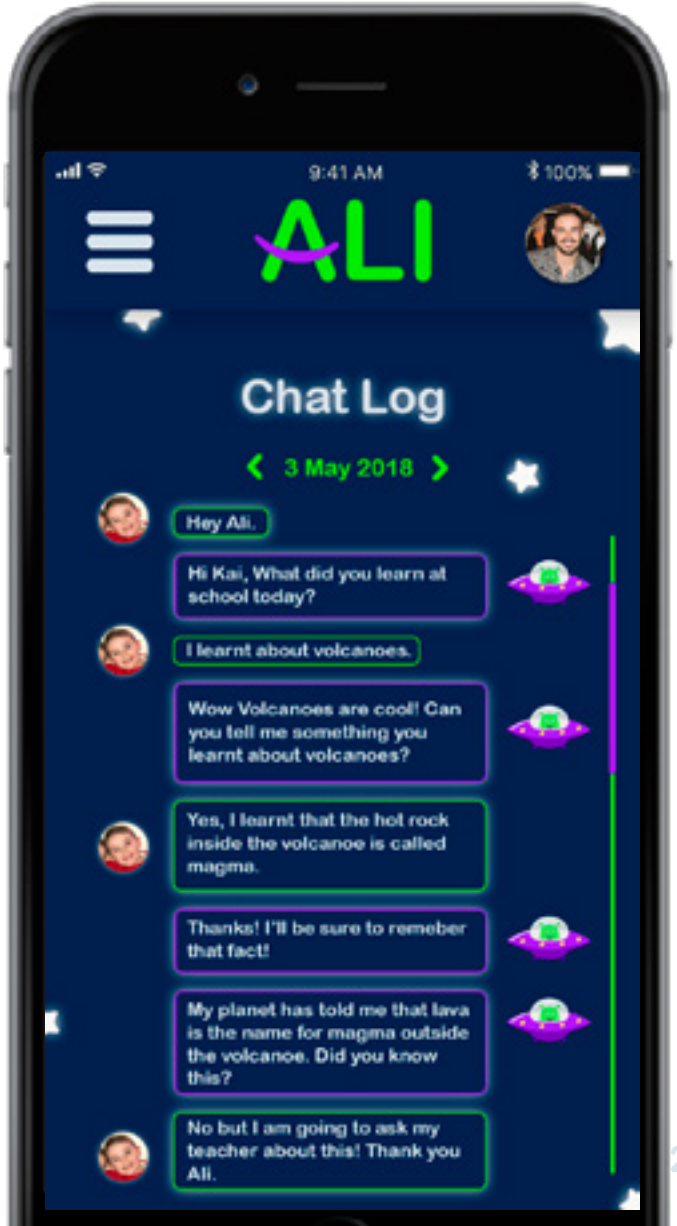
Ali speak



Calendar

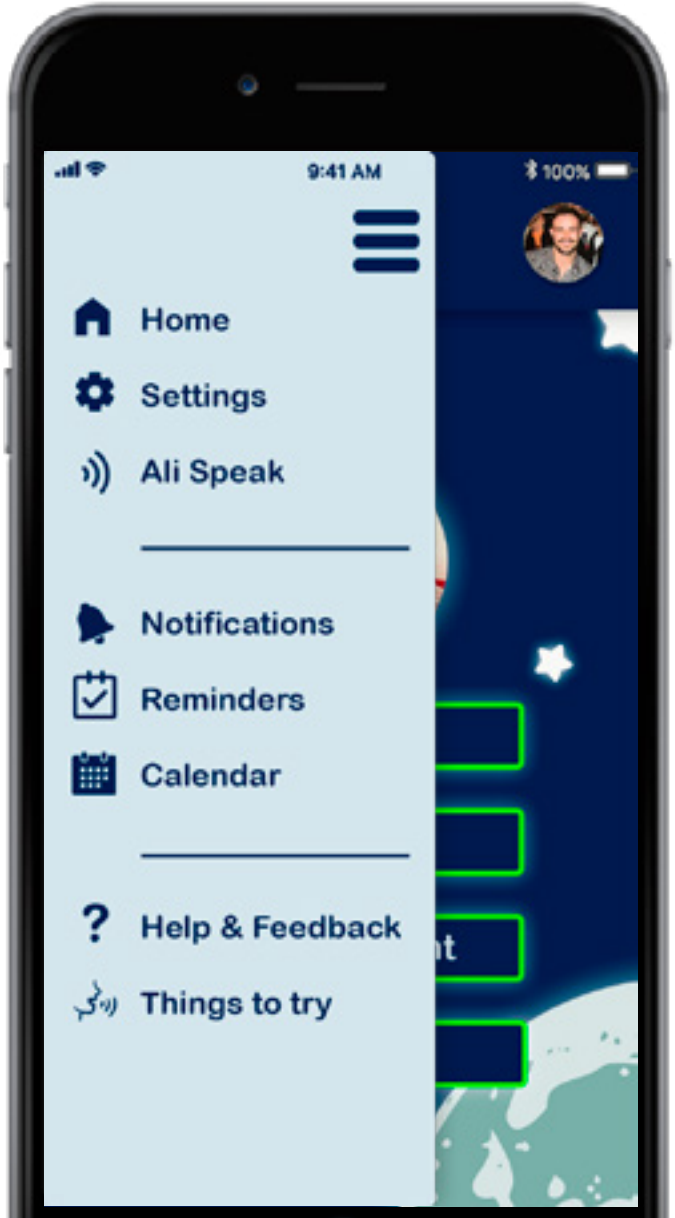


Chat logs

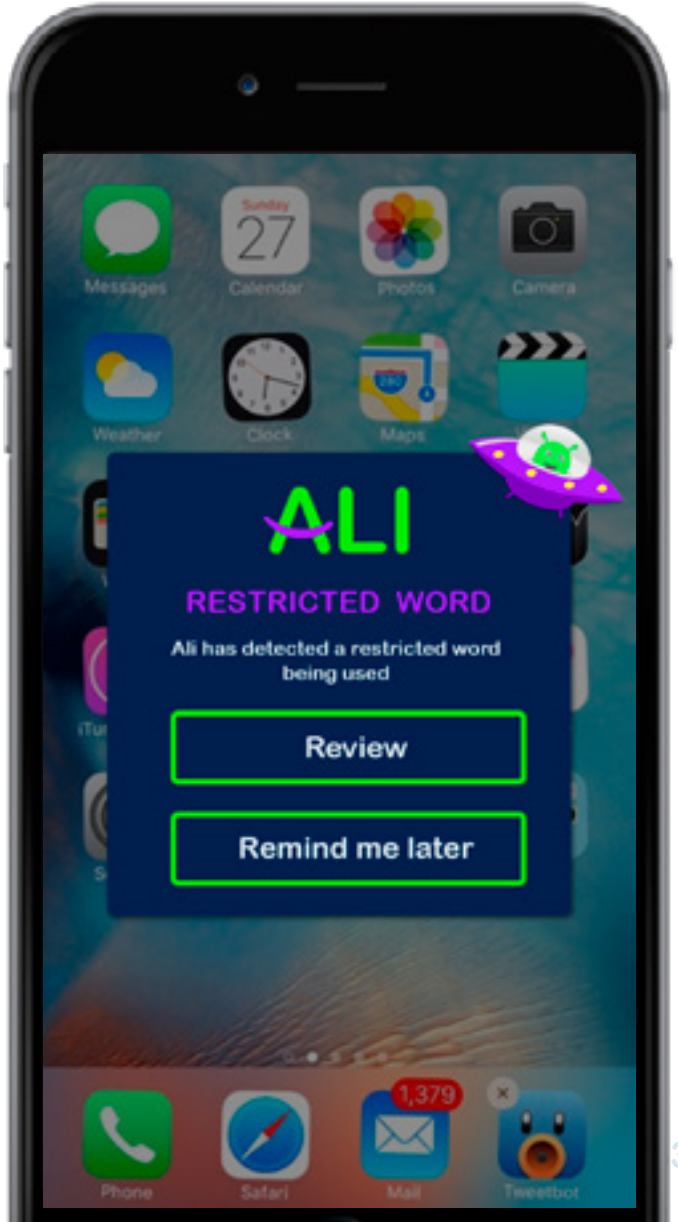


Achievements

Menu



Notifcations

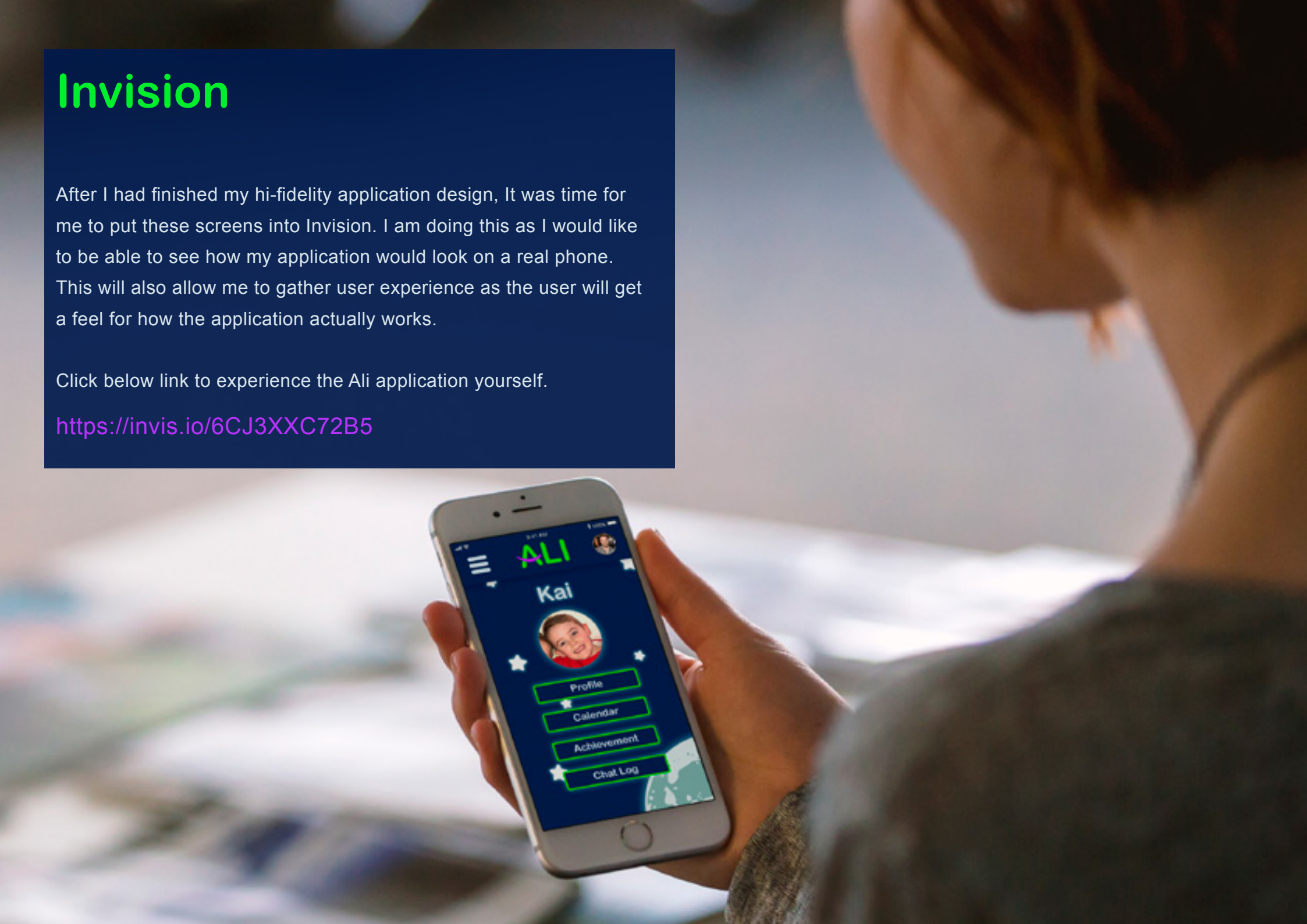


Invision

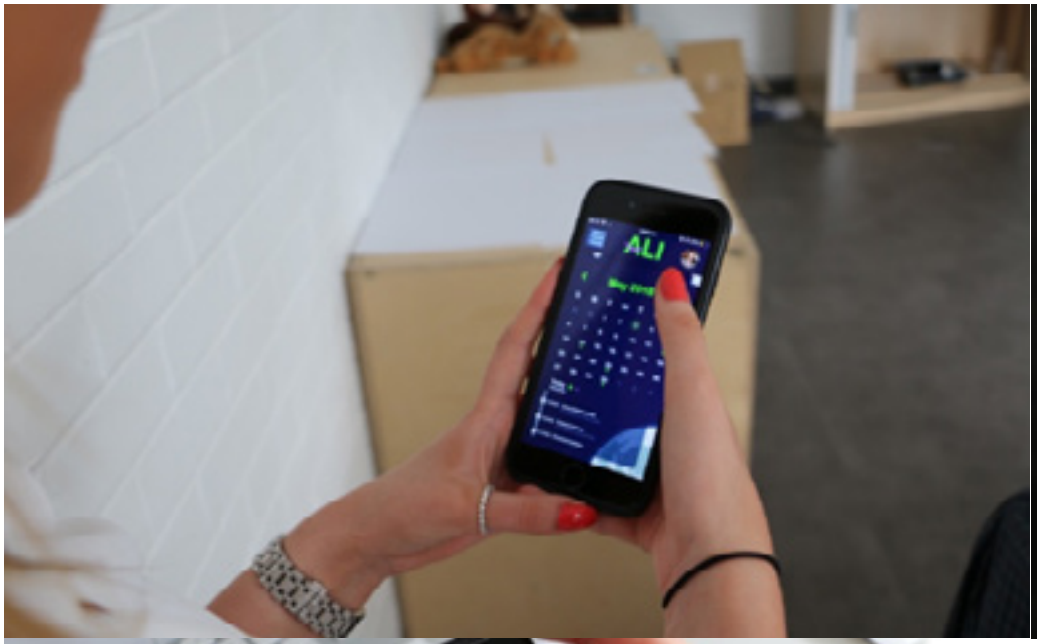
After I had finished my hi-fidelity application design, It was time for me to put these screens into Invision. I am doing this as I would like to be able to see how my application would look on a real phone. This will also allow me to gather user experience as the user will get a feel for how the application actually works.

