

This is my production folder for my proposed Virtual Reality project. This includes the research of the literature and practical sides of my project. It shows my journey and thought process and how to effectively create a virtual world that portrays patriotism in American high schools.

By Eoin Stewart

MED525 Production Folder By Eoin Stewart

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INTRODUCTION

For my Major project I have decided to go with Virtual reality, I have never done virtual reality before, so I wanted to try it out and learn something completely new to me.

I will be using Virtual Reality to explore propaganda, and it will take a look at American patriotism in education, the user will be able to explore a virtual world and will have been educated and made aware of patriotism in education.

I have chosen Virtual Reality as I believe it is a unique and creative way for a user to explore and interact with the elements that I am planning on creating. This will allow users to experience my project as they please, as it will be free to move about and explore whatever element the user is interested in. Exploring the different sides of patriotism and also the elements that go along with that.

PROPOSAL

The Problem

In my Major project I will explore how modern-day technology such as the internet can ease the spread of propaganda and censorship and how the United States government allows the spread of it, so that it can give everyone an unconscious sense of patriotism, everyone in the world has been brought up like this but the techniques that are used such as creating a national identities and emblems, and the modern media both on TV and online can communicate the unconscious sense of patriotism.

The Context

The context of my project will take place with the Trump administration and how they use social media as a platform to spread their propaganda to American citizens without them even realising as they have been brought up with what the government wants them to believe.

The Method

The method of my project will be a Virtual Reality experience that portrays the present-day America and will include different government-based stories from the past few years and how they can be manipulated online on different platforms, but the aim of the game will be to collect different fragments of the story so you can complete it

Methodology

I have chosen to do a practice based project because I want to explore and create a Virtual Reality experience so that the person who is walking through the piece I have created learn from it and become more aware of propaganda and patriotism and how easily it spreads through social media, and other modern technologies.

Studio Practice

I will be using Unity and Visual studios to help me complete my Virtual Reality experience, while also using Blender to help me create elements for unity so there will be little need for downloading other free assets, I will also be using audition and Premiere pro for some editing footage that I can put into the experience, I may also use illustrator and Photoshop for some design work that may need to be done.

Results

The outcome will be a complete VR experience where you will be able to explore and also be able to interact in a small environment where the user will be able to also collect and look at information through a walk-through based game, where it is all about learning and gaining information.



RESEARCH

VR HISTORY

Since I have never done Virtual reality before I wanted to explore the origins of it and how it all began, I will look at the biggest milestones that virtual reality has achieved since its start. The first milestone of virtual reality was in 1957 with a film maker called Morton Heilig who had created a large 'booth like' machine which he called the Sensorama, he intended to combine a number of different technologies to create an immersive 3D world, it was complete with smell, sound vibrations and atmospheric effects such as wind. In 1960 he had a vision of creating the world's first head mounted headset, while also thinking of wide vision and true stereo sound. None of this technology was made in his lifetime but he is a key figure in the history of Virtual Reality, laying the groundwork for what we have today.



Sensorama. (2014). [image] Available at: https://www.researchgate.net/figure/Sensorama-From-web-page-InventorVR-retrieved-in-March-2014-from_fig1_263388241 [Accessed 21 Feb. 2020].



Sword of Damocles. (n.d.). [image] Available at: https://vrroom.buzz/sites/default/files/styles/article_top_banner/public/sword-of-damocles-jpg-1459515301-byqc-column-width-inline.jpg?itok=AFS1SGNd [Accessed 21 Feb. 2020].

The first VR headset that was called 'the head mounted display' and was created in 1968 by Ivan Sutherland, it is claimed that he is the most important figure in computer graphics. It was a simple machine that when you turned your head the shapes changed with the movement, and this is also seen as the birth of Augmented reality as well. The headset never developed further because of its weight and it had to be hung from the ceiling as well. It was called 'the sword of Damocles'.

VR HISTORY



Super Cockpit. (n.d.). [image] Available at: <http://data:image/jpeg;base64,/9j/ /CaczdZdXLji6> [Accessed 21 Feb. 2020].

The aspen movie map was another milestone for virtual reality, it was created by MIT in 1978, it was basically a virtual reality google maps, it used photographs from a car that was driving through Aspen, giving the player an interactive first person tour of the city, and this was the first example of how virtual reality can transport people to other places.

When Ivan was working on his project a military engineer called Thomas Furness was developing a flight simulator which will be known as the 'Super Cockpit'. He had continued to work on the project no the 1980s with the final result of the project being a pilot training cockpit simulator, and it was able to project 3D images. It also allows the trainee pilot to control the plane with his movements, voice and eyes.



