

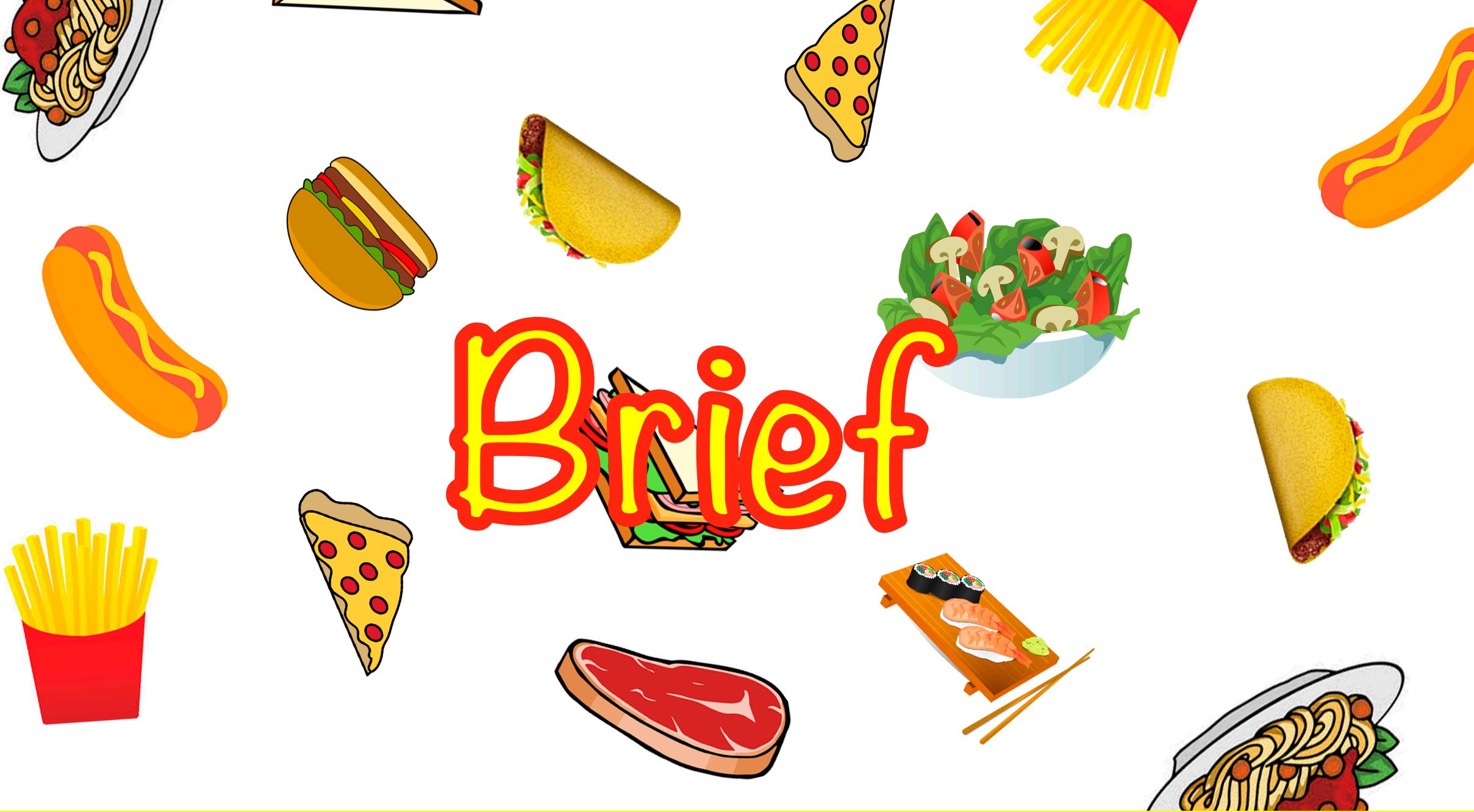
# restARant rush

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# Brief



# Brief

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Investigate what is happening on the cutting edge of your chosen technology. Who is doing what, how and why? What software/hardware is currently available and what are the strengths and weaknesses of competing products. What developments are just around the corner? How has technology changed your chosen area of research and the people who work within it? You are required to predict where your chosen technology may be going, be able to suggest new and innovative ways that your technology could potentially be used, and design a prototype to demonstrate your concept.

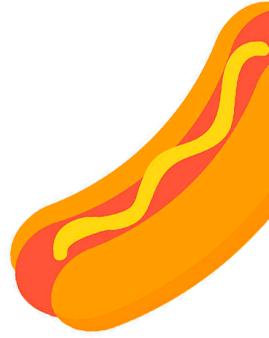
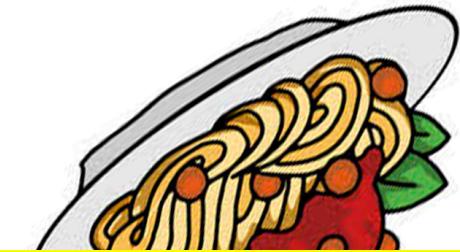
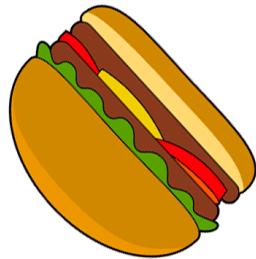
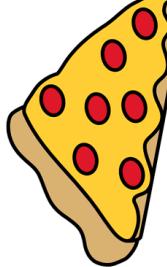
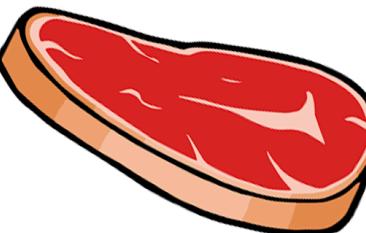
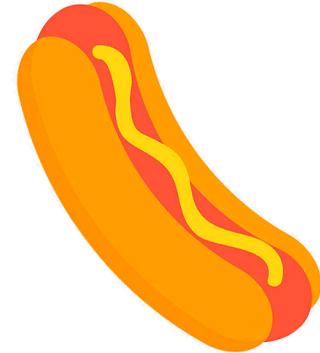
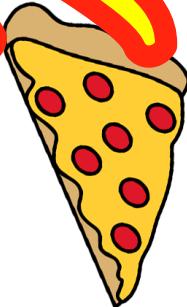
The student will research cutting edge technology in an area to be agreed with the tutors and from its findings generate three concepts which could potentially enhance the existing technology and extend the boundaries of currently available technology. Assessment will be by research document, presentation and prototype.

# Analyzing brief

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- Investigate what is happening on the cutting edge of a chosen technology.
- Competitor research of who is doing what, how and why?
  - Find out the strength and weaknesses of their products
- Find out what software and hardware is currently available.
- Investigate what developments are around the corner.

# Research





# Cutting edge technology

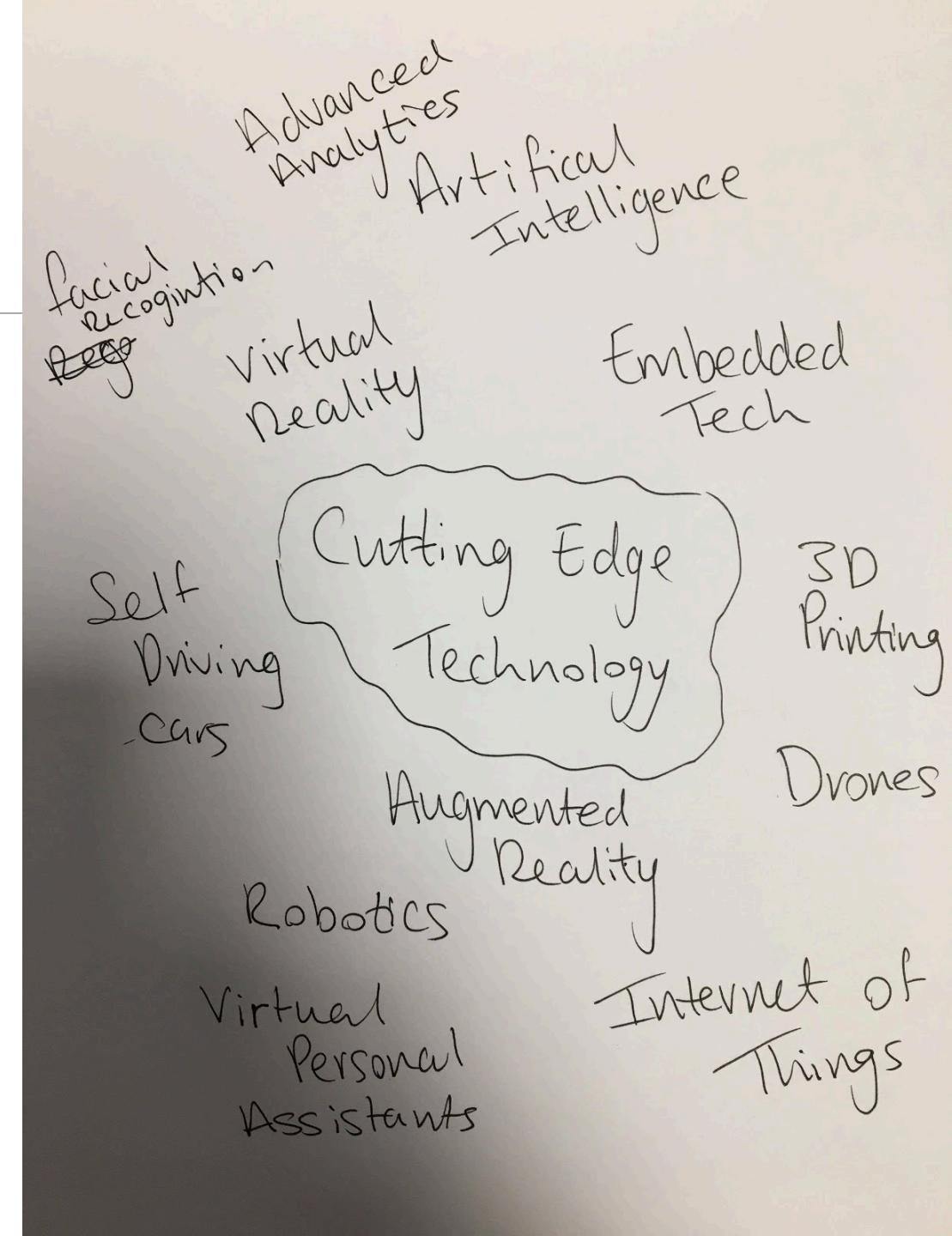
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Over the last decade technology has advanced at a remarkable rate. Technology is becoming more intelligent and this is allowing for new innovative technologies to be invented.

# Concept Generation

Before I began idea generating for this project I thought it would be helpful to get a better understanding of what technology is already available and look at what technology is just around the corner.

I made a mind map of the cutting edge technologies that are already available. I would like to try and use some of these in my project as I believe this is the most interesting and innovative technology that is currently on the market.





# Augmented reality

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Augmented reality (AR) - Augmented reality is the integration of digital media within the user's real life environment. Using smart devices the user is able to use their camera and screen to overlay digital media directly to an existing environment.