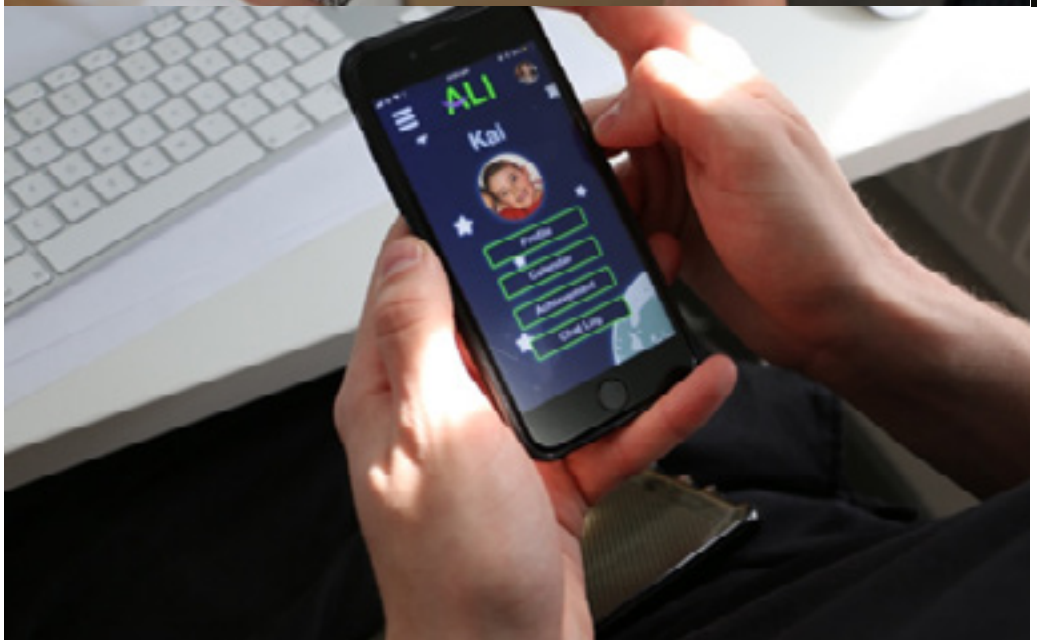
Click below link to experience the Ali application yourself.

https://invis.io/6CJ3XXC72B5



User testing

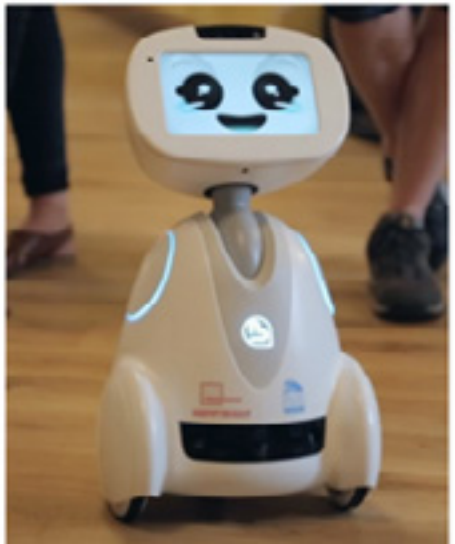


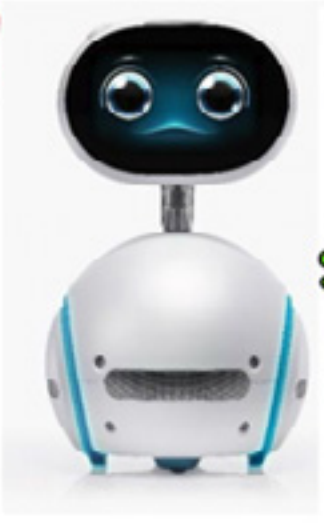


Once I had put my application through Invision and added in the transitions and added the hotspots to the application, I tried this out with numerous users to get an understanding of what they thought about the application. Doing this was helpful as they were able to tell me that the app is straightforward and easy to navigate. This is what I envisioned when I was creating the application.

PROTOTYPE DESIGN

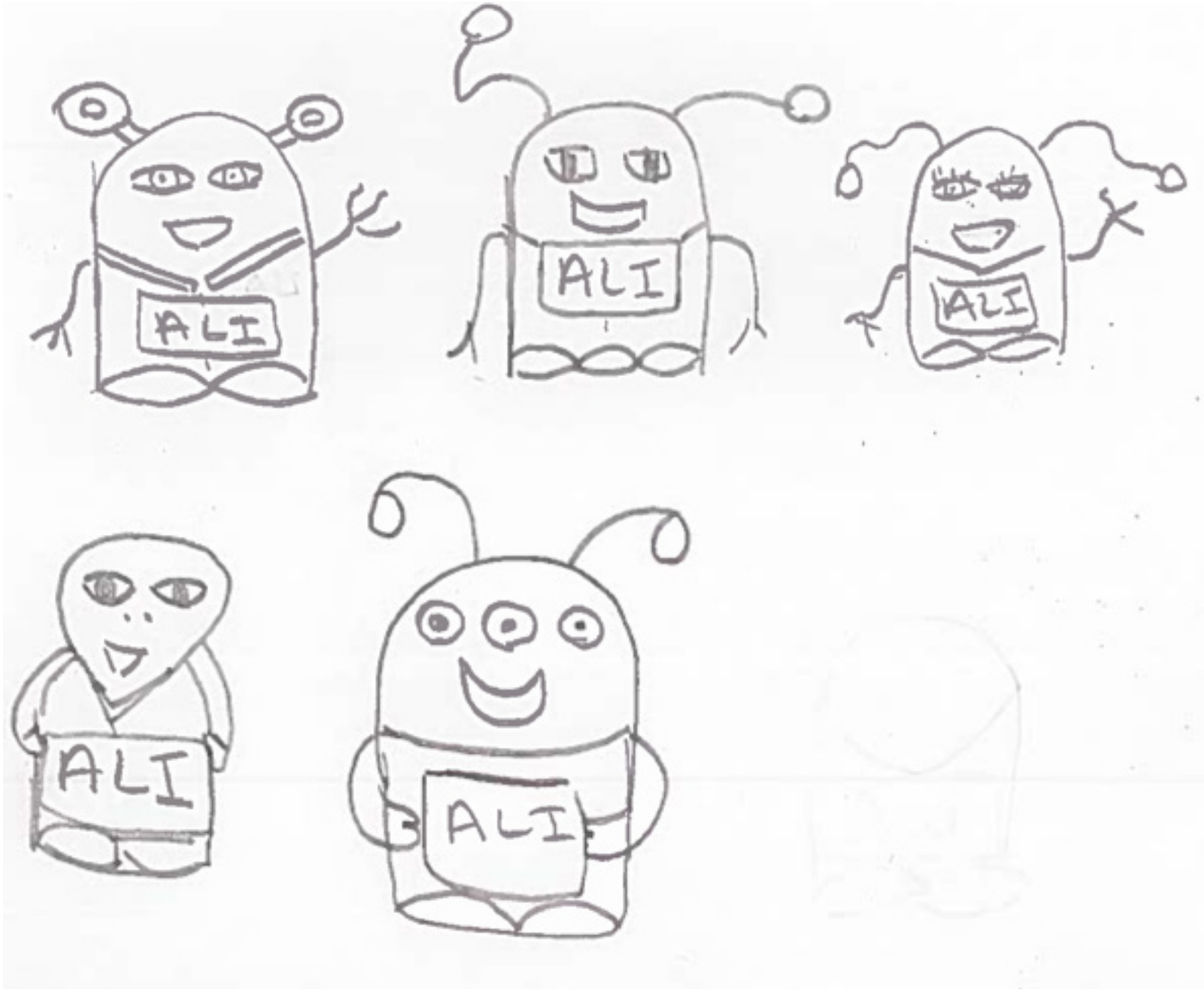
To come up with a child-friendly character I gathered some images that could help me with the prototype inspiration. As Ali would be an Alien I wanted the device to look cute and friendly.





Prototype Skecthes

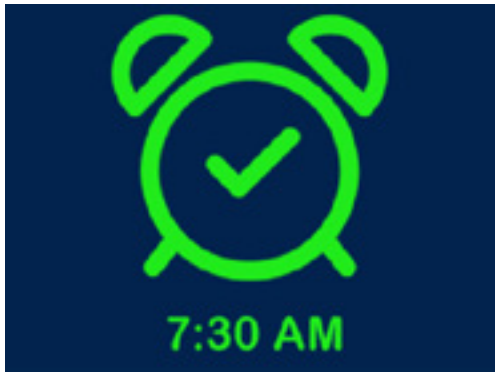
After I looked for inspiration and created my mood board for how I would like Ali to look. I decided to sketch some ideas that I envisioned how the physical model will look. I wanted this to be big enough to hold, although it should look cute and familiar to the users.

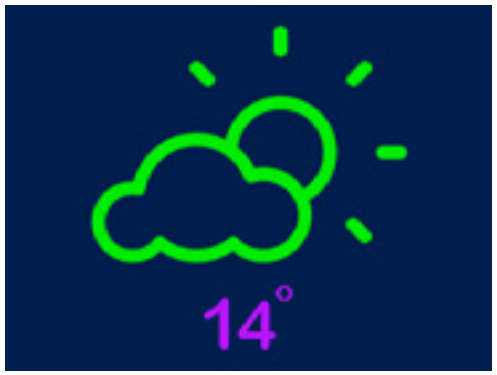


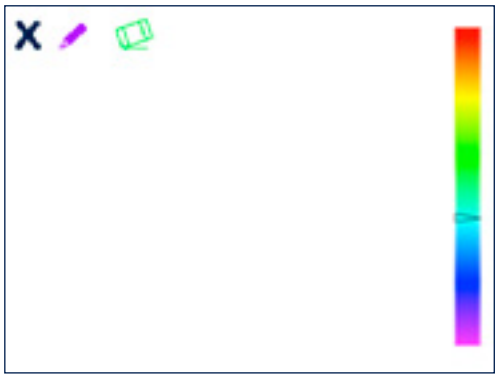
Digitised Ali

I digitised the sketch I liked the most and decided to try this out in different colours to see how Ali might look. As I would like the device to appeal to both girls and boys I wanted to ensure I pick a colour that will not alienate the other gender. I asked some of my peers which colour they liked most on Ali. My peers and I all swayed towards the purple colour as this looked the best for Ali. I decided to do abit more editing on Ali to make him look more 3D than flat. By adding shadows and highlights I was able to give the digitised Ali a more 3D look.