The Aspen Movie Map. (n.d.). [image] Available at: <https://i.ytimg.com/vi/Hf6LkqgXPMU/hqdefault.jpg> [Accessed 21 Feb. 2020].

THE HISTORY

In the 1970s a computer artist called Myron Krueger gave it the name 'artificial reality', but most people like the more popular term Virtual Reality, this is due to another computer artist called Jaron Lanier in the 1980s.



Myron Krueger. (n.d.). [image] Available at: <https://lh3.googleusercontent.com/proxy/i5KRX7r59jVwnVYAJ0lgSqVcBOc9WICf6RqWQorOrRVIRmB-YeL28SYb45ozYE55QQ0CCChjF3dv5rkXeR-1R7eDh3-3RV-srcg79nmBV8E-SDaevXw> [Accessed 21 Feb. 2020].



Sega VR. (n.d.). [image] Available at: <https://www.designnews.com/sites/default/files/Design%20News/SegaVR.jpg> [Accessed 21 Feb. 2020].

One of the first companies to attempt to sell a virtual reality headset was Sega, which then planned the Sega VR as an accessory for the Genesis. It started development in 1991 and continued for a few more years after that, the visor looked a lot like Robocop it had LCD displays, headphones and sensors. It was the first attempt at a mainstream Virtual Reality headset but Sega never released it as they were worried it was too real and it could potentially cause an accident.

THE HISTORY

in 2010 a 18 year old called Palmer Luckey had created the first prototype of the Oculus Rift, it had a 90 degree field of view which had never been done before in a consumer device, he had raised 2.4 million dollars on Kickstarter a few years later, before the company was purchased by Facebook in 2014



Oculus Rift. (n.d.). [image] Available at: https://static.bhphoto.com/images/images2500x2500/1567705040_1503554.jpg [Accessed 21 Feb. 2020].

In 2017 hundreds of companies are developing and working on their own version of a Virtual Reality headset and the popularity of virtual reality has grown massively, the competition for VR headsets grows with it, so companies try to find new innovative technologies to combine and make a better experience than their competitors



VR modern day. (2020). [image] Available at: <https://v9q3c2p3.stackpathcdn.com/wp-content/uploads/2019/04/oculus-quest-rift-s.jpg> [Accessed 21 Feb. 2020].

VR IN GAMES

This Fallout 4 game has been completely remade for Virtual Reality, this game really brings you into the world of fallout, giving a new way to play the original game, with a full story and is a good example of a modern-day Virtual Reality game. It brings in new elements to the game from what the previous version had and overall is a fun and immersive game to play.



Skydance Interactive (2020) The Walking Dead Saints and Sinners Available online at: https://store.steampowered.com/app/916840/The_Walking_Death_Saints_Sinners/

This is a game that has brought me back to my childhood through Virtual Reality, it fully emerges you into the world of star trek, it lets you explore different bridges of the star trek universe and also control the ship as well down to every detail with the buttons and it also has small stories to follow, but not only can you do all of that, you are able to play with up to 6 friends that will assist you in the mission, I thought this game would be good to play as it really emerges you into the world and it also has multiplayer which a lot of Virtual Reality games lack.

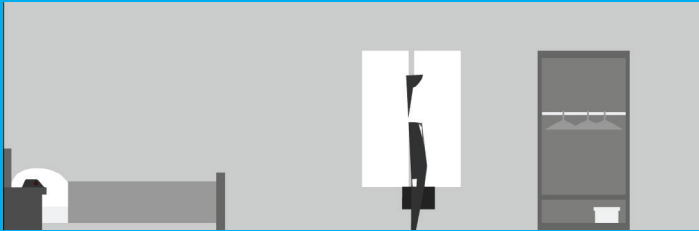


This is a very recent Virtual Reality game that has been released and is based on the TV show The Walking Dead, I have played some of it and, it is very detailed and really makes you feel like you are in the world that has been created, it has a great narrative with a lot of character development and multiple ways to play the game which would suit any players style of gameplay, this is the peak of Virtual Reality games and I believe this game is one of the best VR games on the market.