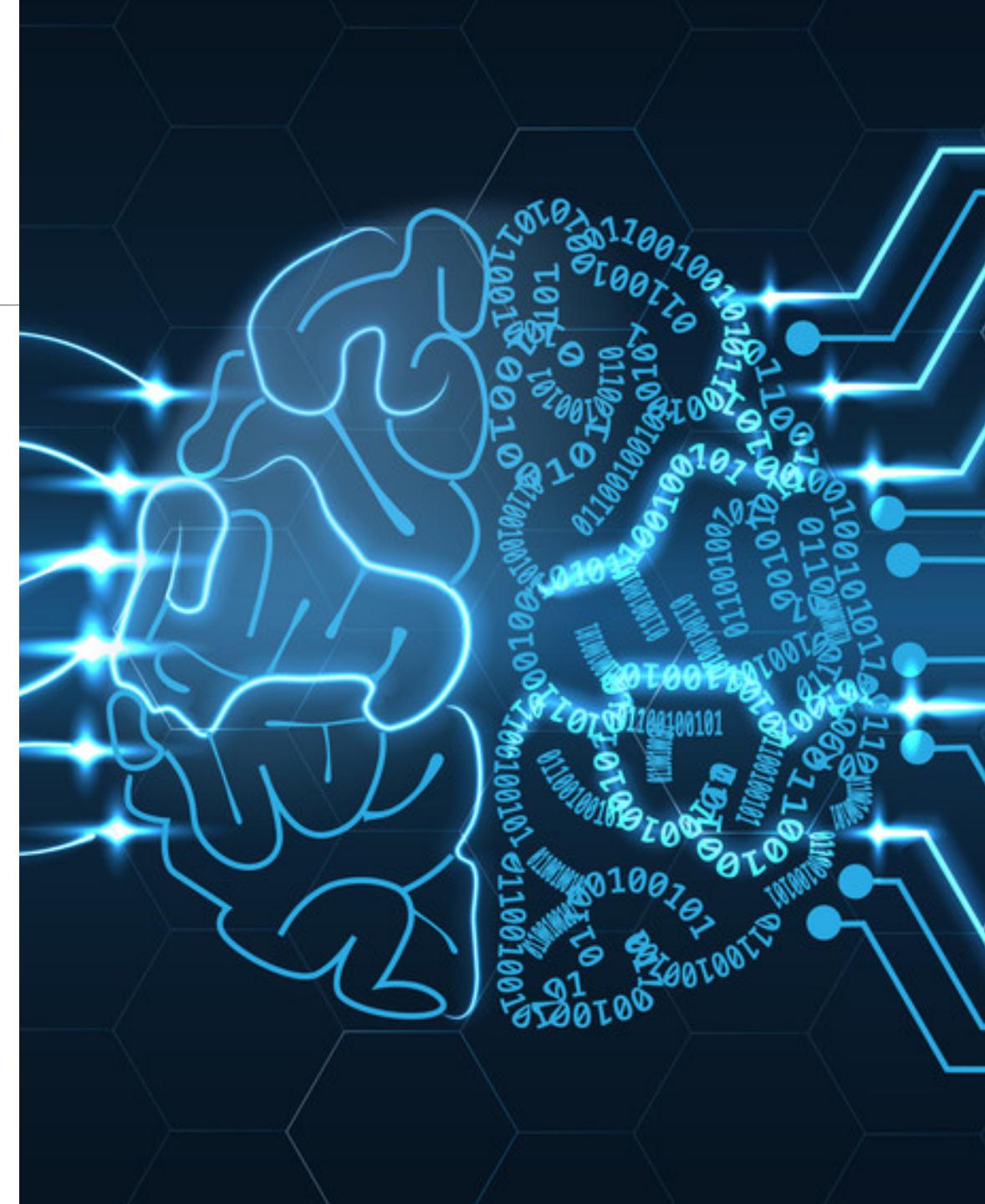
Snapchat has successfully made this type of technology popular .

# Artificial Intelligence

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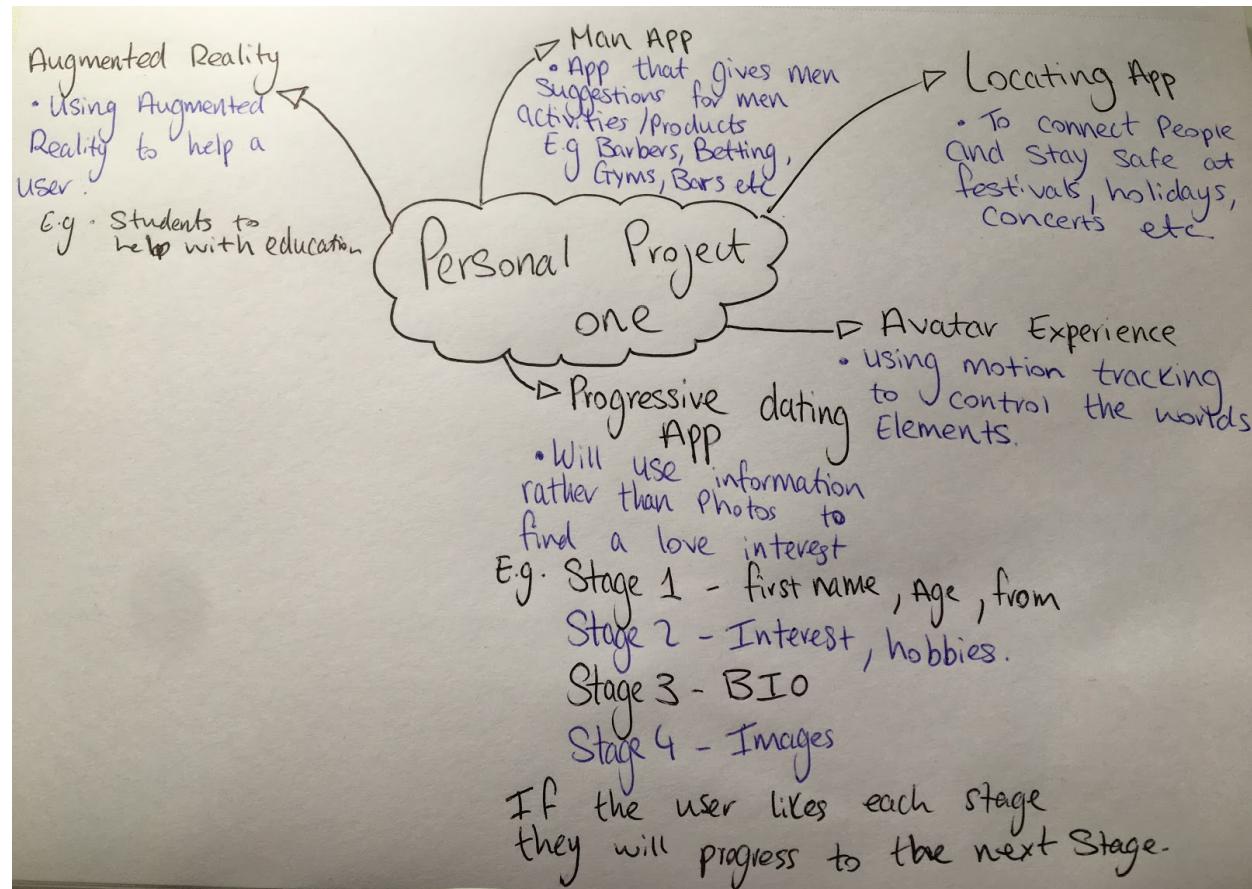
Artificial Intelligence (AI) is creating machines that are able to think, work and react like humans. This is allowing machines to become intelligent.

This technology allows machines to learn from experiences, adjust to new input and improve their understanding of how the world works.



# Idea Generation

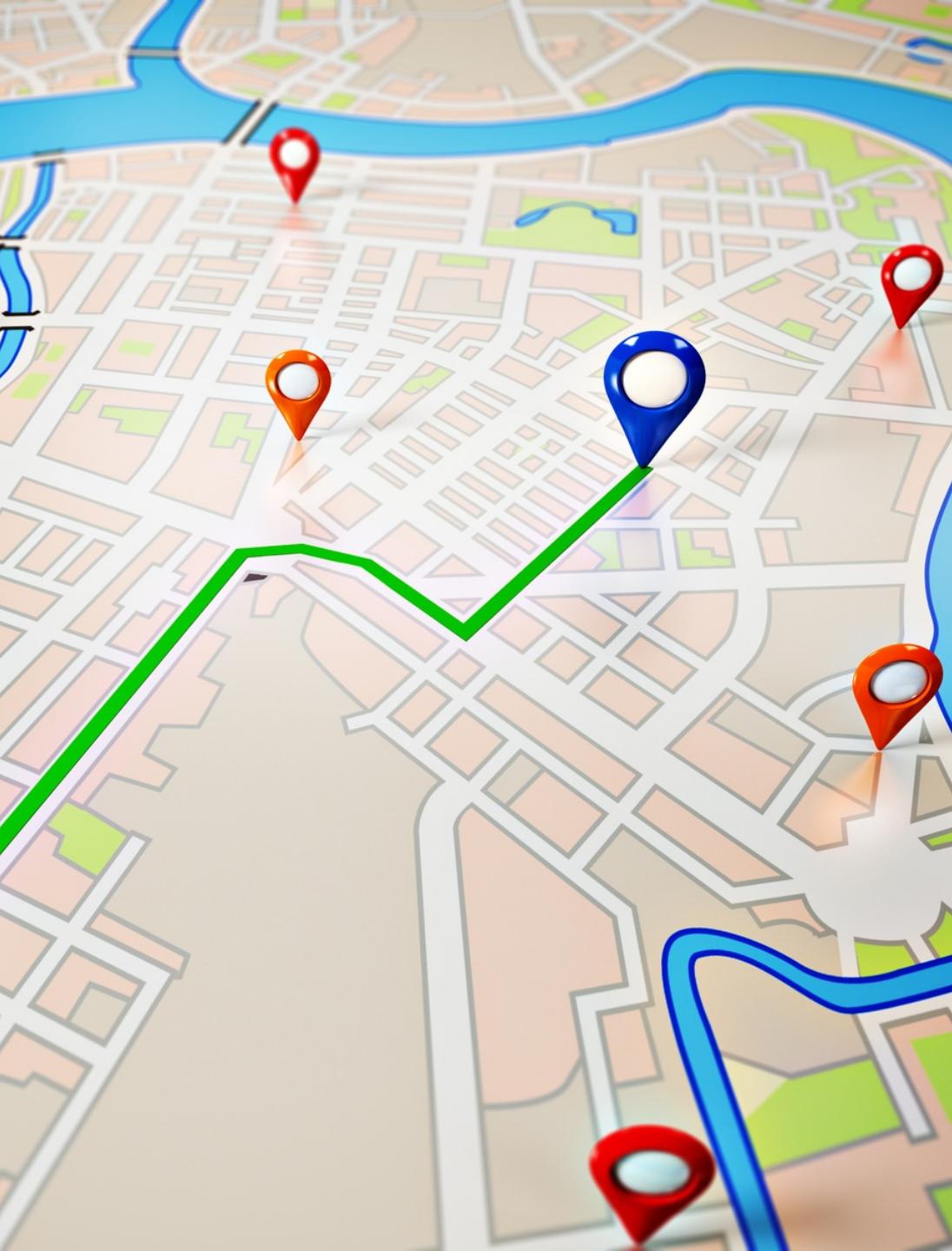
I decided that I would brainstorm a few ideas that would meet this projects brief. As this was an open brief I was thinking towards things that would help people with their everyday lives but still would like to use some sort of cutting edge technology.