Prototype screens







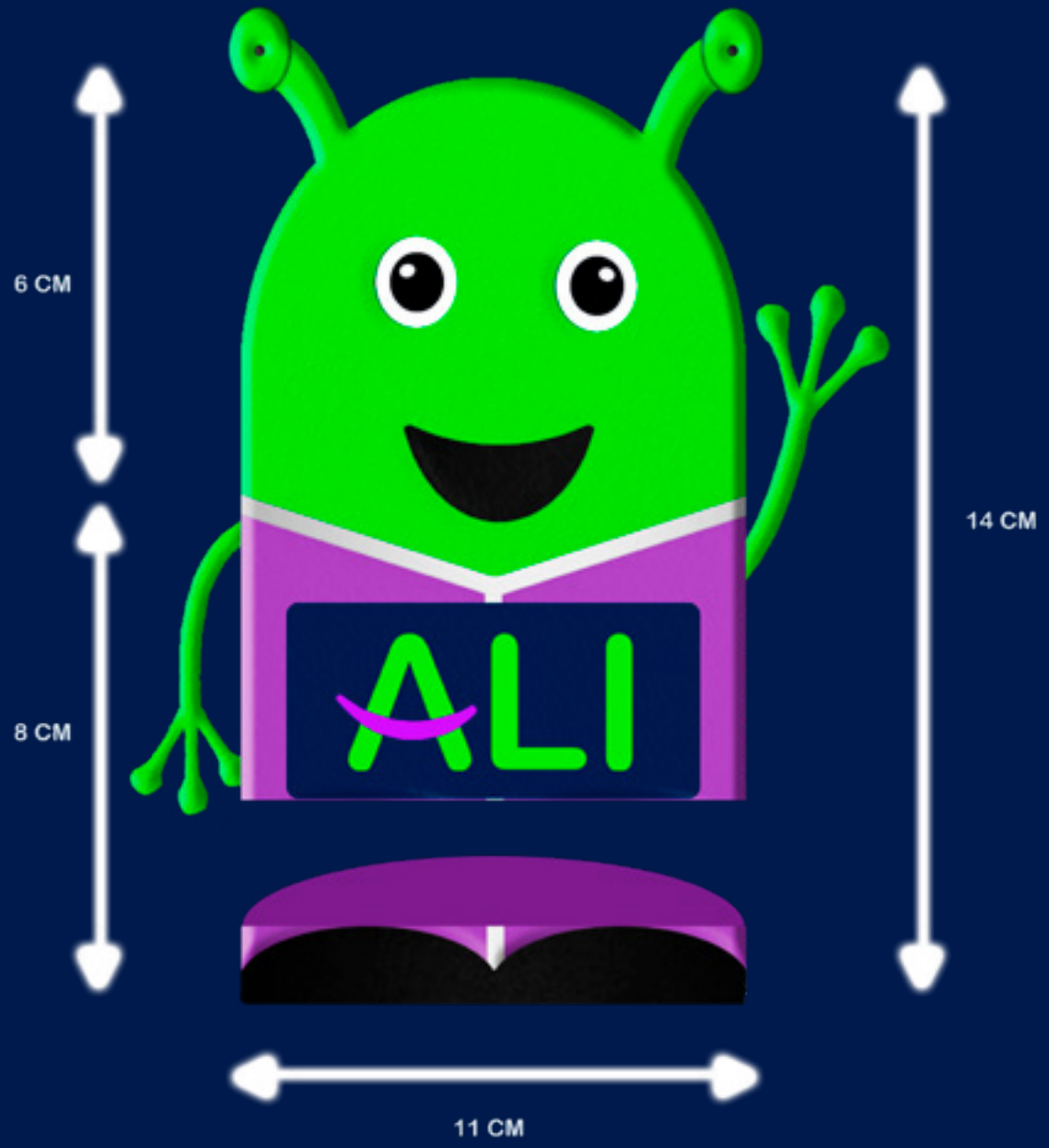
Once I had developed what I would like the physical device to look like, I started to think about the design of the accompanying screens that would be on the device. I wanted this to be a consistent style with the brand and the application.

Technology specifications

Connects to WiFi so that the device can be smart, and allows for updates. The WiFi also allows for the connection between the physical device and the application.

Uses a 2.8 inch LCD touchscreen Screen. This allows the child to interact with the screen for drawing, changing song etc. This also allows for the images/ videos to be shown.

Each ear contains 2 noise-canceling microphones. This is so Ali can hear commands even when the environment is noisy.



Voice recognition technology is built into the devices circuit board so that the device can communicate with the user.

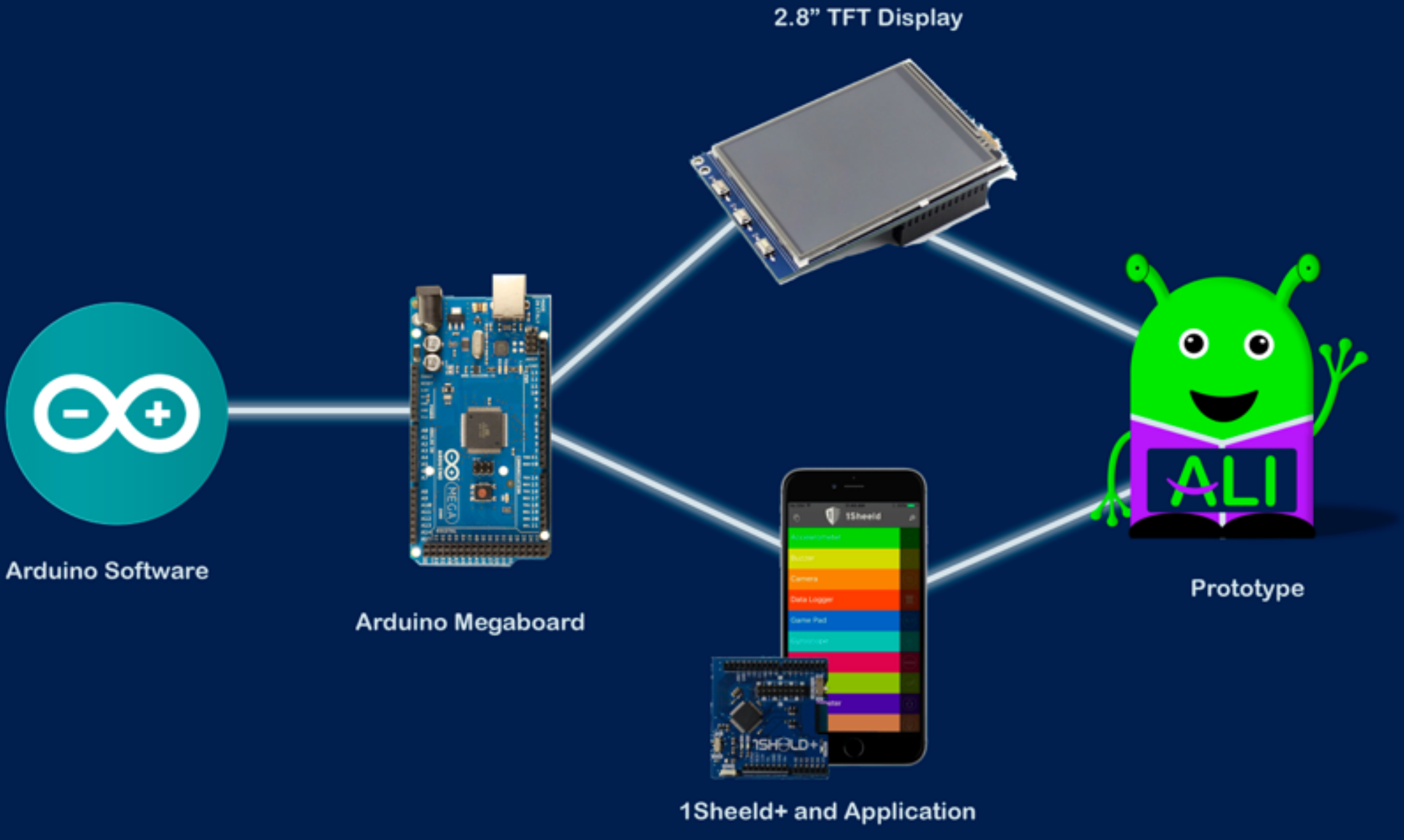
A built-in speaker allows for the Ali to give voice feedback and play audio.

Components

Too successfully make a working prototype for Ali, I decided that I would use an Arduino board to power the device, the 1Sheeld+ shield that would allow me to use the voice recognition and internet from my smartphone. I also bought a 2.8” TFT display that has touchscreen abilities.

I first tried to do this using two Arduino Uno boards to power the 1Sheeld+ and one for the display. However, as I will explain later in the document this was quite complicated and I switched to using an Arduino Megaboard to power both the display and the 1Sheeld+.

Components

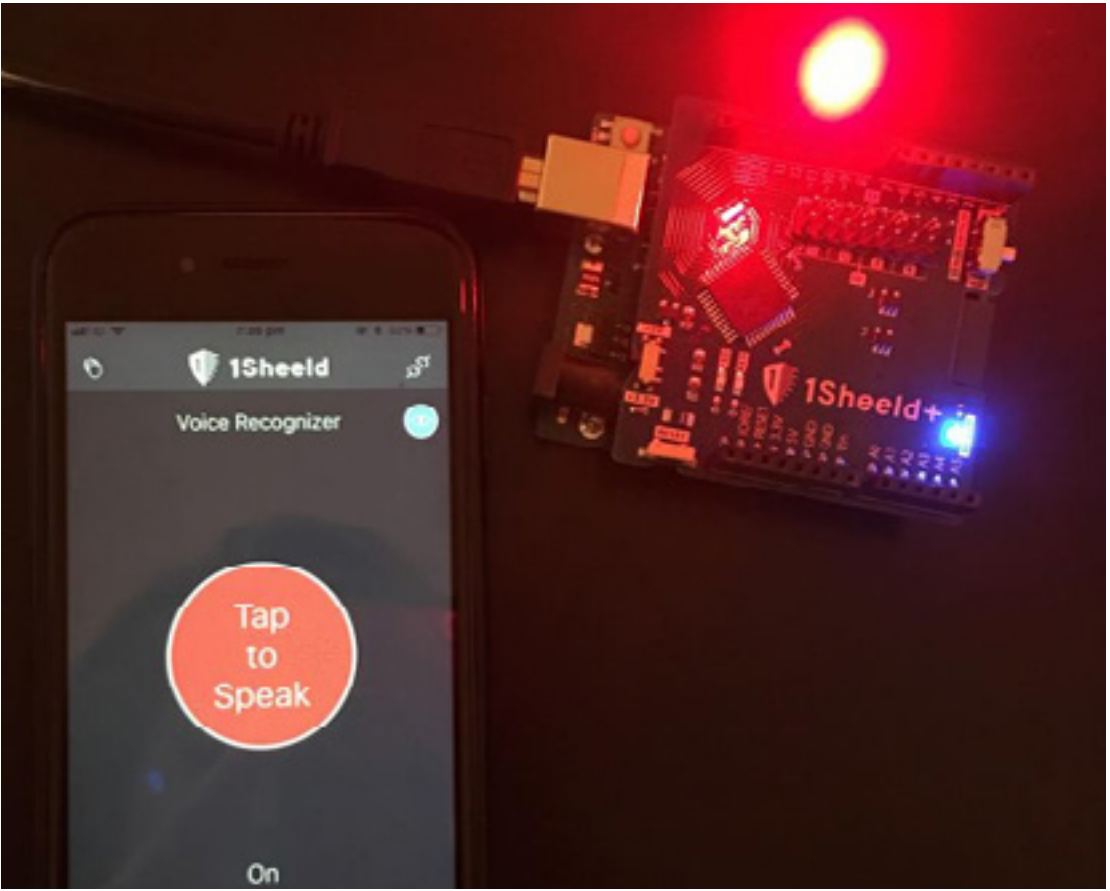

2.8” TFT Display
Arduino Software
Arduino Megaboard
1Sheeld+ and Application
Prototype
ALI

Testing the 1Sheeld+

Before testing the voice recognition with the 1Sheeld+ I needed to get more familiar with the tools and learn how it will work. Firstly, I tested the 1Sheeld to turn on an LED using the microphone on my smartphone. If the noise picked up by the microphone was above 50db the light will light up.

To do this I needed to attach the 1Sheeld to the Arduino board, mount the LED and connect it to my laptop via USB. After this, I need to use the Bluetooth on the 1Sheeld board to sync this to the mobile application. By using the necessary code I could light the LED on the Board by using the microphone on my smartphone.

```
void setup()
{
  /* Start Communication. */
  OneSheeld.begin();
  /* Error Commands handling. */
  VoiceRecognition.setOnError(error);

  VoiceRecognition.start();
  pinMode (led, OUTPUT);
}

void loop ()
{
  /* Check if new command received. */
  if(VoiceRecognition.isNewCommandReceived())
  {
    /* Compare the on command. */
    if(!strcmp(onCommand,VoiceRecognition.getLastCommand()))
    {
      /* turn on LED */
      digitalWrite(led, HIGH);
```



Testing Voice Recognition

After I successfully connected the components together I decided to test the voice recognition technology on the 1Sheeld to see if I could turn the control the LED by using the phrases “On” & “Off”.