Ubisoft (2017) Star Trek Bridge Crew Available online at: https://store.steampowered.com/app/527100/Star_Trek_Bridge_Crew/

GAMES



Molleindustria, (2009) Everyday The Same Dream Available Online at: <http://www.molleindustria.org/everydaythesamedream/everydaythesamedream.html>

This is also a 2D game, but it has very impressive graphics and runs smoothly, there is some narrative to the game but not much to keep the player interested for long, it is a strategy game where you have to keep collecting resources and selling them so that you can continue playing, it throws obstacles at the player now and again to make it harder, but once you understand the game it is easy to predict and easy to keep going, there is no end goal so at a stage you feel like “what is the point” but is entertaining if you are bored and have nothing else to do for a while.



rasca, G., (2004) Madrid Available Online at: <http://www.newsgaming.com/games/madrid/>

This is a simple 2D game design, but it is very interesting, it is black and white game, with the exception of a few different items being colour, it makes the user think of how repetitive a daily job is, everything keeps happening the same way, you wake up late for work, and no matter how fast you try to get to work you still have to wait in the slow elevator, and also get stuck in traffic while also having a lot of walking to do, while you walk to your desk you see the same character you are playing, in all the office cubicles, this makes the player think that everyone has the same daily working office life, it is also simple to control by just needing to use the arrow keys and the space bar. This focuses on making the player think about what's happening and doesn't focus on gameplay but the message it is giving the user.



Wellcome Collection, (2011) High Tea Available Online at: <http://hightea.wellcomeapps.com/>

This is another simple game, it is basically a black and white 2d drawing and the only colour is the candle light, the challenge is to keep the candles alive as long as you can, this requires fast reactions to try and not let them burn out by clicking on them and the screen will keep on getting darker the longer the candle is left without being clicked, there is no narrative to this game but it requires thinking and I thought it was really interesting to try out.



Ensign Martinez



Cpt_Hargrove
Cmdr_Killian

LT_Carlyle

READING

Understanding Video Games

Bogost (2007). Persuasive Games. [ebook] pp.1,9,10. Available at: https://pdfs.semanticscholar.org/c660/45e159874e0679d81eaff726c0344fc4db3b.pdf?_ga=2.16659574.1150928565.1581074251-1875007133.1581074251 [Accessed 7 Feb. 2020].

In this paper Bogost goes into depth about video games and explains how they stand in our culture and how they can be persuasive for the player and have a form of expression, with the games intentions on making the player have a deeper emotional connection with the game which then would persuade the player spend more time playing the exact game, it could also persuade the player to change their attitude towards the real world and for them to develop different perspectives. "Videogames are an expressive medium. They represent how real and imagined systems work. They invite players to interact with those systems and form judgments about them. As part of the ongoing process of understanding this medium and pushing it further as players, developers, and critics, we must strive to understand how to construct and critique the representations of our world in videogame form (Bogost, I. 2007). I chose this paper as I believe if I am to have a game as my outcome for my project, I believe I need to understand the deeper meaning of games and the emotional impact it can have on a player if it is a well-developed game with a well-developed narrative.

Anthorpy and Clark (2015). A Game Design Vocabulary. [ebook] Available at:<http://ptgmedia.pearsoncmg.com/images/9780321886927/samplepages/0321886925.pdf> [Accessed 9 Feb. 2020].

In this paper it takes a deeper look at games and the design aspect of them, it helps me understand the importance of having the player able to learn controls easily but not drag it on and give them boring instructions on how to do some simple things that they will be able to learn throughout the game. "No game creator wants to put a tutorial into her game, to make the player press the jump button five times before being allowed to press the shoot button five times. A game creator puts a tutorial into a game because she lacks confidence in her ability to teach the player the rules of her game without explicitly stating them upfront. In a board or card game, it makes sense that the players should be aware of the rules upfront because they're the ones keeping the rules. But the great strength of digital games is that, because the computer is performing the task of enforcing the rules and tracking the numbers, the game can withhold some of the complexities (Anthorpy and Clark, 2015)". It also includes another important element of gaming which is language. "When we use meaningless words to talk about games, our ability to describe them becomes more confused; our language for describing them becomes less concrete. But we've bought into this sort of thing in a big way, the same way we've bought into the idea that a game is composed of "graphics," "audio," and "replayability." We're used to thinking of games in those terms, but who gave us those terms? (Anthorpy and Clark, 2015)". This paper helps me understand the importance of the player learning the game and also the language of describing the game and also in the game as well.