# Concept 1 - Locating App

An application that allows friends and family members to connect their phones together to keep track off each other when they go to group based activities such as festivals, holidays, concerts, nights out etc.

The aim of this app is to keep people safe and connected when they are at busy or unfamiliar event. By using GPS and cloud based storage I was hoping to create an original tracking application.



# Locating App - Feature and benefits

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- **GPS location connected via phone number** - to ensure all OS can use this application.
  - **Main map** - so users can always see where everyone is.
  - **Predefined distance limit** - So users are notified when a member of the group has got to far away from the group
  - **App Camera** - So video / photos can be shared within the group.
  - **In app messaging/ calls** - To allow the group to stay connected
  - **Cloud based storage** - Allows the users to keep media on the app until group is deleted.
- Emergency features :**
- Can trigger the all the sensory features on the phone to help find the phone
  - Lock the phone (can only be unlocked by unique code set up in the group)
  - Uses front camera to take a photo of someone trying to unlock the phone if the code is entered incorrectly

# Competitor Research - Locating App

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## Glympse

- Control who can view your GPS location
- Allocate the length of time someone can view your location
- Lets users see an ETA and distance from destination
- No in app messaging (can use text or email to communicate)
- Can share location with anyone (even if the other user doesn't have Glympse)

## Life360 Family Locator

- Create groups
- Predefined locations to notify users if another user has arrived or left location
- Can track lost or stolen phones
- Gives ETA
- In app messaging

# Research summary – Locating App

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From my competitive research around locating application I found that there are already applications that would be too similar to my idea.

After doing competitive research on my Locating app idea , I have decided that this idea has already been developed and doing this would just be another iteration that has a different target audience than other applications. .

# Concept 2 - Avatar experience

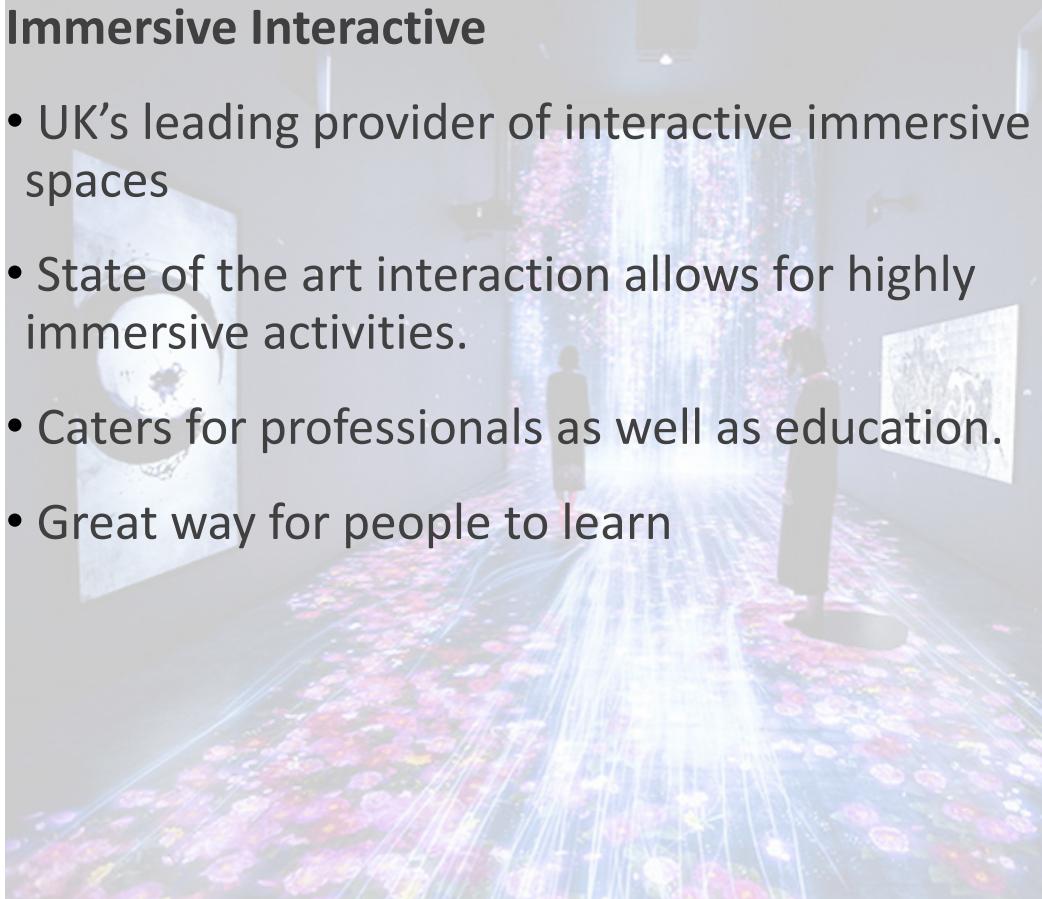
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For this idea, I was planning on creating an interactive, immersive experience that allows the user to be in control of the the 4 main elements (fire, earth, wind and water). The user will select a element they will like to be in charge of an move to the area that triggers the selected elements sound and visuals. Once they are in the selected section they can use different unique gestures to trigger the visual and sounds.



# Competitor research motion tracking

## Immersive Interactive

- UK's leading provider of interactive immersive spaces
  - State of the art interaction allows for highly immersive activities.
  - Caters for professionals as well as education.
  - Great way for people to learn
- 

## Integrex Immersive Rooms

- Latest motion tracking technology allows for a fully interactive experience for users.
  - Highly responsive walls and floors,
  - Uses sensory hardware such as smoke machines, lighting and projectors.
  - Uses for fun, educational and relaxing simulations.
- 

# Research Summary- Avatar Experience

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From my research, I was unable to find a project that was similarly created to this idea. The competitive research allowed me to see what other companies have done and what type technology they use.

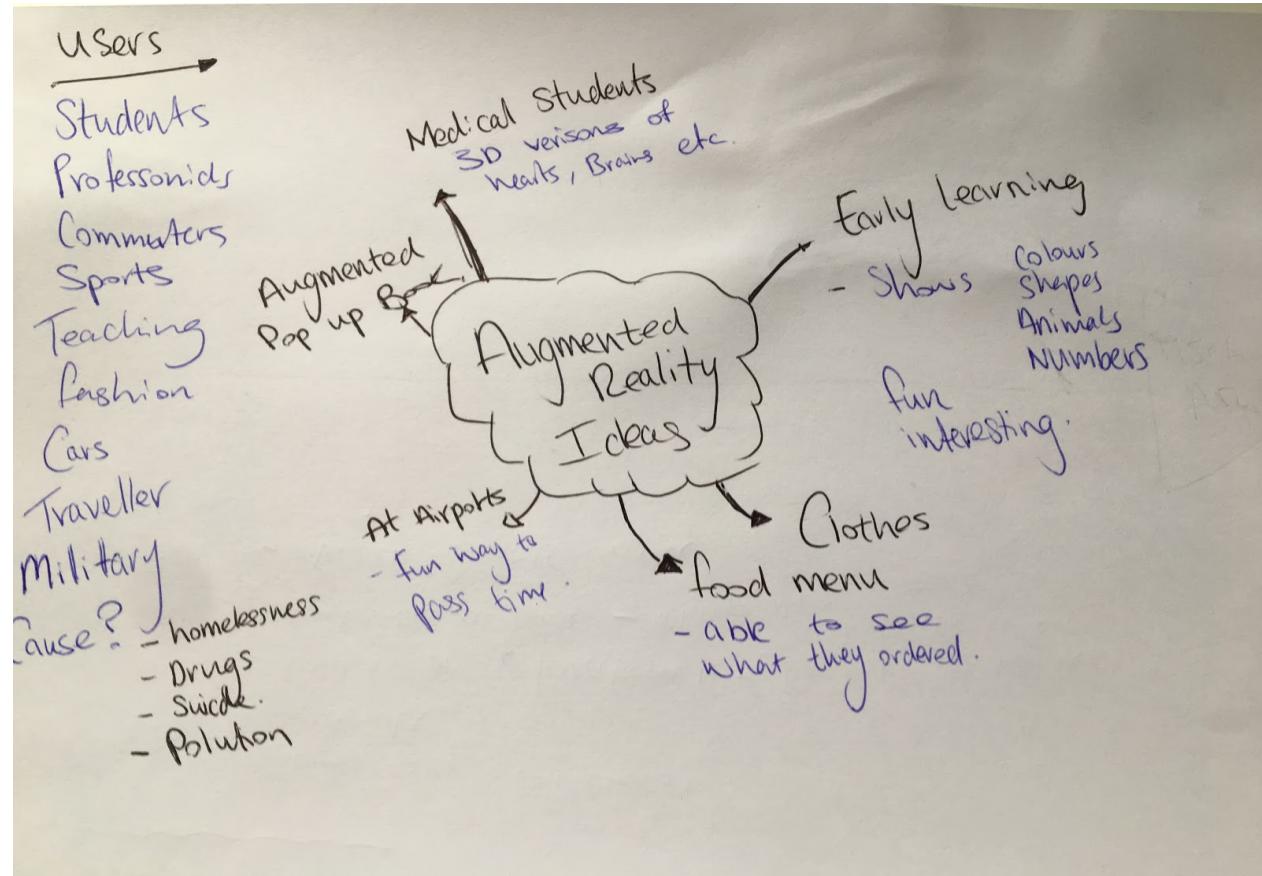
I find motion tracking very interesting especially when certain movement can trigger unique reactions through visuals and audio.

I think this idea could maybe have an educational purpose rather than just being a fun way to interact with the worlds elements. I could even develop this into some kind of interactive avatar game.

# Concept 3 - AR

I decided that I would like to have a project that focus's on augmented reality as the technology as I am really interested in this technology.