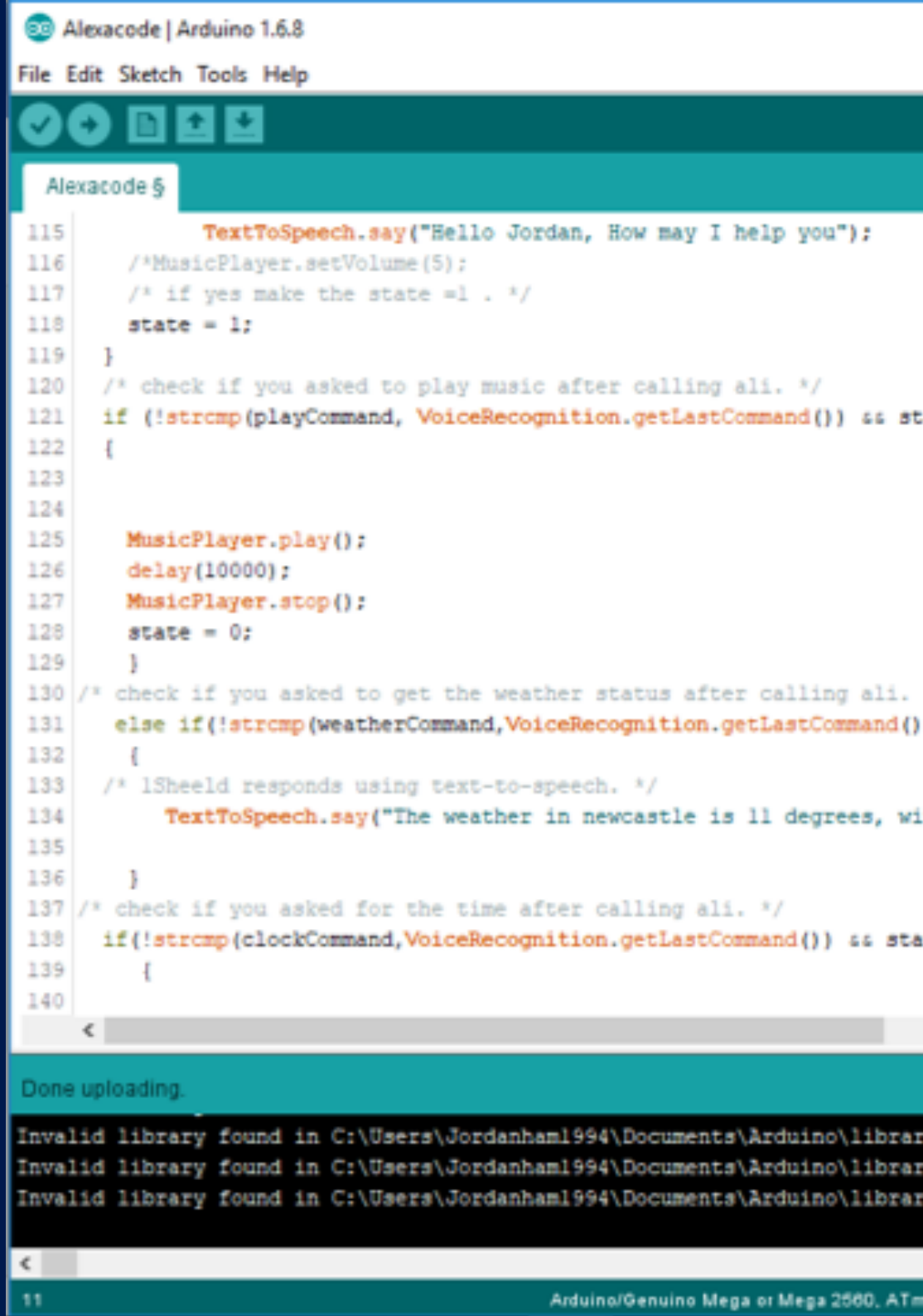
Whilst I was figuring out the voice recognition I tried to use the word “Ali” to wake the device however after looking for this online it was unsuccessful to find a way that this could work. However, I did not want to have to touch my phone every time I wanted to speak to Ali. By using the millis code I was able to make the device constantly listen instead of hitting the button to make this speak. By adding 5-second millis I was able to keep the voice detection continuous.

Text to speech shield

So that Ali can respond to the user I needed to add the text to speech shield to my project. By adding the text to speech shield will give the device a humanoid interaction experience. By using the code “TextToSpeech.say” this made this achievable. This allowed me to add Ali’s responses to the command and gives the device more of a natural conversing feel.

Testing Music player

As one of my devices functions was to play music as it will have a built-in speaker then why shouldn’t the device be able to play music from the phones libraries. By including the 1sheeld music player shield in the code and connect the shield to my phones music player.



Internet shield

I attempted to use the internet shield to allow me to get the exact whether and for Ali to pull information from the internet using API, however after some struggling and back and forth through forums. I decided that I did not need this exactly to work but just needed to demonstrate it as it was quick tricky. As the API would need to be uploaded every time I started up the device. I thought it would be best not to use the internet shield as it was making the device to tricky.

```
/* check if you asked to get the weather status after calling ali. */
  else if(!strcmp(weatherCommand,VoiceRecognition.getLastCommand())&& state == 1)
   {
 /* 1Sheeld responds using text-to-speech. */
      TextToSpeech.say("The weather in newcastle is 11 degrees, with some light showers"

   }
/* check if you asked for the time after calling ali. */
 if(!strcmp(clockCommand,VoiceRecognition.getLastCommand()) && state == 1)
    {


      /* 1Sheeld responds using text-to-speech. */
```

Clock shield

So that Ali can display accurate time and dates when being used I am using the clock shield from 1Sheeld. As the 1Sheeld uses the smartphones clock it was easy to set this up for the device to return the time in real time, the device can easily get the current time in my phone using this function: **Clock.queryDateAndTime();**

```
}
/* check if you asked for the time after calling ali. */
if(!strcmp(clockCommand,VoiceRecognition.getLastCommand()) && state == 1)
   {
     /* 1Sheeld responds using text-to-speech. */
     TextToSpeech.say("The Time is");
     delay(1300);
     TextToSpeech.say(b);
      delay(600);
      TextToSpeech.say(c);
       delay(800);
       TextToSpeech.say(noon);
       delay(500);
        state = 0;
   }
```

```
#include "XPT2046.h"

#define MAX_BMP         10                  // bmp file num
#define FILENAME_LEN    20                  // max file name leng


const int PIN_SD_CS = 5;                    // pin of sd card

const int __Gnbmp_height = 320;             // bmp hight
const int __Gnbmp_width  = 240;             // bmp width

unsigned char __Gnbmp_image_offset  = 0;    // offset

int __Gnfile_num = 4;                       // num of file

char __Gsbmp_files[4][FILENAME_LEN] =       // add file name here

"flower.bmp",
"tiger.bmp",
"tree.bmp",
"ali.bmp",
```

Testing the display

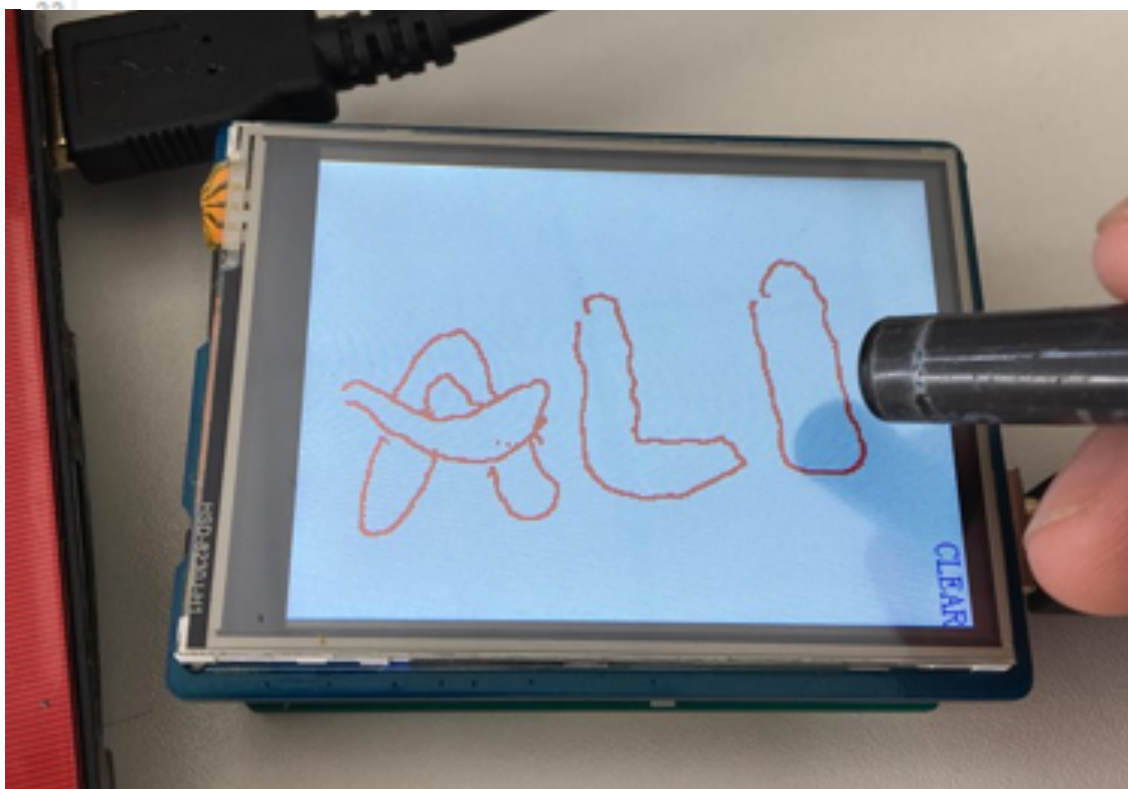
After getting the 1Sheeld+ to respond to commands, I then decided to look at how the touchscreen shield works. For this, I had to look through numerous tutorials to ensure I was using the touchscreen with the Arduino correctly. I was able to load the example images giving with the tutorial. I then edited the code so it would show my own images. I was able to display the Ali logo.

Testing touchpanel

Once I successfully got the screen to display images and was confident working with the TFT display I then turned my attention to getting the touchscreen to respond. For this I found the code to get the touchpanel to work. Once the touchpanel code was uploaded I need to calibrate the screen after the screen was calibrated I was able to use the display as a drawing pad.

TouchPanel §

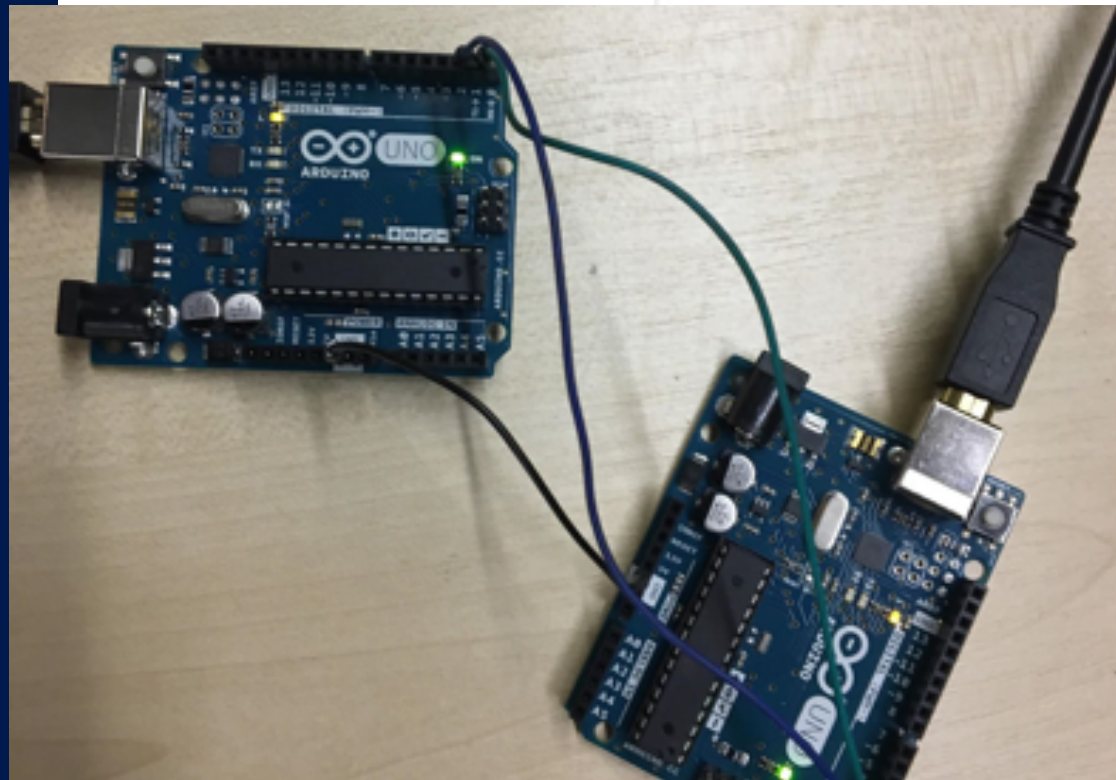
```
#include <LCD.h>
#include <SPI.h>
#include <XPT2046.h>
#include <Touch.h>

void setup()
{
    __SD_CS_DISABLE();

     SPI.setDataMode(SPI_MODE3);
     SPI.setBitOrder(MSBFIRST);
     SPI.setClockDivider(SPI_CLOCK_DIV4);
     SPI.begin();

     Tft.lcd_init();                                    // init TFT l
     Tp.tp_init();
     Tp.tp_adjust();
     Tp.tp_dialog();
}
```