Schrank (2014). Avant-Garde videogames playing with technoculture. [ebook] pp.2, 24. Available at: [https://books.google.co.uk/books?hl=en&lr=&id=SZI-AwAAQBAJ&oi=fnd&pg=PR5&dq=Schrank,+B.,+\(2014\).+Avant-garde+Videogames:+Playing+with+Technoculture.+The+MIT+Press,+Cambridge,+Massachusetts.+PDF&ots=APhQG1dTPY&sig=FNYjc-xLnzo4naM7AdScG8zy4tY&redir_esc=y#v=onepage&q&f=false](https://books.google.co.uk/books?hl=en&lr=&id=SZI-AwAAQBAJ&oi=fnd&pg=PR5&dq=Schrank,+B.,+(2014).+Avant-garde+Videogames:+Playing+with+Technoculture.+The+MIT+Press,+Cambridge,+Massachusetts.+PDF&ots=APhQG1dTPY&sig=FNYjc-xLnzo4naM7AdScG8zy4tY&redir_esc=y#v=onepage&q&f=false) [Accessed 9 Feb. 2020].

In this paper Bogost goes into depth about video games and explains how they stand in our culture and how they can be persuasive for the player and have a form of expression, with the games intentions on making the player have a deeper emotional connection with the game which then would persuade the player spend more time playing the exact game, it could also persuade the player to change their attitude towards the real world and for them to develop different perspectives. "Videogames are an expressive medium. They represent how real and imagined systems work. They invite players to interact with those systems and form judgments about them. As part of the ongoing process of understanding this medium and pushing it further as players, developers, and critics, we must strive to understand how to construct and critique the representations of our world in videogame form (Bogost, 2007). I chose this paper as I believe if I am to have a game as my outcome for my project, I believe I need to understand the deeper meaning of games and the emotional impact it can have on a player if it is a well-developed game with a well-developed narrative.

Sicart (2020). beyond Choices: a typology of ethical Computer Game designs. [ebook] pp.1, 2. Available at:<https://pdfs.semanticscholar.org/c426/5ec9ae4a9a8feb88da349948b5a6c03f791f.pdf> [Accessed 9 Feb. 2020].

I In this article it explains the ethics of gaming and the importance of it, it allows me to understand that through the design of the game and the way it is set up determines the players way of making choices and the impact it can have. "Ethical gameplay is the ludic experience in which regulation, mediation, and/or goals require from the player moral reflection beyond the calculation of statistics and possibilities. This type of gameplay requires the understanding of games as objects with values embedded in their design (Latour, 1992; Winner, 1986), that establish a mode of relation with the player, limiting their agency in the game world with a pre-determined, designed purpose; it also requires the understanding of players as moral agents, capable of using ethical reflection to act upon choices in game experience (Sicart, 2020)". It is good to have knowledge of ethics in games so I can get a deeper understanding how the gameplay and design can affect the player.

Understanding Virtual Reality

Shin (2018). Empathy and embodied experience in virtual environment: To what extent can virtual reality stimulate empathy and embodied experience?. [ebook] Seoul, pp.3, 4, 6. Available at: https://fiona.hs-heilbronn.de/16582993/2017_donghee-pdf.pdf [Accessed 9 Feb. 2020].

In this article, it explains what Virtual Reality is and how it works. This gave me more of an understanding of VR and gives me more insight to it and how it works and what VR is all about. "Virtual reality (VR) is often used in storytelling. As it is considered an effective medium for interactive storytelling, the industry seems keen to introduce an interactive element into every VR piece. VR storytelling allows the user to enter a virtually recreated scenario that represents a story. Stories are produced as computer graphic virtual environments, which can be inserted into online virtual worlds and watched either conventionally on a monitor, or via fully immersive systems such as head-tracked display. VR is redefining the rules around narrative structure, character development, and storytelling. The goal of VR storytelling is to tell a story that will stimulate emotions that will influence action (Shin, 2017)". This article is useful as it goes into great detail about Virtual reality, not only explaining what it is, but the immersion it has and the storytelling potential it has. This will be helpful for me in my work as it will allow me to get a better understanding when I am creating my VR game.

Hupont (2015). How do new visual immersive systems influence gaming QoE? A use case of serious gaming with Oculus Rift. [ebook] pp.1, 2. Available at:https://www.researchgate.net/profile/Isabelle_Hupont/publication/282985882_How_do_new_visual_immersive_systems_influence_gaming_QoE_A_use_case_of_serious_gaming_with_Oculus_Rift/links/5686becd08ae051f9af42260.pdf [Accessed 9 Feb. 2020].