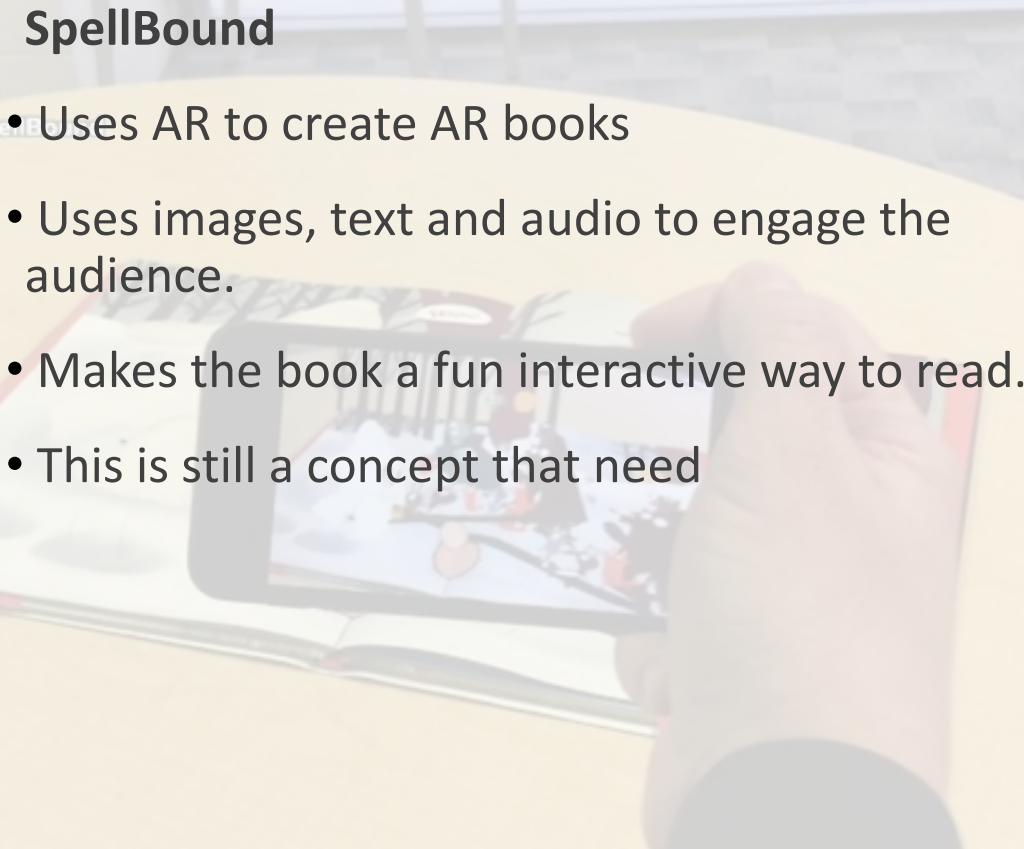
Here are some of the ideas I came up with whilst brainstorming. I was looking at users and thinking what could I make to benefit a group of people.



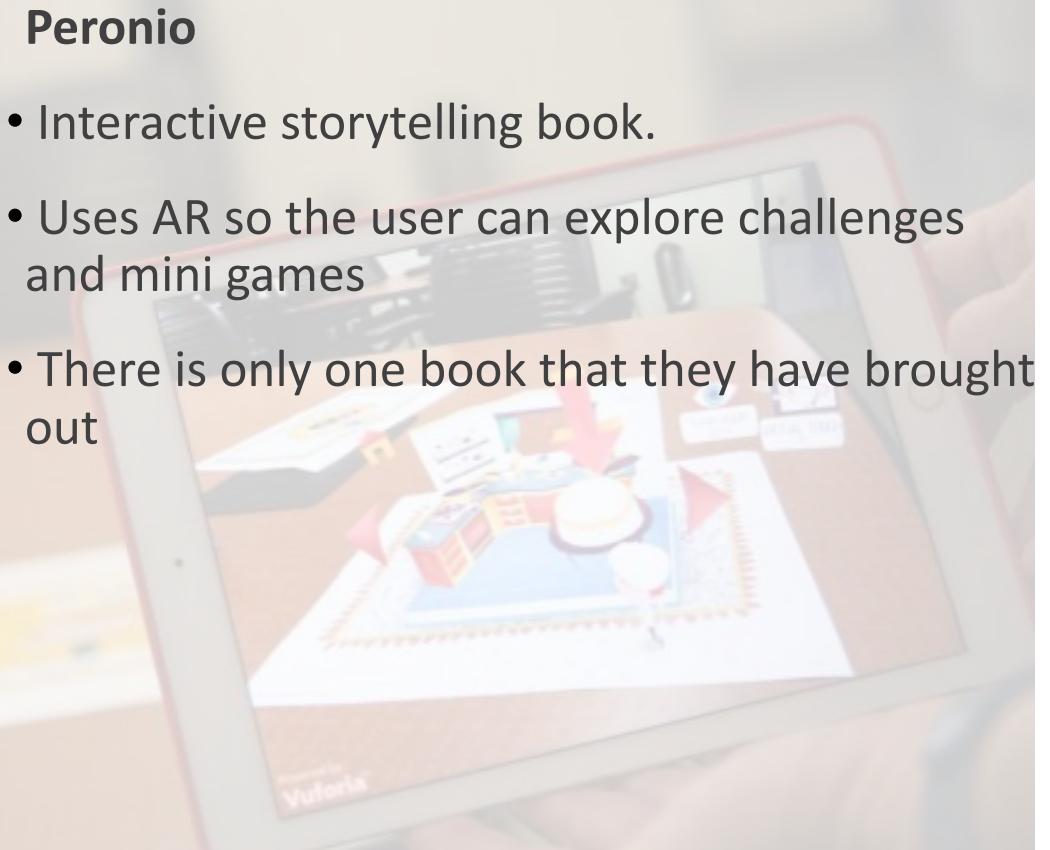
# Competitor Research

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## SpellBound

- Uses AR to create AR books
  - Uses images, text and audio to engage the audience.
  - Makes the book a fun interactive way to read.
  - This is still a concept that need
- 

## Peronio

- Interactive storytelling book.
  - Uses AR so the user can explore challenges and mini games
  - There is only one book that they have brought out
- 

# Augmented reality research summary

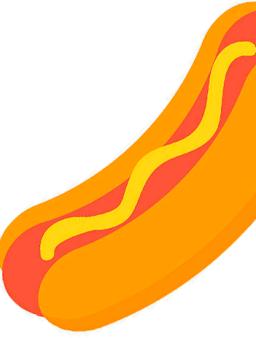
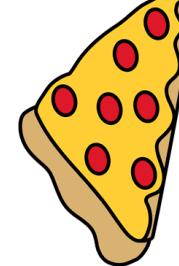
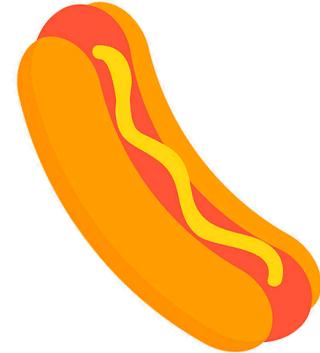
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From my research I found that there are already similar projects to this and if I was to create this it would have a similar concept. I decided to look at other ways I could integrate Augmented Reality with children's play times.

I decided I would do a project that gives children a real life toy story experience.

This not only would let children play with a physical toy but they can also interact with the toy in a digital world by using AR

**Chosen  
Concept**



# AR game using toys

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I came up with the idea that a child can use their smart device to aim at a toy which will then bring the toy to life on the screen. This giving the user a real life toy story experience.

Having mini-games they can play will allow for this be a fun and interactive way to interact with their toy without getting bored.

By using Unity, Vuforia and a smart device I would like to prototype this idea.



# AR Game feedback

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After presenting my augmented reality toy concept I received positive feedback that it was a good creative idea. But was advised to look further in AR toys and try to come up with a good target audience for the idea.

# Refining AR Game

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After hearing feedback about my idea, I started to think what would be a good niche for an Augmented Reality toy and when would be a good time for a kid to have an augmented reality toy with them to keep them entertained.

I came up with:

- Play time
- Car journey
- Waiting
- Restaurants

Thinking about my experiences when kids are in restaurants and impatiently waiting on food. I thought an AR restaurant game would be good to keep not only kids but everyone entertained when waiting on their food.

There is also no current games that have been developed that uses Augmented Reality which is marketed for restaurants.

# USP

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From searching on Google Play and App store I was unable to find any Augmented Reality restaurant games. I was able to find a gap in the market.

The game will encourage the users to play whilst they wait on their food. Most people would be sitting on their phones whilst they wait on their food so this gives them something fun to do to pass the time.

Restaurants can give prizes to customer if they make it onto the leaderboard. This will encourage customers to return to them restaurant as they could win free food.



# Competitor research

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## Pokemon Go

When Pokemon Go was released in 2016 it was an instant hit on the app store. Pokemon Go uses augmented reality to allow the users to go search for Pokemon. This introduced users to a new way to play mobile games



# Competitor Research

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## Temple treasure hunt

Temple treasure hunt uses augmented reality and geolocation tracking technologies to develop an adventurous mobile game. The aim of the game is to get people active and to search for hidden treasure. It has an indoor and outdoor mode that allows for the user to have an adaptable game environment.

Although, this competitor is an augmented reality game it is not similar to my idea. It was good too research this game as it gave me some indication how I would like my project to be.



# User personas

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I decided to create some user personas as this would allow me to imagine what situations this game would come in handy. It also allowed me to think about the potential users and what they would think about the game.

**Name:**

Charlie

**Age:**

6



Charlie is an energetic young child, he likes to spend his time playing with toys. He often is quite restless when he goes out for meals with his parents. There aren't many restaurants that accommodate for children entertainment. As he is an only child he doesn't have any siblings to keep him quietly entertained whilst he waits on his food. His parents found that Charlie having his iPad he can keep him entertained without any incidents.

# User personas

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**Name:**

Bethany

**Age:**

21



**Name:**

Karen reid

**Age:**

31



Bethany and her boyfriend regularly go out to restaurants on average 1-3 times a week. They would usually chat or use their smart devices to pass the time while they wait on their food. The idea of a game to pass the time appeals to Bethany as she considers herself a gamer. Being a student she appreciates when she gets discounts or free things. She likes the incentive of being able to get free food by making the leaderboard on the game.

Karen is an active mum who likes to have a meal out once a fortnight as she balances work and raising 2 children. When she goes out she finds herself telling her children to be calm and sit on their chairs. She understands that children's patience is different from adults so is quite passive about their behavior at times as she knows they will calm down when the meal arrives. However, to save having to discipline the children in public she would like and efficient way to entertain the children whilst they wait. She has been to certain establishments that have a fun area for children but this isn't always available. Having a way to keep the children entertained in the restaurant would be the ideal way for her to enjoy her time at the restaurant.

# Target Audience

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Originally, for this project I aimed this concept at young children between 3-9 as this was a good age range to target for this project.

Although, I want to make this appealing to people off all ages as children cannot go to restaurant by themselves.

I find that my concept is more appealing to younger children. However, with the idea of prizes this could be targeted at a young adult audience. The prizes gives the incentive to get free food so they would like to play hoping to get some free food from their favorite restaurants.

**Concept  
Development**



# Technology

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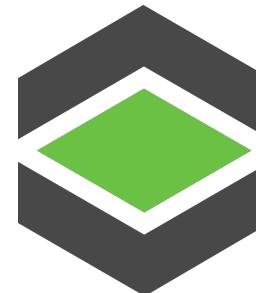
## Unity

Unity is a game design engine that allows the user to create video games and simulations for computers and mobile devices. It allows the user to control the aesthetics of the games, characters and interaction. This will be one of the important programs for my project as this allows me to create how the interaction will work. Unity provides me with the tools to create the game.