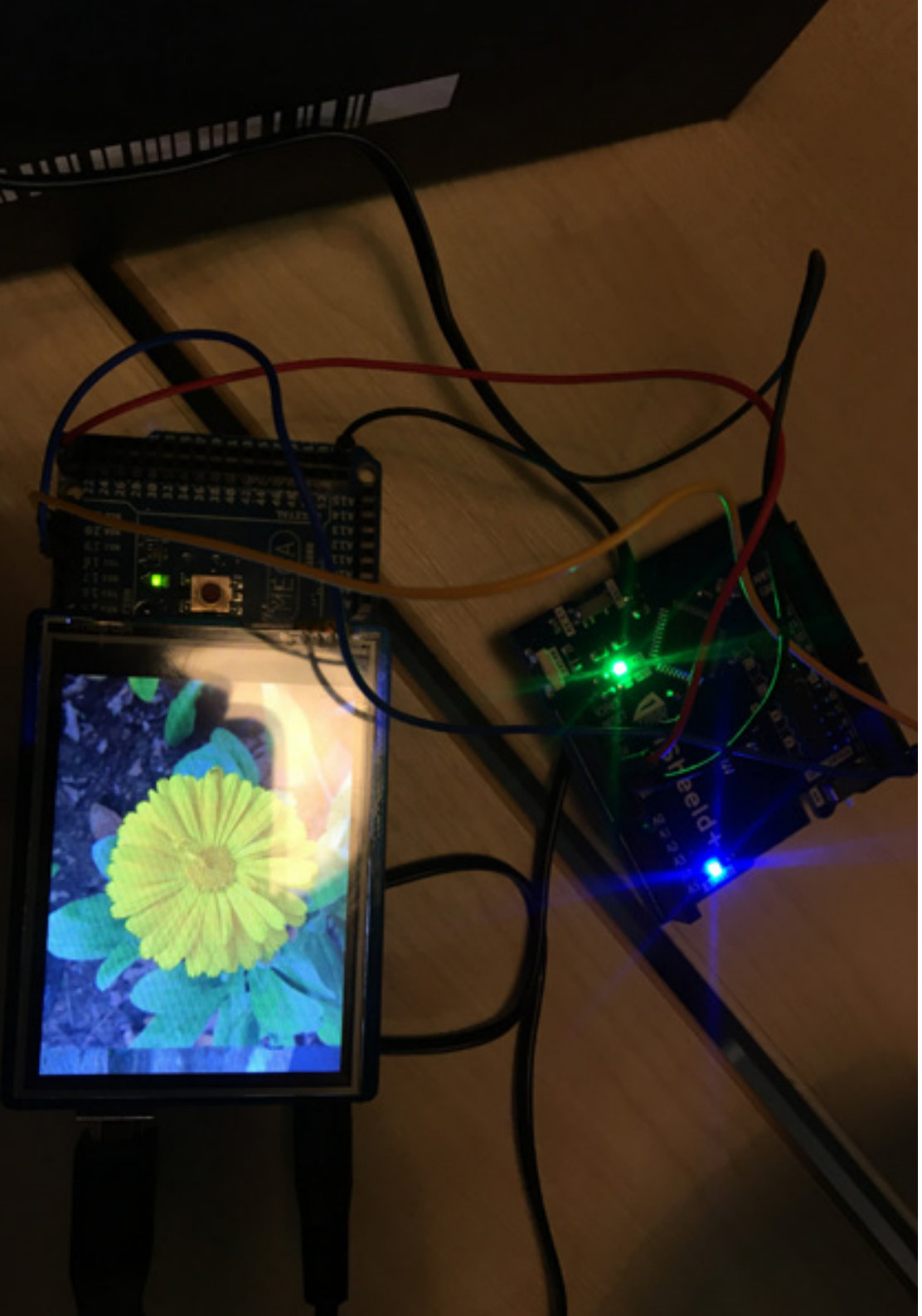


Uno boards serial communications testing

I was advised that the Arduino board may not be powerful enough to process both the board and the display. After I was able to get the other components of Ali working it was time to try and connect the two Arduino Uno boards so that I can use the boards to communicate to show specific images and commands.

To do this I needed to create code that would be sending data from one Arduino and successfully be picked up by the second board. I needed to create code that would allow the receiving board to receive and process the data from the first board. I was able to send Hello and Hello World successfully between the boards.





Using Arduino Megaboard

To keep the project easier I decided to research into if it was possible to use one Arduino board with the 1Sheeld+ on top then the display on top of the 1Sheeld. After looking through forums and having a conversation with a 1Sheeld specialist I was informed this would be possible. This made this easier as now I will only need to run one Arduino board and one set of code. However, at this point, I had the obstacle of thinking of a way that the Arduino board would hold the code needed for the project. I originally tried to upload some code to the Arduino Uno board that was too big. Instead, of trying to go back to the serial communication between two boards I was able to obtain an Arduino Mega board that should be able to hold the code. From this, I needed to combine the code for the voice recognition and the display.

I originally tried to have the 1sheeld on top of the Arduino mega then the display on top
of this. However, this would not run the display. But would run this if it was on the Uno, however, the sketch would be too big to upload to the Uno board. For this, I needed to work out what pins needed to be used to power the 1Sheeld. I connect the display directly on top of the Arduino Mega, I then needed to connect the free pins on the board to connect the 1Sheeld. By connecting the ground, 5v, Rx & Tx from the 1Sheeld to pins on the mega I was able to achieve getting the display and 1sheeld working simultaneously.

Combining code

Once I had the display and 1sheeld working together, the next thing was to combine the codes I have used to get Ali's programming working together. For this, I had to ensure I had the code in the correct places. By carefully reading through the code of the display and the code used for the 1sheeld I was able to successfully combine codes. This was quite tricky as two loops were trying to work at the same time. By changing the name to loop1 and loop2 and putting this within a void loop () I was able to get this working one after another. However some experimenting I was able to remove this two different loops and got the display to show when I ask the relevant commands.

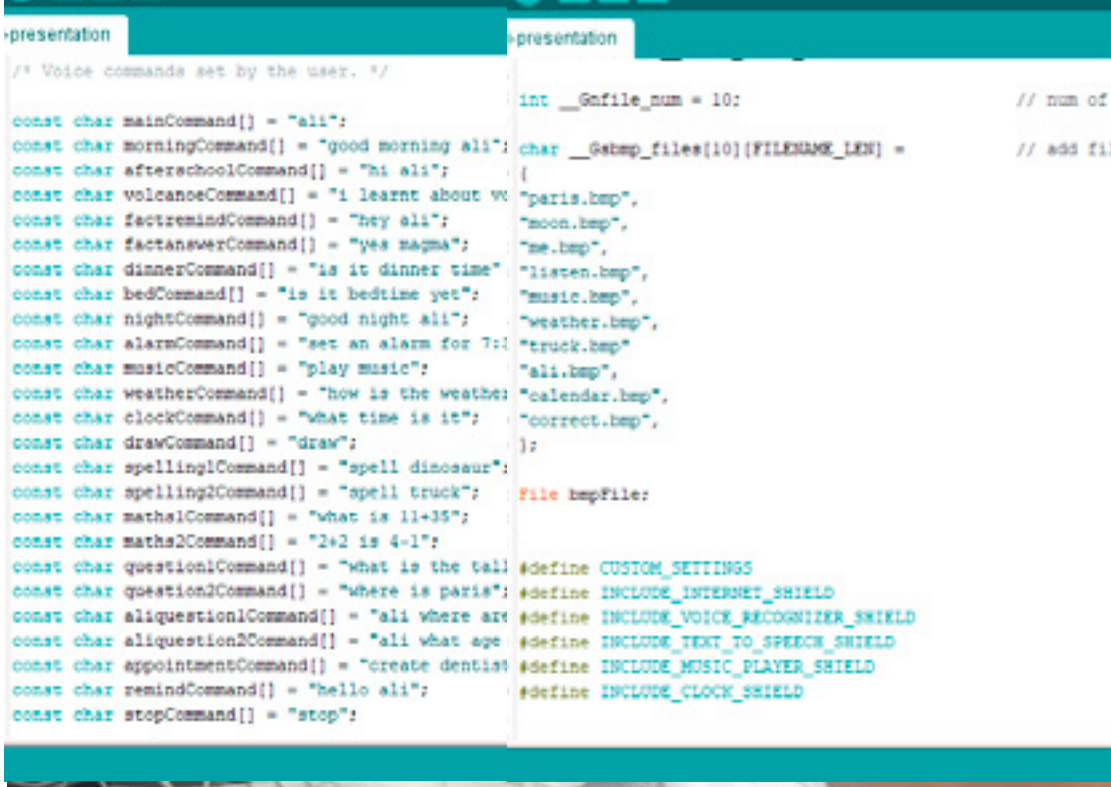
The Final code

After experimenting with Ali's hardware and software to make a friendly virtual assistant I was able to develop on the code that will allow the device to have many useful features to help with the learning for the user.

By adding a visual that shows that the device is listening when trigged this made it easy for the user to recognizing when the device is listening.

The final code allows the user to ask many different types of questions and make commands. The main commands are:

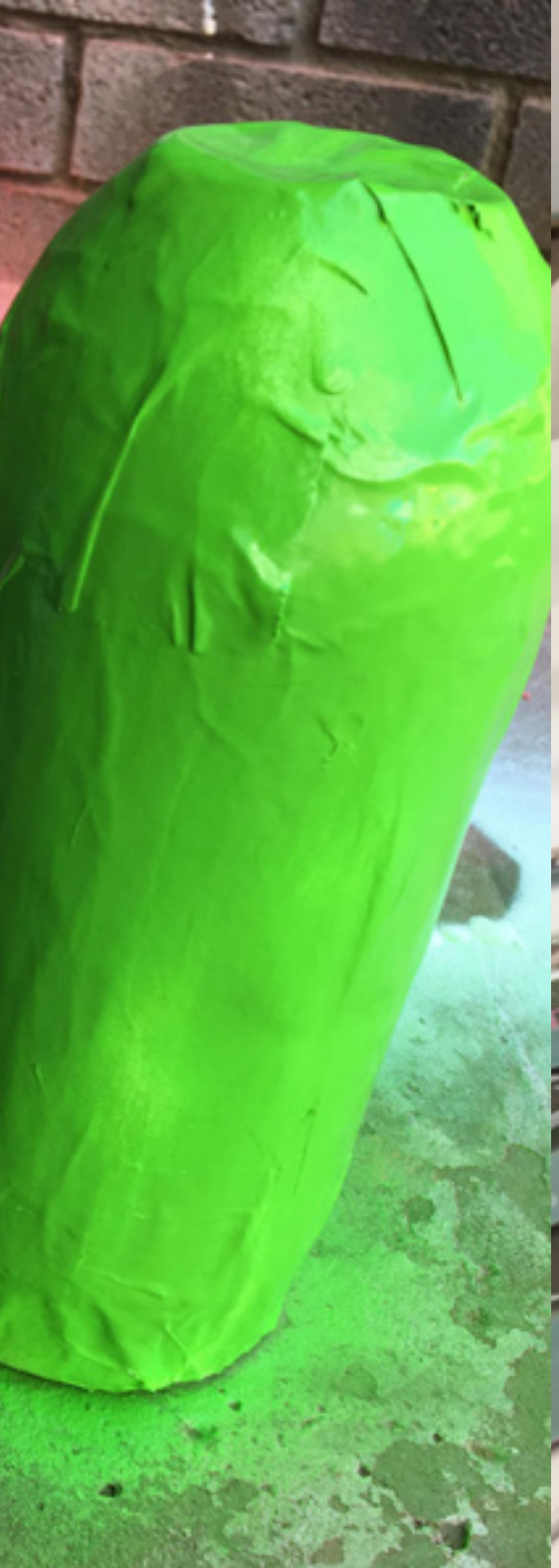
Ali - wakes the device
Good morning / good night - Responds appropriately to user
Personal assistant- Allows to ask time, weather and add events to the planner.
Music command- allows for music to played from Ali
Draw- Allows the screen to become a touchscreen drawing board. I have added this as children are familiar with touch screens and would automatically try to use the screen as a touchscreen.
Questions - English, Math's and general knowledge questions as well as having the ability to bring up a Map.



MAKING THE PROTOTYPE

First Prototype

This is how the first attempt at creating a case for Ali. I used a bottle and painted it with the brand colours. However, this didn't look professional enough and the paint flaked off from the bottle when I came back to it. I had to find a better alternative to this first attempt.