In This article it explains how virtual reality specifically Oculus Rift headsets influence games and how it is all about the players experience in the game and how it could be used for teaching purposes for students as well as a fun to play game. It also explains how it can be used to tell a story. It also looks at a simulator that teaches people. It also explains that they are always looking at new ways to develop VR and that it is difficult to create a good detailed VR environment Having looked at this paper it will keep me on the right path for my project while creating my VR experience.

Bogost (2008). The Rhetoric of Video Games. [ebook] pp.3, 4. Available at: http://www.arts.rpi.edu/public_html/ruiz/EGDFall10/readings/RhetoricVideoGames_Bogost.pdf [Accessed 18 Feb. 2020].

In this paper it looks at the gaming community and helps me understand it more about it, they all have their own culture and values, but they also identify as 'Gamers'. It also looks at the game animal crossing, where it is a simple game of collecting resources, creating a community of people and also with your friends. "We often think that video games have a unique ethos. Video game players have their own culture and values. Video game players often self-identify as "gamers" and devote a major part of their leisure time to video games. They discuss games online, follow new trends, and adopt new technology early (Bogost, 2008). This will help me have a more of an understanding of the gaming community and how social media connects the community together with new games that are coming out and also building fan bases for certain games, there is even companies for games that have their own social media so gamers can keep up with news about that certain game, anytime they want.

Tideman (2008). A new product design method based on virtual reality, gaming and scenarios. [ebook] pp.2, 3. Available at: <https://link.springer.com/content/pdf/10.1007/s12008-008-0049-1.pdf> [Accessed 23 Feb. 2020].

In this paper it talks a lot about the virtual reality experience and the different ways to make that experience, such as making it a simulation, making it a game with simple objectives to complete, having a narrative based walkthrough game, or you can use it for teaching purposes. It goes into detail about the game design process of it, it connects with the previous Virtual Reality papers I have looked at and it backs up everything about what the other books have said about the design process and different ways you can experience Virtual Reality. "A scenario is formed by a combination of elements from the environment database together with a task description. A stakeholder experiences a scenario by trying to perform the task in the simulated environment. From these experiences, the stakeholder identifies what he needs and/or wants. By combining elements from the technology database, the stakeholder can configure a candidate design with which he expects to fulfil his needs and desires (Tideman,2008)".

McMahan (2011). Exploring the Effects of Higher-Fidelity Display and Interaction for Virtual Reality Games. [ebook] pp.3, 27,97. Available at: https://vtechworks.lib.vt.edu/bitstream/handle/10919/30123/McMahan_RP_D_2011.pdf?sequence=1&isAllowed=y [Accessed 24 Feb. 2020].

In this paper it has great detail in most aspects of Virtual Reality, talking about the visual side of it, such as the resolution, field of view and frame rates, it allows me to understand how to build a 3D world just for virtual reality, creating user interfaces and also depending on what type of experience it is, I have learned a great deal about VR in this paper and it should be my main source as it is backed up with a lot of research and analyses, and also connects with the other papers I have looked at. "In addition to visual (sight) aspects, display fidelity also comprises auditory (hearing), haptic (touch), olfactory (smell), and gustatory (taste) aspects. Lists of components, similar to the above list, could be compiled for these other aspects of display fidelity by examining prior controlled evaluations and by considering the rendering software and display devices that are used to present these sensory stimuli to the user (McMahan, 2011)".

Steuer (1992). defining Virtual Reality: Dimensions Determining Telepresence. [ebook] Available at: https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1460-2466.1992.tb00812.x?casa_token=ub-pa44_We8AAAAA:c9vDx4Kob5Ou1BPPHeqJHhOQcEyMA34sRmHyHpBvQnDZdAqo3SUc2Tq-BXy9rQ9ef46cDVBtilxVaWNk [Accessed 24 Feb. 2020].

This paper explains the dimensions involved in Virtual reality explaining how the lenses work and how 3D audio works as well, and I found this very useful as I need to know how audio works in VR world and put it into the one, I am creating. "The key to defining virtual reality in terms of human experience rather than technological hardware is the concept of presence (Steuer,1992)".

Looking into the narrative

O'Leary (1999). To Die For: The Paradox of American Patriotism. [ebook] pp.3,7, 8. Available at:

https://books.google.co.uk/books?hl=en&lr=&id=Vg5dDwAAQBAJ&oi=fnd&pg=PP1&dq=american+patriotism&ots=R-dT2daQ72&sig=ApOXiHjaOxU4p-cJ-0GT_tSxTLI&redir_esc=y#v=onepage&q&f=false [Accessed 18 Feb. 2020].