## Vuforia

Vuforia gives unity the ability to produce Augmented reality projects. By creating a database on Vuforia this allows for the user to create AR projects on unity.



vuforia™

# Technology

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## QR code

From a quick internet search I was able to find a QR generator that would allow for any design to be made into a unique QR code. This gives me the ability to create a distinctive QR code.

## Smart device

For all these technologies to work efficiently a smart device would need to be included as this is how the user will be able to interact with the project. A smart phone or tablet would be the ideal device for this project.



# sketches

To think about how this project will be used I drew a storyboard from here I was able to understand what kind of screens my audience would face and how they will interact with the game.

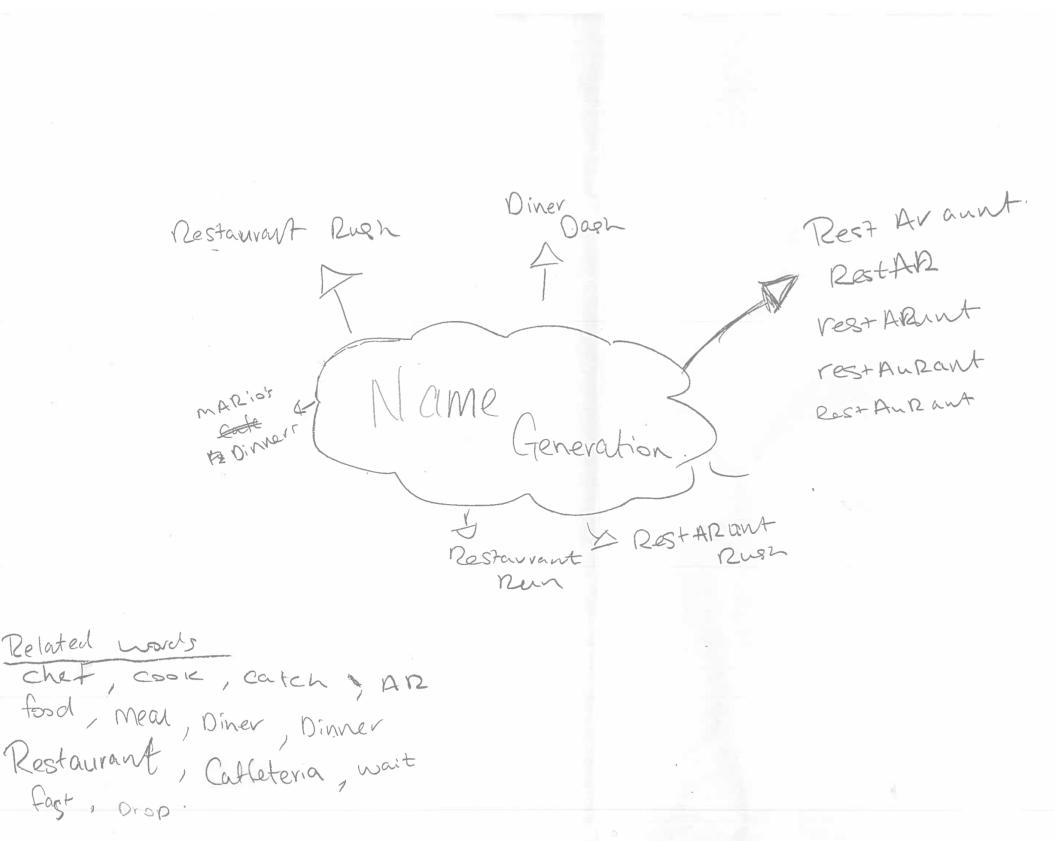
This made it clear that when the user scans the QR code they will either be brought to the app store to download the game or it would automatically open the app on their device.



# Name Generation

Coming up with an interesting name for this game was quite a challenge. I understand how important it is to have a good name for an app so people will recognize it. I wanted the name to be catch but also give the audience a clue on what they will expect on the game.

I liked the name restaurant rush so originally was going to call it this. However, after some refining I decided it would be best to misspell restaurant so I could accompany AR in the name.



**Design  
Development**



# Branding

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After coming up with restARant rush It was time to look at how I could brand the game. As restaurant is spelt wrong for the project I thought it would be important to make it stand out that this is an Augmented Reality game. I decided to create some visuals for this.

I always knew that my branding would be bright red and yellow as there has been studies to show that this combination tricks the brain into feeling hungry, this is why fast food company's use these colours in their logos.

restARant  
rush

restARant  
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rush

# Branding

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When I was thinking about the branding I wanted a font that would be playful but would look professional and combine well with my idea. I firstly went through a number of fonts comparing which style I would like to use. In the end, I used Noteworthy as this font was quite child like and worked well with my idea.

After the font was picked I decided to brand it in numerous ways to see what style would fit best. I thought it would be important for the AR to stand out so that users would know that this is an augmented reality.

In the end I decided that the yellow text with a thick red stroke would be best as this looked the best.

restARant  
rush

# App design

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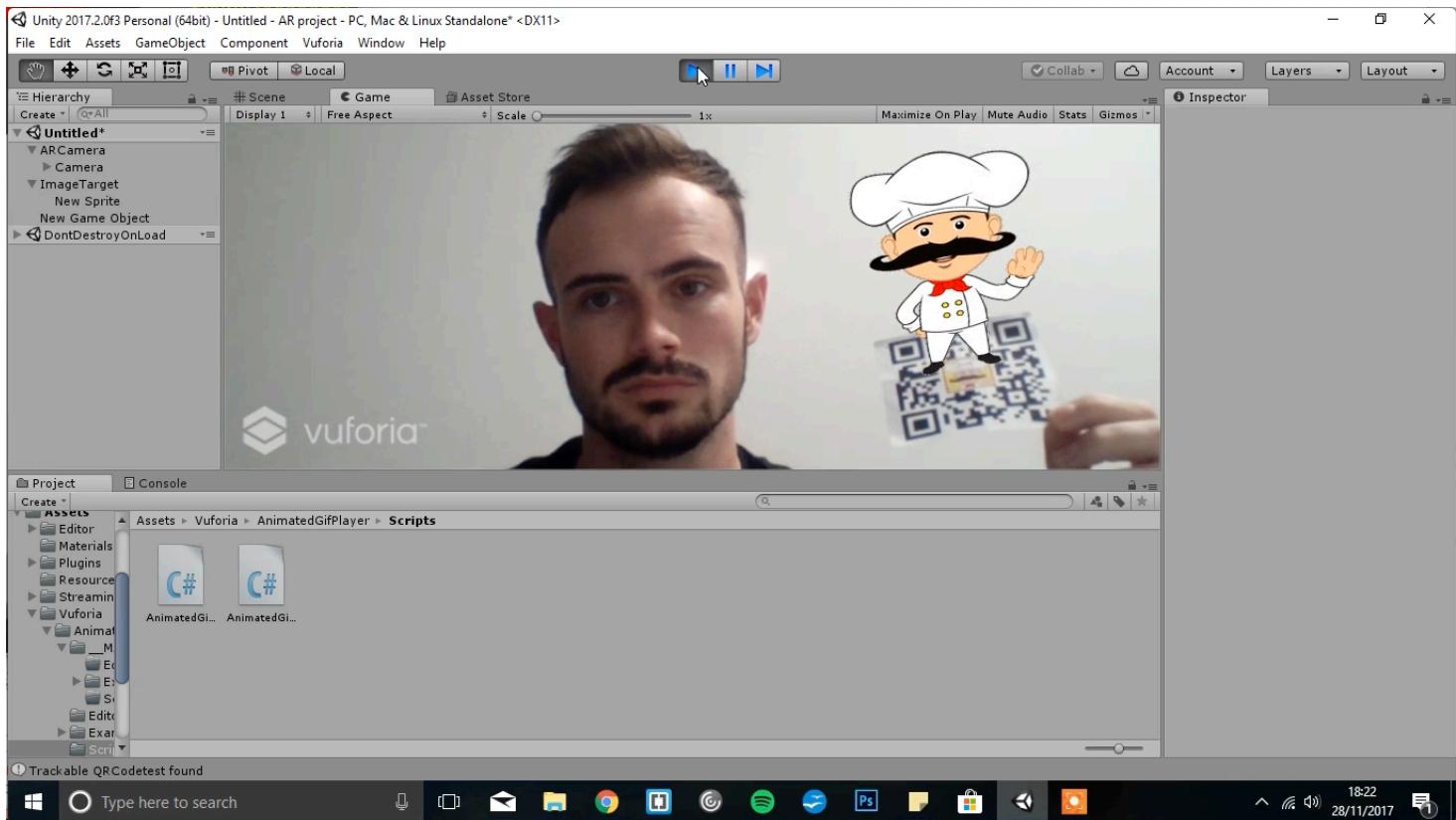
When I thought about how people would use the game I looked at how thought about how the app would look. As you can see from my sketches there will be 6 screens. I wanted to give the application a restaurant feel to it so it would combine well with the idea.

After I drew the wireframes I decided to mock this up using my branding and adding visuals to bring the idea to life. My designs didn't change much from my wireframes.



# Unity

To get a good understanding of the type of technology I would need to use to create this, I decided to have a go at Unity to see if I could bring my game to life. Using Unity, Vuforia and a QR code I was able to get my character to come to life. As you can see from the screenshot the camera was able to pick up my character which was waving.



# QR Code

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As a QR code would need to be used for the game to work I decided this should be designed to be recognizable using my character in the center. This made it more obvious what they will be scanning for. I have wrote scan me on the QR code so it triggers the curiosity of the user to find out what they will be scanning for. The QR code will bring the user to the app store or if they already have it downloaded will launch the game.