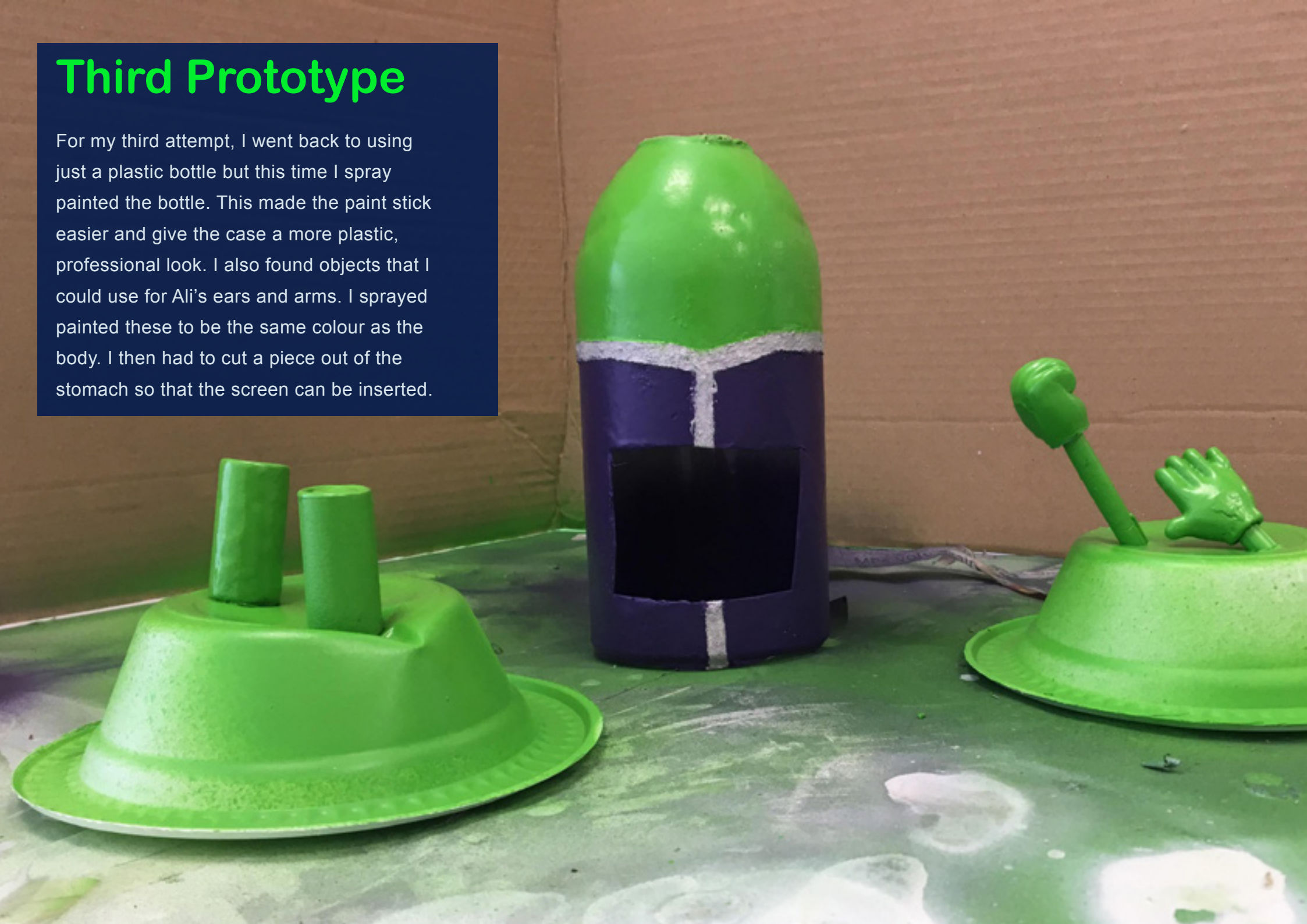


Second Prototype

For the second attempt, I decided that I would try this with paper mache as I wanted to still use a bottle but remove the neck. After this dried and put a white primer on it, I then spray painted it green. however, When it was dried I could see the overlay of the newspaper. I decided that I would do this over as I wanted the case to look like shiny plastic

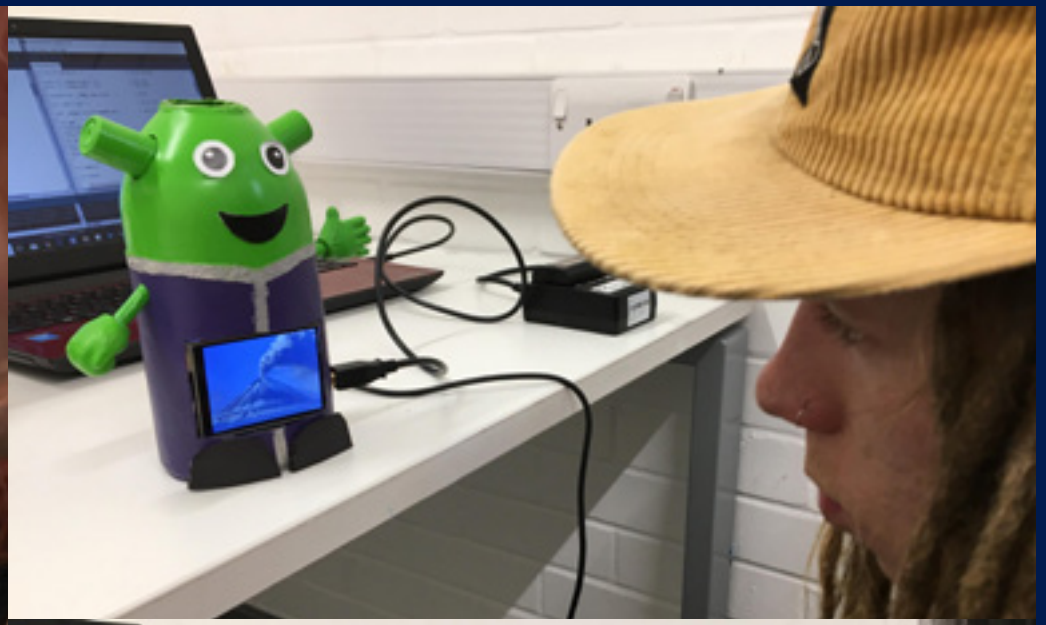
Third Prototype

For my third attempt, I went back to using just a plastic bottle but this time I spray painted the bottle. This made the paint stick easier and give the case a more plastic, professional look. I also found objects that I could use for Ali's ears and arms. I sprayed painted these to be the same colour as the body. I then had to cut a piece out of the stomach so that the screen can be inserted.

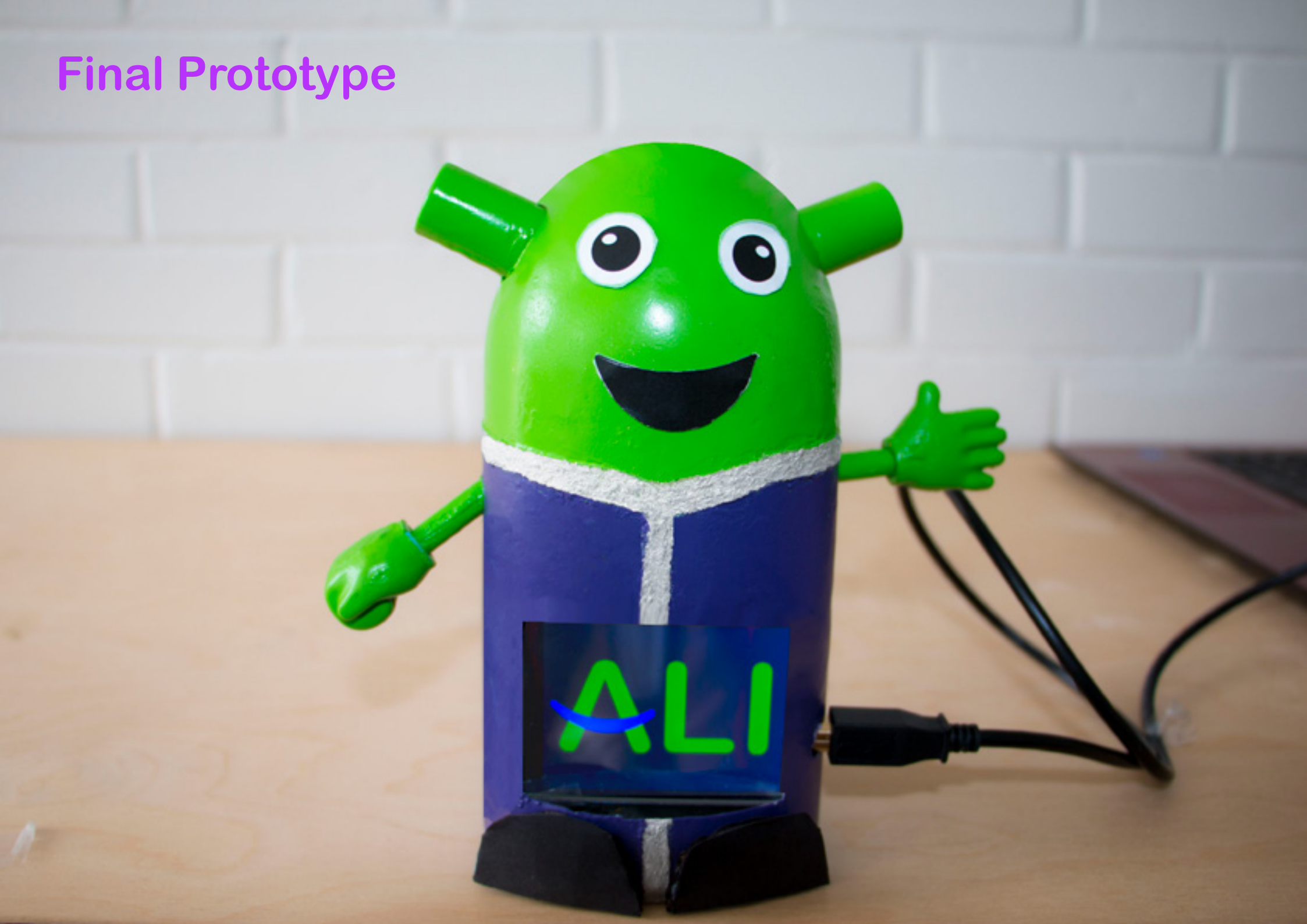


User testing

When I had the case completed I tested Ali with numerous people with different accents to see if Ali responded and understood. This was a success as it was able to understand and respond to everyone I tested.



Final Prototype




VIDEO

Video idea

For the promotional video for Ali, I did some research looking at similar products and now they have been advertised. Each advertisement I saw with a digital assistant the advert focuses mainly on the device rather than the background. I decided that I should incorporate this idea into my video.

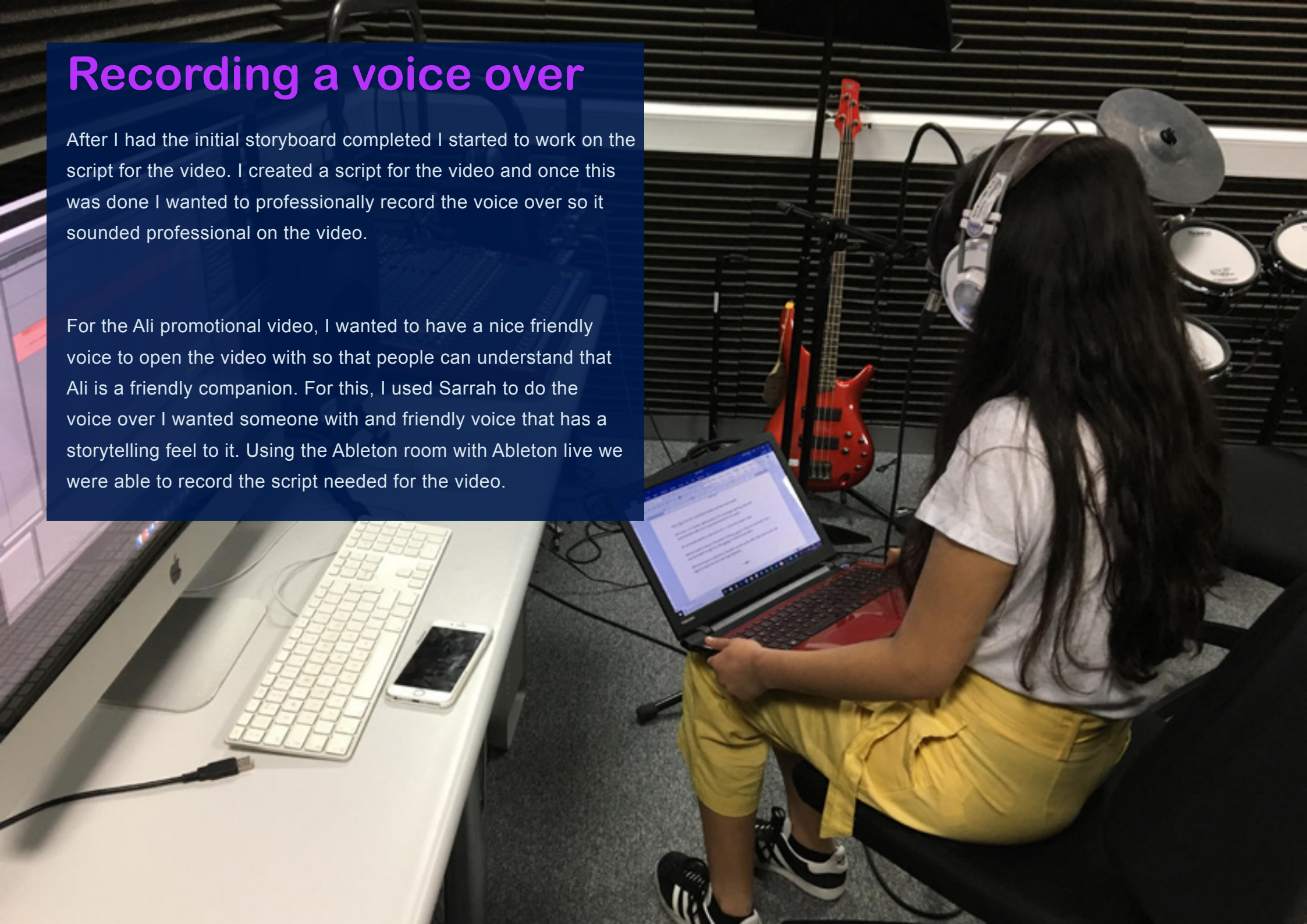
For my video, I decided that I would do “ A day in the life of Ali”. I think this would be the best way to do a promotional video for Ali as this will explain what Ali is and what it can do. However, as I won’t have the time to show all the features of Ali, I plan on using voice over to help me convey this.