In this paper it looks at what it is like to be an American, dating back to the American Civil war when the survival of the United States was at stake. It helps me understand how propaganda was used back then through the use of the government and the new advertising industry that was rapidly spreading, it also talks about the origins and the development of patriotism through national anthems and emblems. It is the beginning of helping me understand a narrative for my project that I will have to be careful with in the case of being biased or offensive to other cultures. This book gives me a deeper understanding of patriotism and how propaganda fits in with it. "In the United States, where being an American is seen as a choice rather than a birth right, control over nationalist discourse has far-reaching consequences. For patriots, loyalty and family, friends, church, and place are subsumed under allegiance to one's country on the assumption that each citizen's welfare can best be realised through the preservation and expansion of the nation-state (O'Leary, C. 1999)".

Miller (2007). Unlearning American patriotism. [ebook] pp.1,2,3,5. Available at: https://journals.sagepub.com/doi/pdf/10.1177/1477878507073602?casa_token=layfu93LclKAAAAA:bU04uE6kgG4VqVnruQRG-MzNA8vRN2hmEiGFFcWB6RupPVEQ7ktMGazutwH2wEyCUHfHySEbm8Qr [Accessed 23 Feb. 2020].

In this paper it takes a look at the American foreign policy and also analyses the term "American Empire", it gives a basic understanding of how every country seeks to instill patriotism in the classroom, and how teachers could change that but at the cost of social expectations in every level of American education. "By 'the American empire', I mean the global superiority of the US government in three mutually reinforcing types of domineering influence. In the first place, the United States far exceeds other countries in the global impact of prerogatives, i.e. capacities to pursue interests regardless of costs to others on account of America's importance in joint arrangements which, as a whole, answer to shared needs. The prime examples are US prerogatives due to the pervasive use of the dollar and American financial instruments (Miller, 2007)". I have heard of the term 'American Empire' before, but didn't really understand it, this paper gives me more of an insight into it, and helps me understand that there is a number of reasons for the term, due to America being a global superpower. "Where else but in the corridors of power and the regimented disputes of electoral competition might means of reducing the global injustices of the United States be found? The Vietnam era suggests an answer. At crossroads that could have led to vaster destruction, the taking of a much less lethal path was due, in significant part, to extra-electoral attacks on the morality of the war that inspired doubts as to the goodness of the pursuit of American power (Miller, 2007)".

Winter and Winter (2008). Sowing Patriotism, But Reaping Nationalism? Consequences of Exposure to the American Flag. [ebook] pp.3, 4, 5. Available at: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1467-9221.2008.00670.x> [Accessed 23 Feb. 2020].

In this article it looks at the national emblems of a nation, and that the flag is the core of a nation, as it represents, their culture, achievements and their history, it takes a look a deeper look at the American flag and what it represents, it also explains how the American flag can be represented on government buildings, sports events and even in places of worship, that shows at the core of the culture the flag is there. "National symbols acquire their symbolic meaning through various means, including their metaphorical qualities, e.g., the 50 stars of the U.S. flag representing the 50 states. More importantly, however, national symbols achieve meaning through the ways in which they are embedded in various cultural practices (e.g., Marvin & Ingle, 1999). For instance, in the United States most elementary school children recite the Pledge of Allegiance to the flag, through which an explicit link between the nation-state and the American flag as symbol for the nation is forged. (Winter and Winter, 2008)". This will help me understand more about national emblems and the deeper meaning of them.

Merry (2009). Patriotism, History and the Legitimate Aims of American Education. [ebook] pp.2,3,4. Available at: https://www.tandfonline.com/doi/pdf/10.1111/j.1469-5812.2007.00363.x?casa_token=T7wxSaNif_kAAAAA:HI+MbPvspK7OP_IYAs56vmZR7oqRrAL1tsj1GJUfB1tS4bbMYOWowjEnXQ9WcDPw3r5GryfT-zcz [Accessed 23 Feb. 2020].

In this paper it looks into the American education system and promoting patriotism in schools, and how small bits of patriotism is okay to form a national and cultural identify, but you need to be careful because these are kids and are too young to really know and understand patriotism. "While there are real perils in promoting patriotism in schools, here are at least two reasons why I will venture to defend a variant I call critical patriotism. First, we are unlikely to see a realistic diminution of patriotic activity in American schools, and second and more importantly, I will show that having special attachments to one's homeland may not spoil one's capacity to think critically about those attachments (Merry, 2009)". From reading this article I understand more about the American education system and how they install small bits of patriotism in their education system such as the pledge of allegiance before they start their morning class."