# Graphics

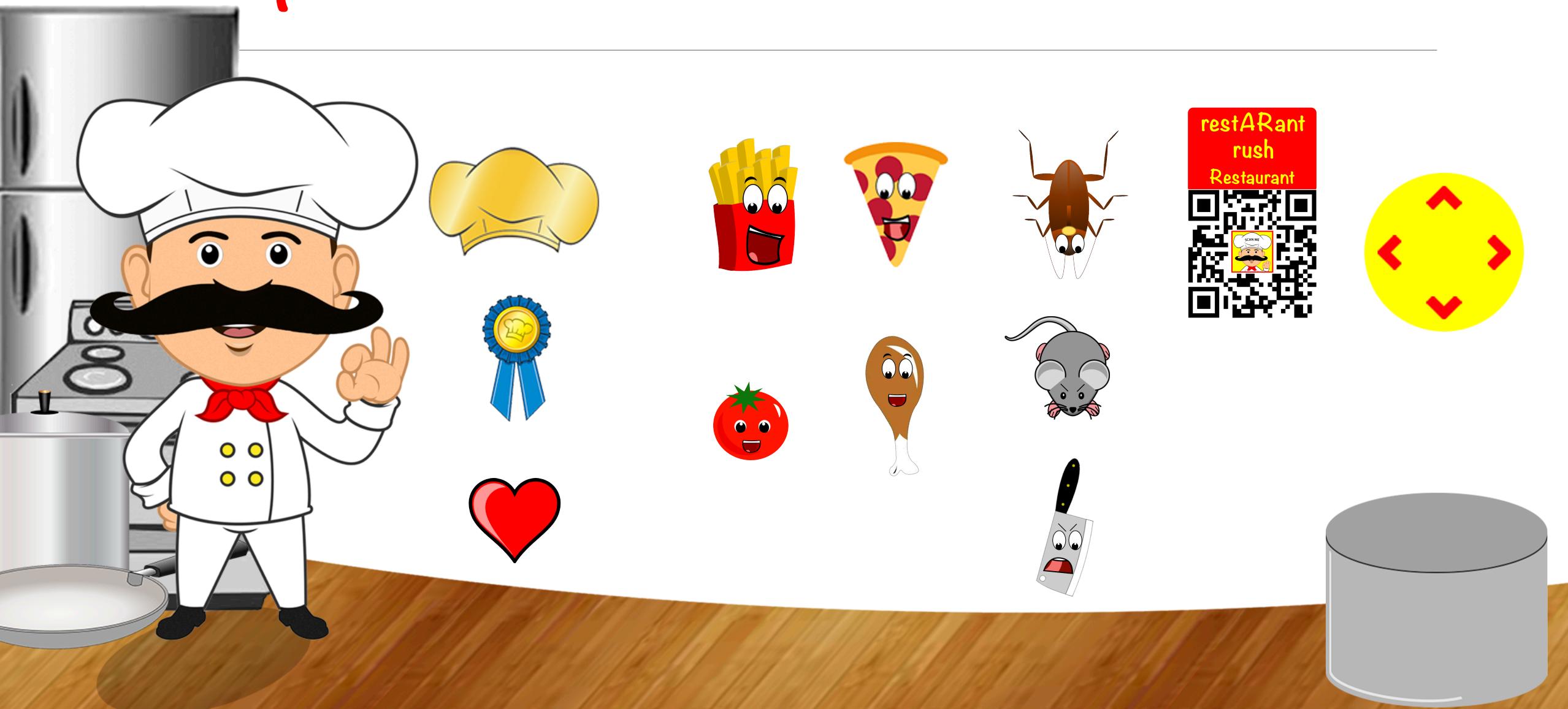
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A fun part of this project was creating the visuals to be used in the game. I specifically liked designing my main character.

I was happy how the character turned out. To animate the character I needed to create different expressions such as happy and in pain. I also needed to create an invincible character.



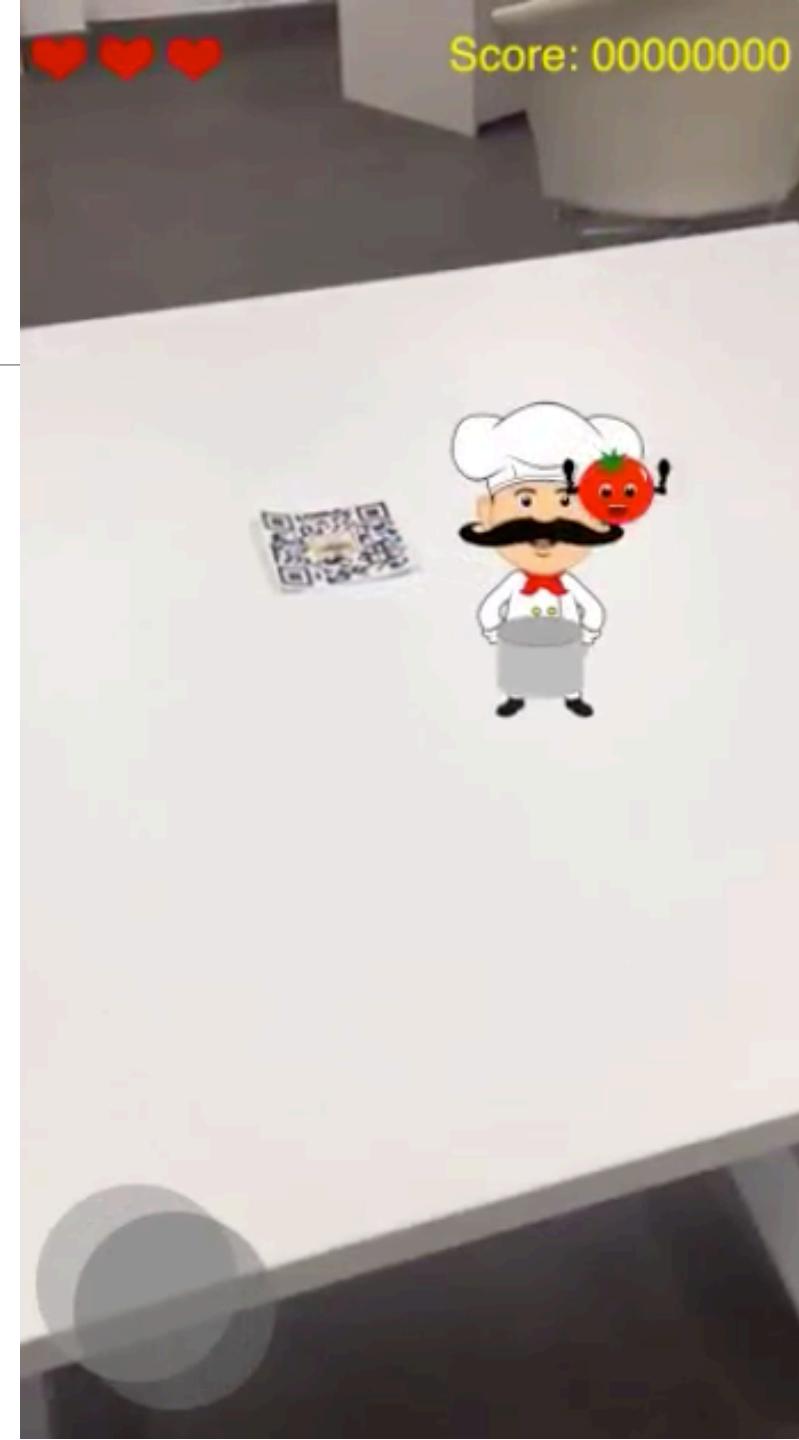
# Graphics



# Demo

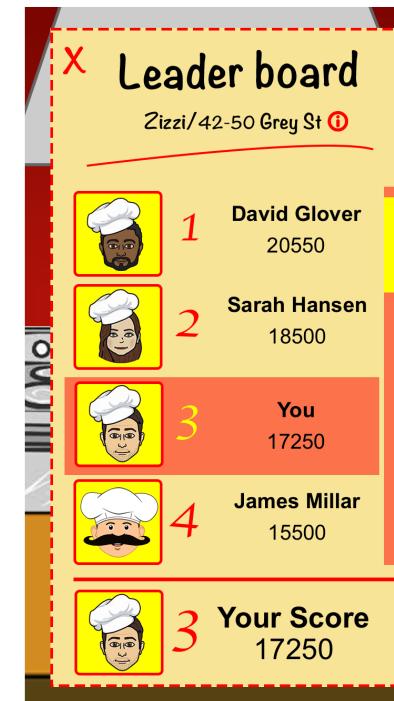
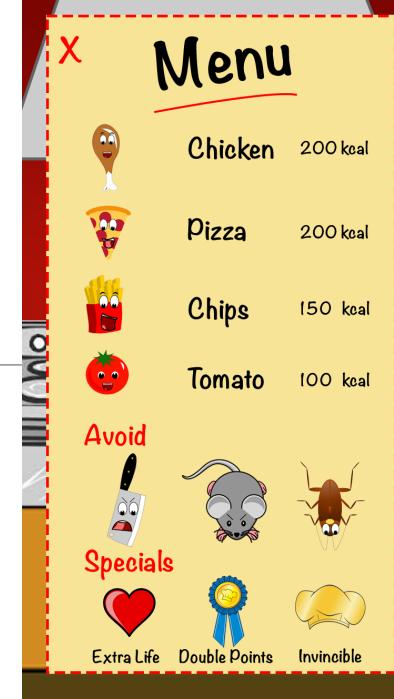
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This screenshot shows my first demo of the game. Making a demo let me see how what this game could look like. It also helped me to think about what type of animation my character should have such as how he would walk or facial expressions when he gets hurt.



# Final app design

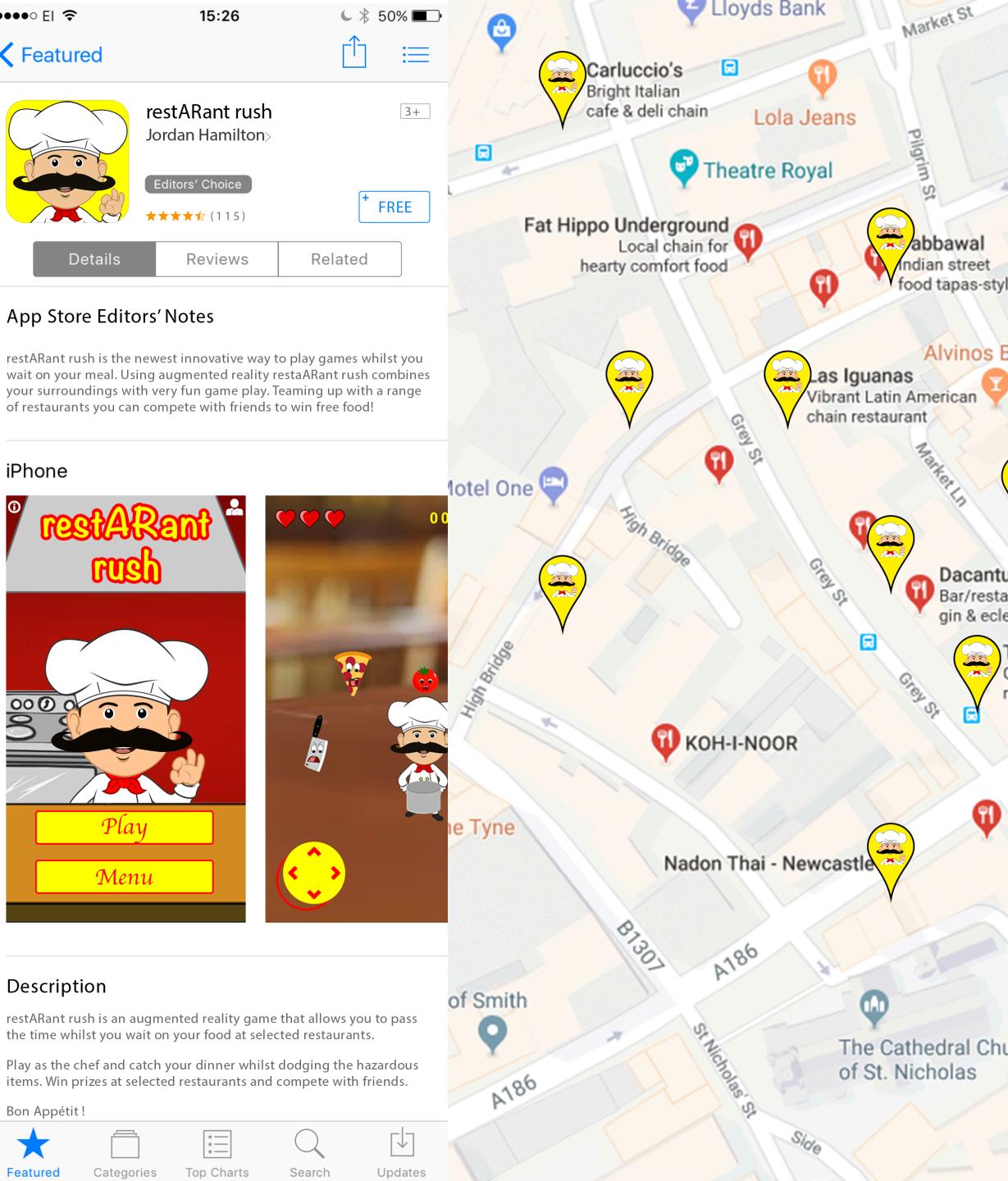
This is how the application design ended up.  
I'm happy with how this has turned out it  
looks professional and fun.