ALI flies through space
goes to Earth
ALI
Your Alien Ally
gets closer
Answers Quite
New Room New voice
Parents Ask
Parent APP
ALI

Recording a voice over

After I had the initial storyboard completed I started to work on the script for the video. I created a script for the video and once this was done I wanted to professionally record the voice over so it sounded professional on the video.

For the Ali promotional video, I wanted to have a nice friendly voice to open the video with so that people can understand that Ali is a friendly companion. For this, I used Sarrah to do the voice over I wanted someone with and friendly voice that has a storytelling feel to it. Using the Ableton room with Ableton live we were able to record the script needed for the video.



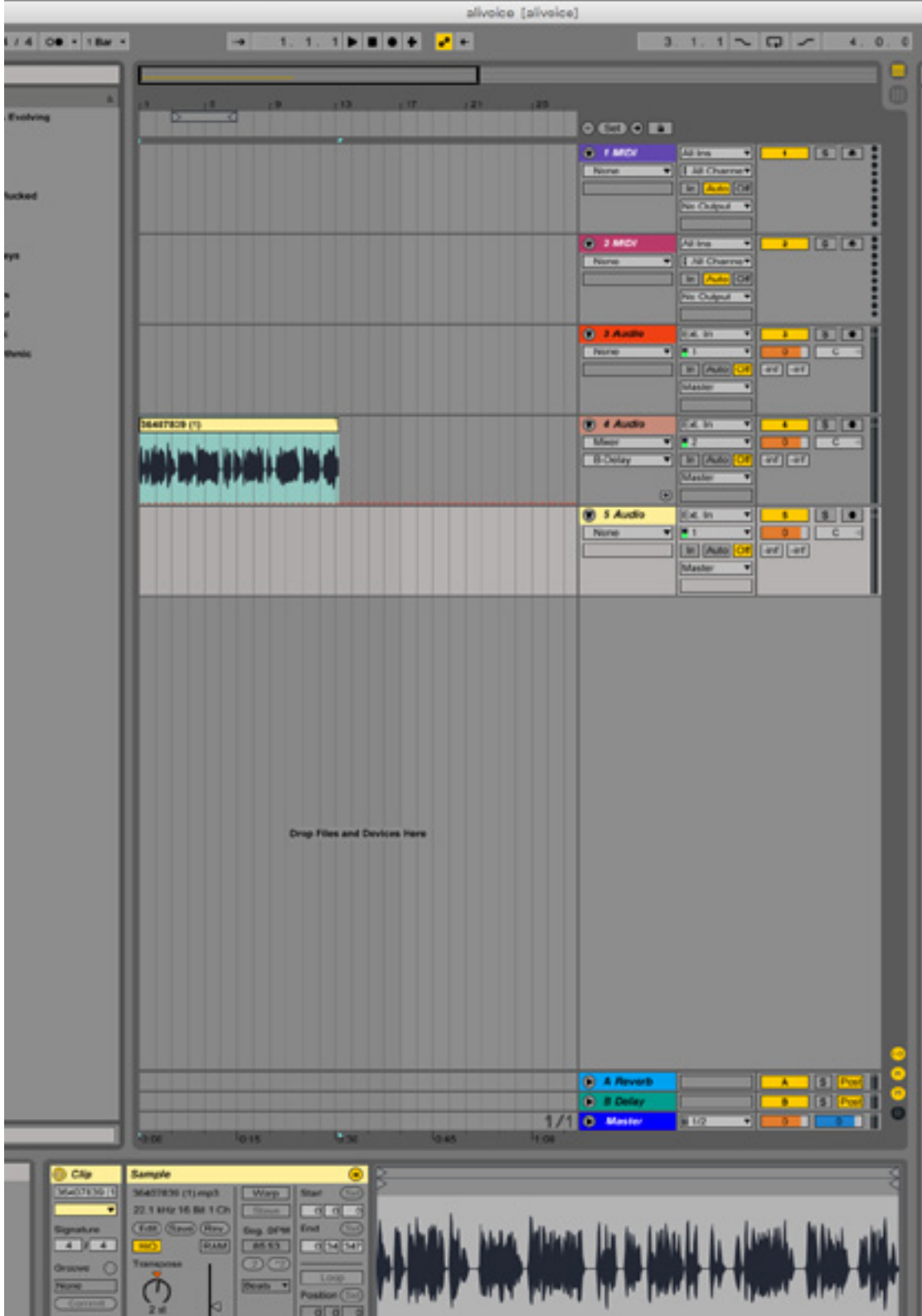
Sounds

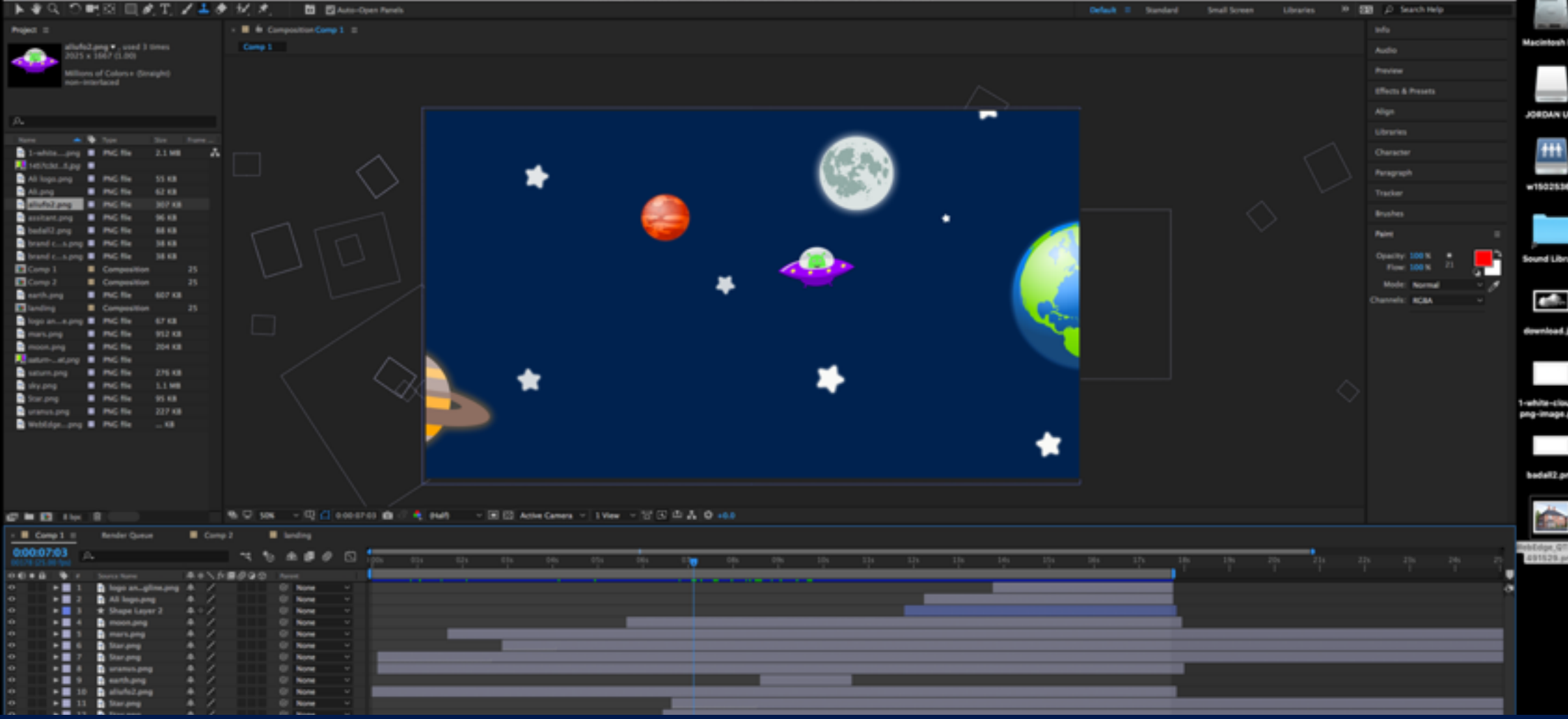
Ableton Live 9

The sound I used in the video is a track called playdate. When I was searching for music to use for the video I wanted a space-themed adventure sense to the music as this would fit perfectly with the story. When I found playdate it sounded perfect for what I was looking for, especially when I played it with my animations. The song fits in well as it is a childish friendly tune that sounds as if it would be used as an adventure theme song.

For Ali, I wanted him still to sound like a machine but have a pleasant tone to it. I used text to speech to get what I needed for my video. After this I needed to manipulate the voice using Ableton live as the voice I could find was for a human but I wanted an alien quality to the voice.

The voice used for children in the video are some relatives of mine. However, I wanted an age around 5-7 for the recording. However, I was not able to get a hold of any of this age for the girl's voice. I decided to use someone slightly older and by manipulating the pitch using Ableton I was able to achieve a younger sounding voice.



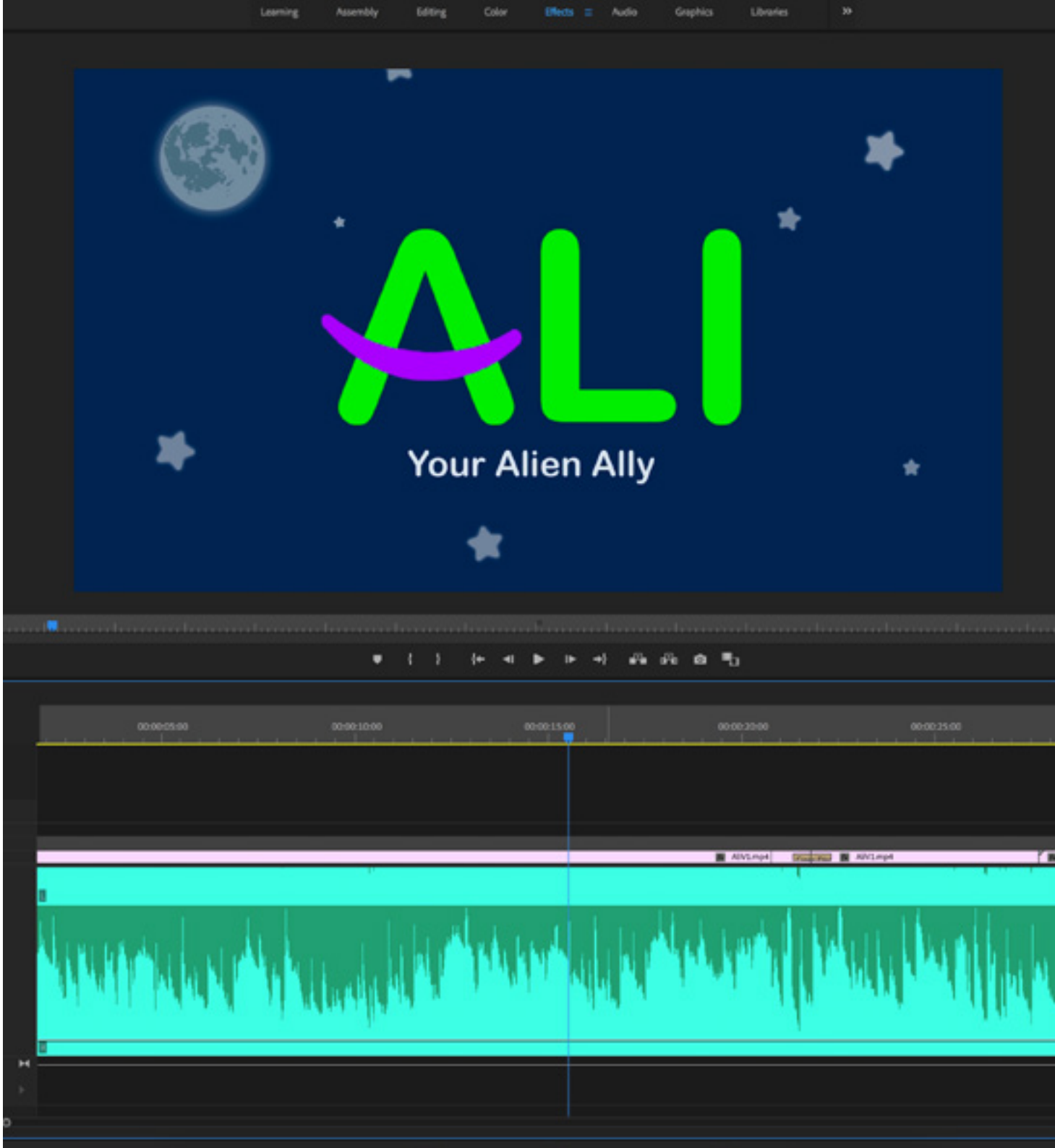


After Effects

The use of animation in my video was highly important for the storytelling of the video. I used After Effects to make an animated introduction to the story which shows the user a story of how Ali traveled to earth. I also used After Effects to animate the screens showing on Ali and for the application section of the video. I had to use After effects when compiling my video as I need to have the physical Ali sync with the background images for this I needed to use motion tracking that allowed me to place the physical device onto the video and move with the video giving a seamless feel to the video.