Ishio (2010). Social Bases of American Patriotism. [ebook] pp.2,3,5. Available at: https://journals.sagepub.com/doi/pdf/10.1177/0011392109348546?casa_token=sFfScR8jjVUAAAAA:illcNA_ChrBL14hUw7_OVpgCP4xG6ESsuWFVLXCQeZTdSRd2LWZuigigZTlqfMm6VubEPAV2-QQ8 [Accessed 23 Feb. 2020].

In this paper it breakdowns patriotism to different groups, making it easier to understand, and different perspectives on patriotism, understanding this is essential because I need to know different types of patriotism and learning to be neutral while talking about these in case of being biased or offensive towards someone so this paper connects with the first paper I had looked at for which was 'To die for' and helps me understand a bit more about it, giving me an idea of how to proceed with my project. "The group dominance perspective in its original framework attempts to explain differences in patriotism between different racial/ethnic groups in a country (Peña and Sidanius, 2002; Sidanius et al., 1997). According to exponents of this perspective, members of dominant racial/ethnic groups tend to have strong patriotism, while members of subordinate groups tend to have weak patriotism (Ishio, 2010)".

Westheimer (2006). Politics and Patriotism in Education. [ebook] pp.3,4,5. Available at: https://journals.sagepub.com/doi/pdf/10.1177/003172170608700817?casa_token=h6djIM7T6SsAAAAA:u2HmftEU1j92Fh2s38tN_wRcNtCiGHw6UiJ-NZGWi9_6PFbWfQKJwHdto2aTXxQYfy-j4CBwfGtA [Accessed 23 Feb. 2020].

In this article it has a bit of a mixture of what has already been covered but it goes into greater detail into the different types of patriotism and education and also the different types of it, and how it works in a democratic 21st century society, it will connect to all the papers I have looked at covering propaganda. "But politics is not a four-letter word. Patriotism, if it is to reflect democratic ideals, needs politics. In a lecture on citizenship in the 21st century, Harry Boyte, co-director of the University of Minnesota's Center for Democracy and Citizenship, argued that politics is the way people with different values and from different backgrounds can "work together to solve problems and create common things of value (Westheimer, 2006)".

PATRIOTIC ELEMENTS

Looking at National Symbols

The Flag

The American flag is the first national symbol that people look up to, that any country would look up to. The flag represents the culture and history of the United States, with the stripes representing the original 13 colonies, while the stars represent the 50 states of the union, the colours also have deeper meaning to it, and this makes the average American identify with the flag and also feel a sense of nationalism.



n.d. The Great Seal. [image] Available at: <https://upload.wikimedia.org/wikipedia/commons/5/5c/Great_Seal_of_the_United_States_%28obverse%29.svg> [Accessed 17 March 2020].



n.d. The American Flag. [image] Available at: <<https://mail.google.com/mail/?tab=im1>> [Accessed 13 March 2020].

The Seal

This seal has been used since the declaration of independence and is well known, as it is used to authenticate documents and messages sent by government officials, I can interoperate this into my project by having messages play by the US government.



n.d. Bald Eagle. [image] Available at: <https://upload.wikimedia.org/wikipedia/commons/1/1a/About_to_launch_%2826075320352%29.jpg> [Accessed 17 March 2020].

North American Bison

The North American Bison is the national mammal of the United States, they are a big part of American history and culture, there used to be millions of them now you see them in museums or in books, I could showcase this in two ways, one being showing them off as the national mammal and the other way is to show what the Americans had done to them in an authoritarian way.



2020. National Motto. [image] Available at: <https://upload.wikimedia.org/wikipedia/commons/thumb/9/96/US_one_dollar_bill%2C_reverse%2C_series_2009.jpg/563px-US_one_dollar_bill%2C_reverse%2C_series_2009.jpg> [Accessed 17 March 2020].

Bald Eagle

The Bald Eagle is the most known national symbol, Americans see this bird as a symbol of freedom, and is the emblem of the United States, you will be able to see this symbol everywhere. Incorporating this into my project in a democratic way and an Authoritarian way should be a challenge but I can find a way to make it work.



2020. North American Bison. [image] Available at: <<https://www.hww.ca/kaboom/images/Mammals/North-American-Bison.jpg>> [Accessed 17 March 2020].

The National Motto

The National Motto was introduced in 1956 by President Dwight D. Eisenhower, but the phrase was put on American coins in 1864 and now it's on all of the American currency and is also used in the religious aspect as well, and I can introduce this in my project and show it off in a free way where you can choose to ignore it, or where you are in a more controlled environment and have to look at it.