# Final app design

I also mocked up how the application would look on the app store. I done this as it would let me visualize how it would look to users. I was also able to think about how it should be described. I think this mock up looks well and I was able to describe what the application is.

I have also created a map that shows users what restaurants supports restARant rush in their establishments.



# Final Design

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**Video  
Development**



# Video research

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Before I started to create my promotional video. I thought it would be best to research similar applications and how their promotional videos look like. This allowed me to generate some ideas and visualize how my promotional video might look.

Looking at Diner Dash and Pokemon Go, I was able to get and idea of what should be shown in my video.



Diner Dash Rush - Official Trailer

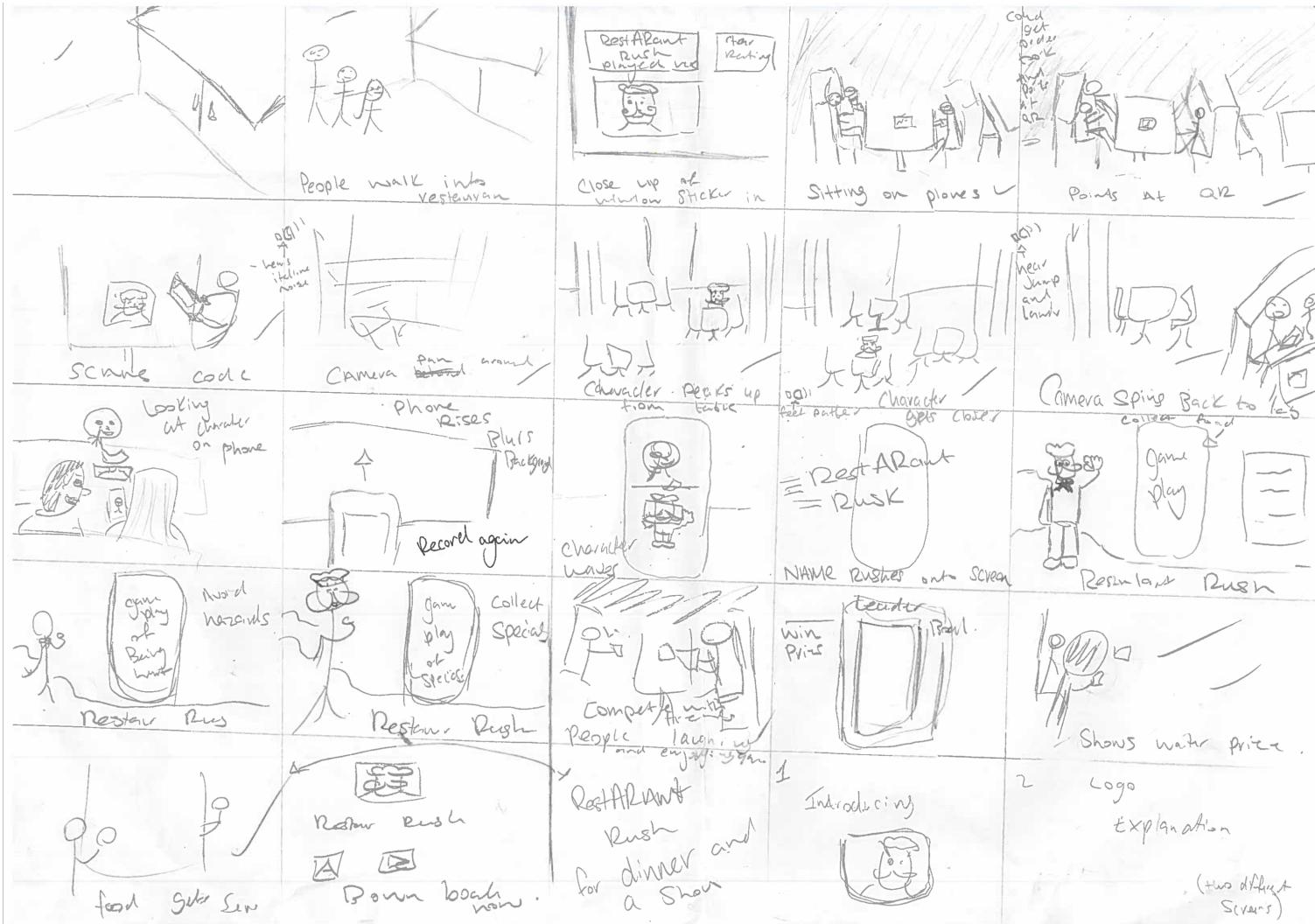


Pokemon Go - Gen 3 Pokemon, New Weather System Trailer

# Storyboard

After doing some video research I drew up my story board for the video. This allowed me to see what I would need to film and what I would need to animate.

I stuck to my storyboard in my video. The only difference is I added an introduction screen to tell users what restARant rush is.



# Filming

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After I created my storyboard it was time to do some filming. I didn't use any found footage in my video as I was able to record everything I needed.

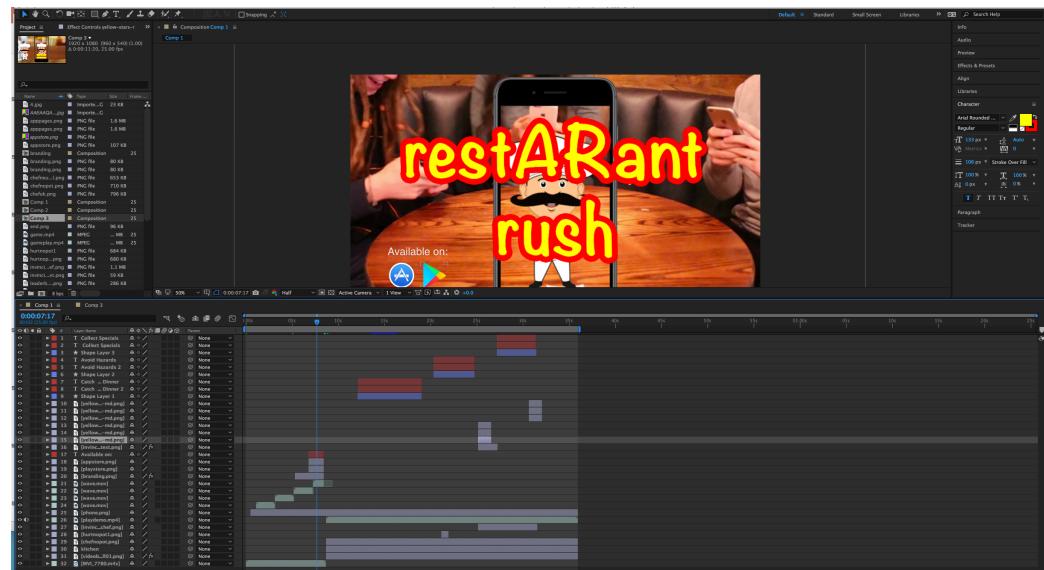
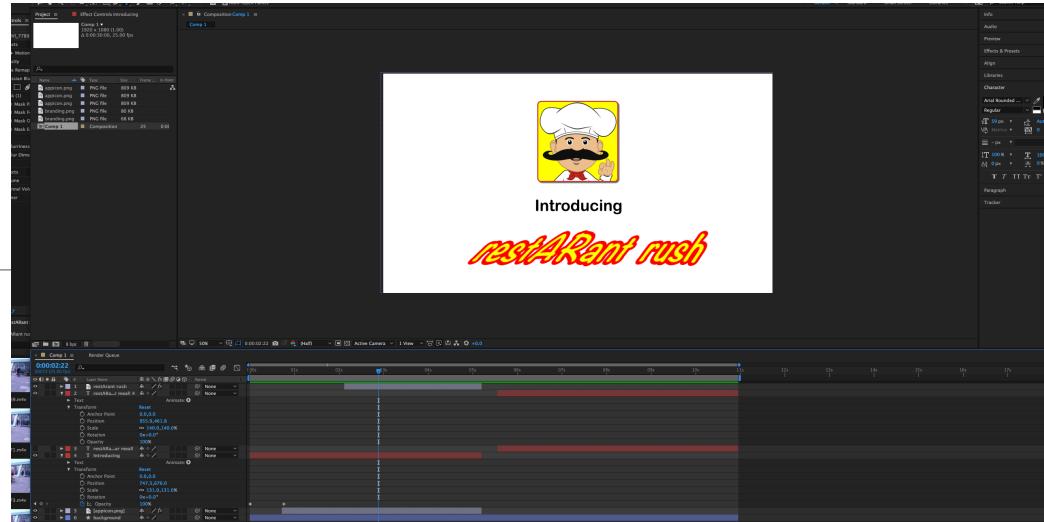
I originally wanted to use kids in my video however after recording them the acting wasn't the best. I then didn't have access to them again to retake the videos. After I looked back at the videos I had to record the footage again using adults. Which wasn't what I initially wanted to do.



# After Effects

I used After Effects to create my animations and most of the video.

I enjoyed using After Effects to create this video as I was able to make the video fun and entertaining.