Premiere Pro

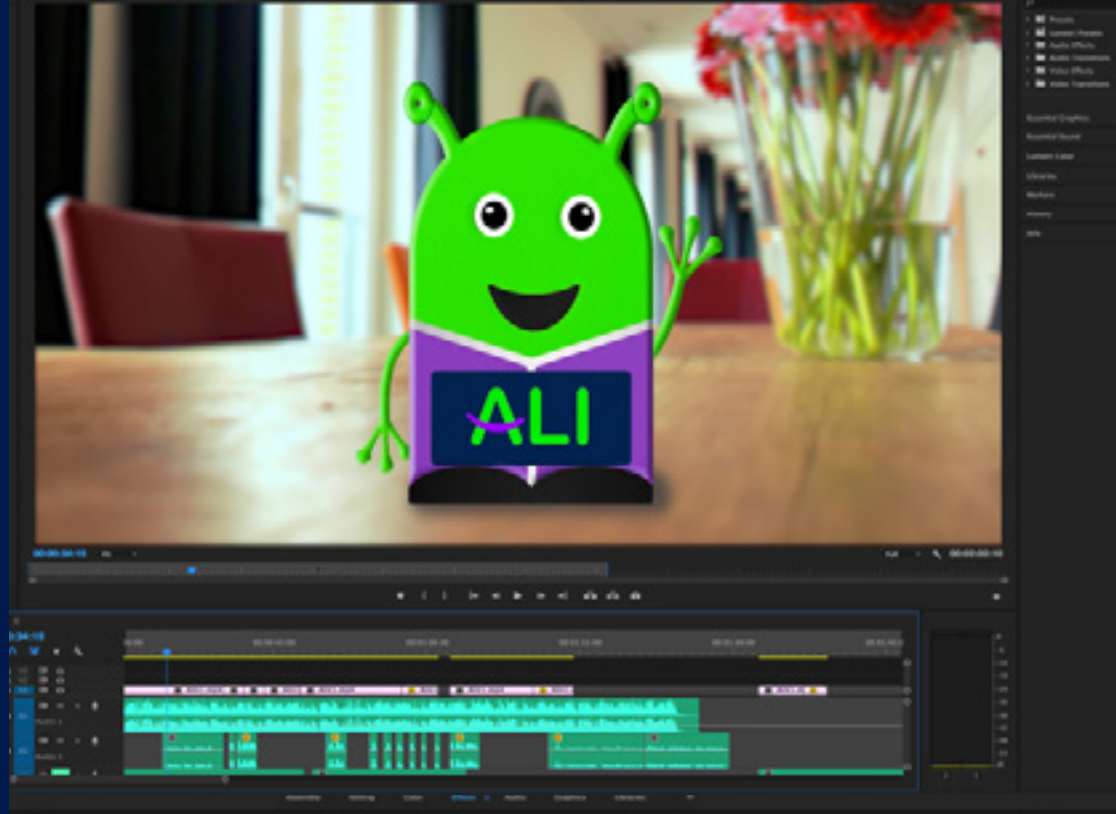
Now that I had all the elements for my video that I needed I could start composing this on Premiere Pro. Utilising the tools on Premiere Pro I was able to add video transitions and match my audio up with the visuals.



Video Design Decisions

Whilst working on the prototype video I had to make a design decision if I would use a rendered image of Ali or to use the actual prototype. I liked the rendered image as it was clean slick and could be manipulated easy. However, this looked too 2d. I decided that get some advice and feedback from numerous lecturers and peers. The majority choose the real prototype as this looked more real and not so flat in the video. I decided that the real prototype being used in the video would give it a more realistic feel to it.

Another decision I had to make when creating my promotional video was that I originally had Ali motion tracking with the background footage. However, after watching this and the animations coming up for the screens this seemed a bit much as the viewer's eyes would not know whether they needed to look at Ali or focus on the background. I decided so that the viewers would concentrate more on Ali that the background should be still images. This design decision was quite useful as it made the video look more professional and focused more on Ali than what was going on in the background. Having still images also allowed the timing with sound better as I wasn't having to speed up or slow down certain scenes to fit suitably with the video.

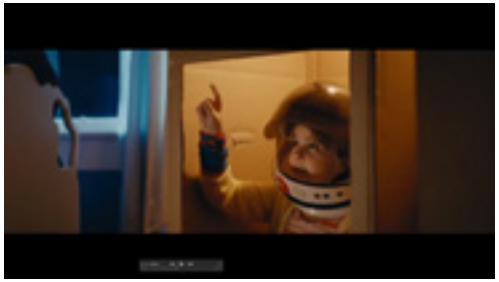


Sourced Elements

https://www.youtube.com/watch?v=c14W24XPCt0

https://www.youtube.com/watch?v=5bYSX2C4aWc

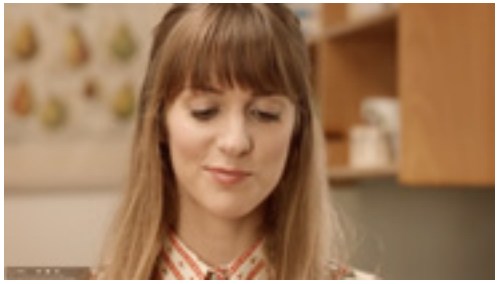
https://www.youtube.com/watch?v=PVgFBcjBpMY



https://www.youtube.com/watch?v=6kK6k3eohqA

http://www.qth.co.uk/wellingtoncourt/

https://videos.pexels.com/videos/painting-and-drawing-857115



https://www.youtube.com/watch?v=BmrDj-I3wDA

http://www.purple-planet.com/upbeat/4593380163


ALI
9:41 AM
100%
ALI
Your Alien Ally
ALI

EVALUATION

User Feedback

I posted the Ali Promotional video on facebook asking for user feedback. I was particularly interested in the users that were the target audience so parents with young children. I was very happy with the feedback I received as the concept was well communicated within the video and everyone understood what Ali's features and aims where. people also liked the aesthetics of Ali which was a relief as this was something I struggled with when making the prototype. Although, there were some comments regarding Ali's voice, other than this I am delighted with the response I had received for Ali and the Promotional video.

"Love it..great for learning. I would love this for my two grandchildren when they come to visit."

- Sarah, grandmother

"I think this is very good, a great product actually that parents can monitor with the app, which means that parents can stay in control of what the child is learning and experiencing. I'd maybe say make Ali in different colours."

- David, business graduate

"I have actually been looking forward to seeing this since you told me about it! I would love it for Ryan he is always trying to use our Alexa but I am wary of what information that he could get from the device without me knowning"

- Jenna, mother of 2

"Very well communicated, visually engaging, well targeted. Love the design of Ali - I feel as if this is very appealing to children. Further development.. Ali's voice?"

- Greta, design consultant

"I think this is a great product to progress children's learning and general knowledge and love the fact that parents can control Ali from an app. It also gets parents involved in their learning, which is great. It has the potential to develop further by adding additional features and maybe more colours for the market it would be sold to."

- Kirsty, Primary school teacher

Evaluation

Research

From the outset of this project, I have been continuously researching to try to get a better understanding of digital assistants, the technology needed, and how children interact with technology. I was fortunate to find a gap in the market for such a unique concept like Ali. I am happy with the research that had gone into this project as I was able to establish a good understanding of how children use technology by utilizing a survey, by looking at competitors I was able to refine my idea and make it different from what is already offered on the market. By researching technology, I was able to gather important information about the technology already out there and find out the best way to create my prototype. The research made it easier to market Ali because I understood what the parents were looking for in smart devices and what they were concerned about. By focusing on abolishing the concerns I think I have made Ali a strong and feasible concept to help children learn.

Branding

I am thrilled with the branding of Ali. I am happy with the name and logo I came up with for this device as it meets the purpose of the concept. By using the brand colours on a child-friendly logo I think that this is up to a professional standard. I have kept the design consistent throughout this project and really enjoyed putting this together. Using vibrant colours and a rounded text font I believe that this will be appealing to the target audience. I particularly liked the name that I came up with as it has numerous reasons why the concept is named Ali and it corresponds well with aim of the project.

Ali mobile application

One of the main consideration I had when creating the mobile application was to make it usable, clear and easy to navigate for the parents. The colour scheme and visuals used throughout the project was reflected when it came to designing the application. I am delighted with how well the aesthetics had turned out for the mobile application. It works well with the brand and is kept simple (only shows what it needs to). It was important for me to gather user feedback when designing the application because it allowed me to find out if my ideas were coming across in the application. As people were able to mostly understand the wireframes I only had to make a handful of adjustments when this came to developing the hi-fidelity versions. By adding in the onboarding process to the application it guides the user on how to set up Ali and what they can expect from the physical device. As my project mainly focused on the physcial device, I did not feel the urgent need to create every page for the application, instead, I created the pages that the parents would use the most. If I had more time I would willingly develop more screens so this had a fully professional finish.

Ali - Physcial device

One of the main issues I had when doing this project was the creation of the physical device. Firstly, I started off this project with little knowledge on how to use Arduino and the software. This was quite difficult to get my head around mainly due to the tutorials I was following were incorrect. After speaking with Tommy he was able to guide me in a better direction and help me understand the coding of Arduino a lot more. I also visited Makerspace numerous times during the project as they were really helpful when it came to asking questions about developing the device. One pain point I had in this project was how I was going to get the 1Sheeld+ and Display working from one Arduino, I was advised that serial communications between two boards would be my best option. However, after I got this working I was speaking to a specialist who said the components can run off one board. Although, learning to communicate two boards wasn't relevant to the project this took up a number of days which at first wasn't happy about. having some time to reflect on this although it wasn't relevant it did help me understand how to code better on using Arduino. After I was delighted when I finally got all the components to work together as this took a lot of time and effort. Another problem I faced with the physical device was due to my strong Northern Irish accent the device couldn't understand me

the majority of the time. However, after slowing myself down and speaking more clearer I was able to overcome this obstacle.

After I had the components working together and could get it to understand me, I thought the rest of the physical device would be easy. This is I was mistaken. Creating the case for Ali was probably one of the most difficult tasks I had in this project. This was due to I never had to make a prototype before and I had a specific idea in my head how I would like it to look. I am quite a perfectionist when it comes to my ideas and I couldn't communicate this to the physical device. After creating as few devices that didn't look up to scratch this started to become frustrating to me. Speaking with John he made me understand that I am not a 3D designer so I will not create exactly what I was looking for. This took some stress away from trying to make the device how I imagined. I deiced to take his advice on how to build the prototype and this turned out to be really helpful as I was able to develop the device to a good standard, this was communicated back to me by a number of peers and users. I was pleased that the device I produced was receiving good feedback and that it would be something a child would enjoy as I wasn't confident that the device I produced was up to a professional standard.

The most straightforward part of the physical device was creating the screens that were to be displayed on Ali. This was quite easy as I had already designed the brand and it was just a matter of communicating this on the screen. I believe the visual and design of the screen are consistent to the brand an work well when seen on the physical device. Although creating the physical came with hindrances I did enjoy learning about the prototype and enjoyed crafting this together. Once I heard that people like the design of Ali this made me confident that the device was designed to a good standard.

Ali Promotional Video

I believe that the video I created for Ali is communicated well and this has been communicated back to me by the feedback I received. The video is well put together which makes this concept seem like it is feasible and could be a device that could be introduced to family homes.

I would have liked to be able to use my own footage for children using the device, however, as I live away from home I do not have the access to the target audience I would have hoped for. If I had more time I would have liked to recorder actual children using my device rather than what was in the video. However, saying this the found footage works quite well as it seems as if the children as using the device.

Another improvement I would have for the video is that the voice of Ali isn't what I imagined. I imagined this to be a young boys voice that would be clear and have a slight alien twist to it (maybe a small reverb to give it a slight echo). However, as I still wanted Ali to sound like a machine this was quite difficult to find. I had to use an adult virtual assistants voice and manipulate it to make it how it sounds in the video. Although, it's not perfect it still communicates the commands well in the video.

Overall

I m really happy how this project has turned out as I put a lot of time and effort designing, experimenting and building Ali. Although there were some parts that were quite difficult, I am pleased how I was able to overcome the obstacles and grow as a designer. I would have liked to user test this with the target audience but as I am never around children I was unable to do this. If I was to do this all over again it would be a lot more simple as now I know how to use Arduino and the correct materials/ tools for building prototypes.

Further Development

As this project has different components there is always potential to develop Ali to include more features.

One of the ideas I pitched regarding Ali was that the screen could have the ability to cast to tv screens. I think this would be a good future development as the children will be able to cast their videos and drawing board to a bigger screen. The ability to cast could also open up more features like interactive games. For example, there could be a story on the Tv screen and the child has to select the correct answer on Ali's screen to continue or to create a new story.

I would have liked to incorporate costumes and more styles to Ali so that the child could have a preference for how the device should look. This could also make the device suitable for a larger target audience. Right now it is targeted a 3 - 8-year-olds but by adding this design development we could expand the user base by up to 2 years.

Developing Ali for an older demographic in general could be a potential future development as there could be a teenage device that has fewer restrictions and is able to give more information as the user can understand more.