# Ableton Live

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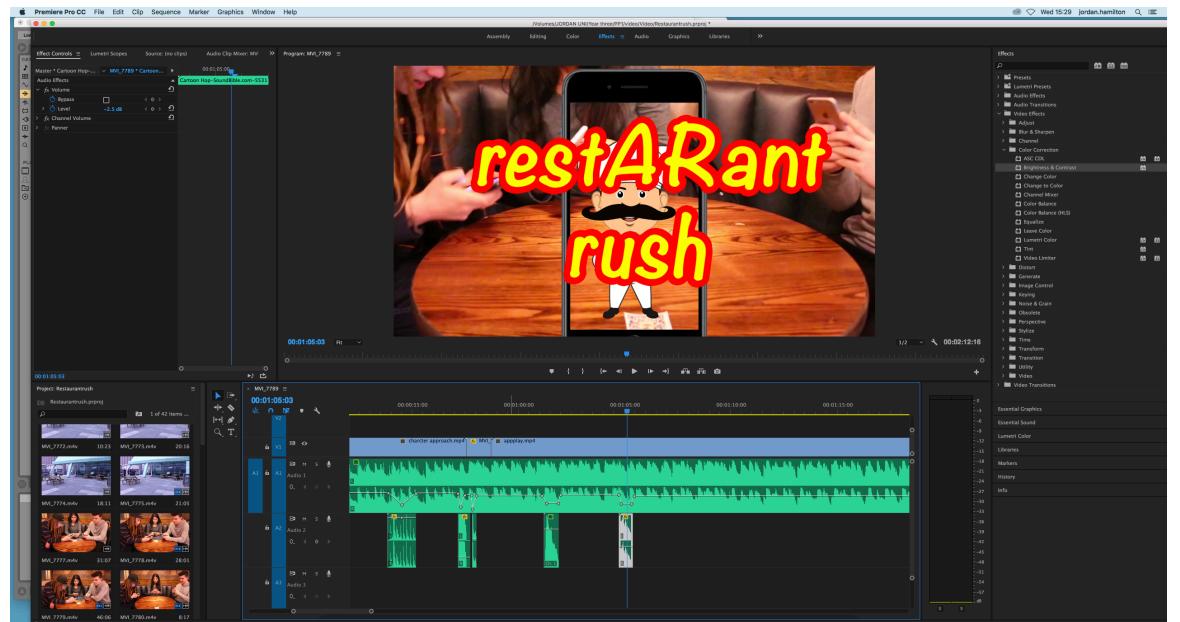
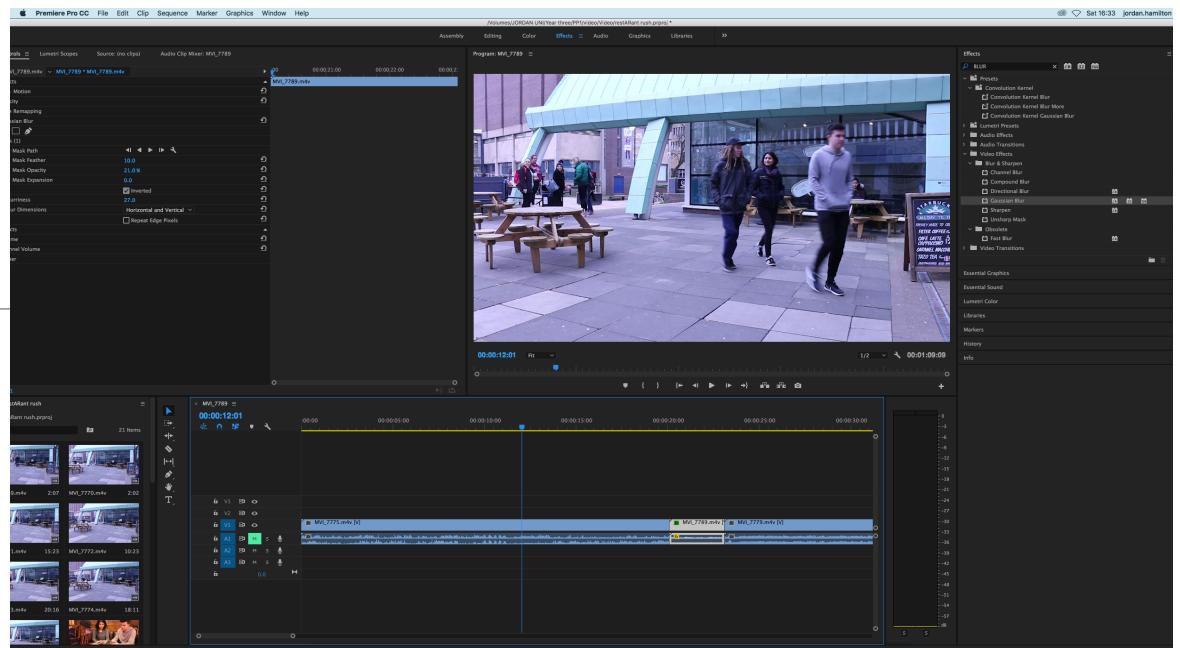


I needed to use Ableton Live as I was getting sounds online and they were sometimes too deep for what I wanted my character to sound like.

I was able to change the frequency of the sounds to make it fit better with my style.

# Premier Pro

After I created my animations and selected my sounds it was time to put it all together. Using Premier Pro allowed me to put this all together . I was able to edit sounds and footage to demonstrate my video.

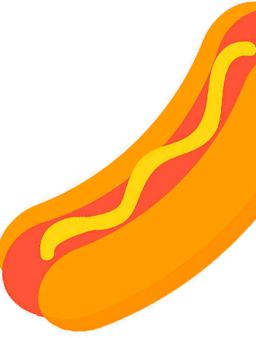
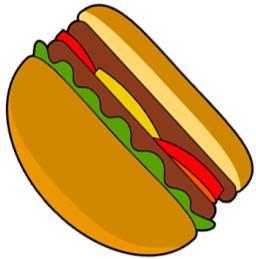
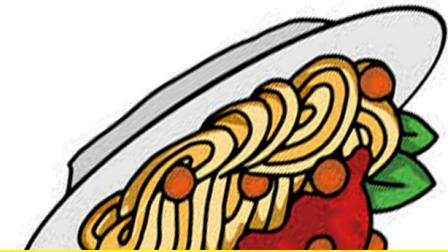
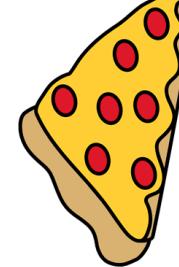
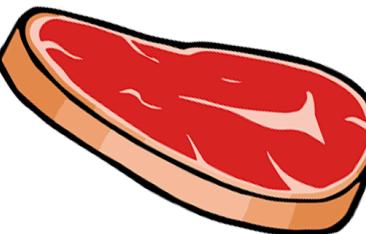
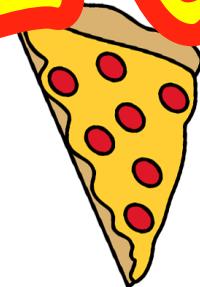




Introducing

# restARant rush

# Evaluation



# User Response

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Jordan Hamilton  
Yesterday at 17:18

Hi everyone, for my final year personal project I have designed an augmented reality (AR) mobile game to entertain people whilst they wait for food at restaurants. If you could look at the promotional video I have created and give some feedback on the video/ game, it'll be very helpful with finishing my project. Thanks !



...

After I created the promotional video for restARant rush I shared it on Facebook to see how people responded to the concept.

I was delighted to hear back from a range of people that all had good feedback! They liked the concept and the video. I was also able to see if there could be any improvements.

# User Response

1 Michelle Tracey, Lisa Tracey Allen and 3 others ✓ Seen by everyone

 **Chelseayann Hamilton** Ohhhh I love it looks easy to use very user and child friendly!  
Like · Reply · Yesterday at 17:24

 **Dominic Lobban** You've found a clever gap in the market when waiting for food to arrive in a restaurant. Having your gameplay linked to this makes for a really fun and relevant game! Nice one  
Like · Reply · Yesterday at 17:25

 **Jack Mercer** A very good video. The branding works well although I'd say it would be even better to market towards children as a way of keeping them behaved at the table. Just a tip for the video, maybe try and have a bit where someone is actually using the game on their phone, even if its just a few seconds  
Like · Reply · Yesterday at 17:26

 **Darren Chappell** I really like this idea, my two sons are a handful when we got out for meals. I feel like this would be an excellent idea as it would keep us all entertained while we wait on our food. Would like to see this in more restaurants!  
Like · Reply · Yesterday at 17:29

 **Lisa McCullough** I love this my 6 year old is always on his ipad when we're out as he gets bored waiting and he really likes the idea of this game.  
Like · Reply · Yesterday at 17:43

 **Michelle Tracey** This is a brilliant idea, my wee granddaughter would love it as she gets bored waiting on her food well done  
Like · Reply · 23 hrs

 **Conor John Hamilton** This is brilliant my wee brother is a torture when we go out for food this would keep him entertained until his kiddies meal came out   
Like · Reply · 1 · 22 hrs · Edited

 **Jamie Weir** I hate waiting on food, there's nothing worse than sitting there having to listen to that loud mate ramble on while you're hungry. This is a game changer!  
Like · Reply · 22 hrs

 **Liam Stephenson** The concept is really clear throughout your video and you can definitely see it as something that young kids would love whilst waiting for their food. Potentially adding voice-over to the video could help explain some parts of the application more but aside from that well done, it's a strong concept and project.  
Like · Reply · 20 hrs

 **Ian Carlisle** Great video, well explained concept. A great gap in the market for this and also to liaise with restaurants in the near future to further promote this.  
Like · Reply · 19 hrs

 **Lisa Tracey Allen** My daughter would love that while waiting on her food, and tbh I think my husband would like it too. Brilliant idea  
Like · Reply · 3 hrs

# Future Developments

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## Customizable character

If I was to develop this in the future I would like the users to be able to use their Bitmoji as the character or have the option to change how the character looks. I feel like this would be more entertaining for the user and it would make it personal. When the users are on the leaderboard they use their Bitmoji as their photo so this would be a nice touch to the game.



# Future Developments

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## Multiplayer

Multiplayer would be a fun development for the users as they would be able to compete with their friends.

## Specific food for each establishment

Having related food falling would be a good development as then it can be more specific to each restaurant. For example, KFC could have chicken, chips, burgers and Wagamama could have falling squid, noodles etc.



# Evaluation

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Looking back at the overall project, I believe I have met the brief as I investigated and used cutting edge technology to make an interesting project. I am very happy with how this project has turned out.

At the beginning of the project I came up with numerous Ideas and originally thought I was would be doing a locating app, however after researching numerous applications I decided that I would need to come up with a more unique idea. I was interested in augmented reality as I use snapchat a lot so having a think for a project that I could do was quite difficult. I came up with numerous ideas and it seemed that they have already been done. I continued to think of ideas for what I could do using AR. That's when it thought about doing the AR book but then again this was done but from this idea I was able to come up with the idea for the AR restaurant game.

I feel when I refined my idea that this was the hardest part over with as I really enjoyed designing this application.

When I first started using Unity I found it quite confusing but after watching a few tutorials this became easier.

Once I was able to get Unity working, I was then able to go onto creating the graphics. I am delighted on how my graphics turned out as they look playful and professional. Once the character was created I was eager to test this out in Unity. I was happy that I was able to get this to work.

I am happy how the application has turned out they way it has as it looks professional and I created all the necessary screens. I liked the idea of having Menu instead of rules on the application as it fits with the game.

# Evaluation

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When it came to creating the video it was a lot of work from filming, to editing and animating. I had to animate my character for a number of situations such as transforming into invincible, walking and getting hurt. I enjoyed doing this as it was fun and quite humorous. I feel this is when I was being most creative. Ideally, in the video I would have used children as the actors but as the recordings didn't turn out well I had to resort to using adults. Although, the game is targeted at kids I would think adults would enjoy using this while they wait on their food. Using adult actors allowed me to make the video better as they could understand what I was getting them to act.

When I put my video on Facebook for comments I wasn't expecting the feedback that I received. I was delighted to see that everyone enjoyed the video and would like to see this in restaurants. I liked that some people told me about some improvements as I find criticism useful.

Overall, I am thrilled that I was able to meet the brief and come up with a fun and interesting idea. Even though there was some difficult parts throughout this project I am glad I done it as I was able to create a good project that received excellent feedback.