National Flower

The national Flower is the Rose, it became the national flower in 1986. The Rose can be seen as love, beauty and peace which I can show in my project in the democratic environment but it can also represent war and politics which can also be shown in the authoritarian side of my project.



n.d. National Tree. [image] Available at: <https://upload.wikimedia.org/wikipedia/commons/e/e6/Keeler_Oak_Tree_-_distance_photo%2C_May_2013.jpg> [Accessed 17 March 2020].

The National March

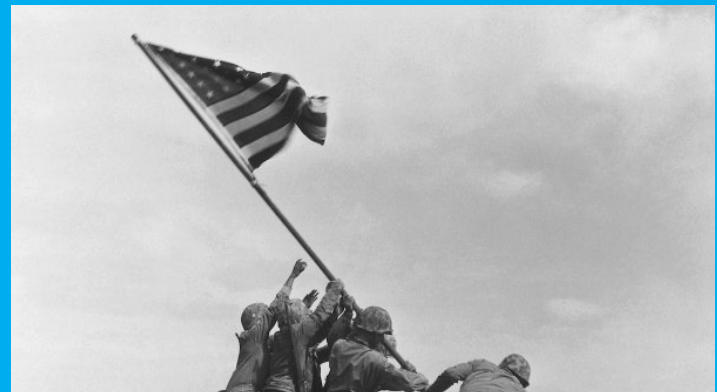
The national march is known as 'The Stars and Stripes Forever' this is usually played at military parades and events, and sometimes at government events such as the inauguration of a new president, this is the most patriotic march in America and this could be used in a democratic way or a more controlled way which I will showcase in my project.



2020. National Flower. [image] Available at: <<https://statesymbolsusa.org/sites/statesymbolsusa.org/files/primary-images/Rose-NationalflowerUSA.jpg>> [Accessed 17 March 2020].

The National Oak Tree

The oak tree is The tree symbol of the United States, it is a very small part, but it I need to look at all the elements of the American identity so I can cover all of it, The oak tree became the national tree symbol in 2004.



n.d. National March. [image] Available at: <<https://api.time.com/wp-content/uploads/2015/02/iwo.jpeg?w=600&quality=85>> [Accessed 17 March 2020].



n.d. Uncle Sam. [image] Available at: <<https://c8.alamy.com/comp/DOXK0A/world-war-i-american-recruitment-poster-uncle-sam-war-savers-back-DOXK0A.jpg>> [Accessed 17 March 2020].

Statue of Liberty

The Statue of Liberty is not only known to Americans, but to people around the world, it was given to America by the French as a sign of friendship and their shared desire for liberty, it has a much deeper meaning now, it stands as a symbol of freedom that echos around the globe and this is something I need to showcase in the democratic side of patriotism.



n.d. Liberty Bell. [image] Available at: <https://upload.wikimedia.org/wikipedia/commons/thumb/0/08/Liberty_Bell_2008.jpg/1200px-Liberty_Bell_2008.jpg> [Accessed 17 March 2020].

Uncle Sam

This is a very recent Virtual Reality game that has been released and is based on the TV show The Walking Dead, I have played some of it and, it is very detailed and really makes you feel like you are in the world that has been created, it has a great narrative with a lot of character development and multiple ways to play the game which would suit any players style of gameplay, this is the peak of Virtual Reality games and I believe this game is one of the best VR games on the market.



n.d. Statue Of Liberty. [image] Available at: <https://www.history.com/.image/t_share/MTY1MTc1MTk3ODI0MDAxNjA5/topic-statue-of-liberty-gettyimages-960610006-promo.jpg> [Accessed 17 March 2020].

Liberty Bell

This is the most important American symbol in history, it is the symbol of their independence and will need to be interoperated into my [project somehow on both sides.

The 5 Perceptions

Identifying the 5 perceptions

1. The perception that one's personal values correspond to one's country's values

Ishio talks about the 5 group dominance perspectives, which outlines a person's patriotism and beliefs. The first one is that someone's values for what they believe are in the same path as the country they live in. That is why people had immigrated to the United States, to live 'freely'.

2. The perception that one's interests are represented by the government.

Of course the government will represent the most dominant group, which in America that would be the typical white male American, while other smaller minority groups such as Mexican or Asian groups could sometimes be ignored, as the government would want to represent the most dominant group mostly forgetting about the minority groups.

3. The perception that one contributes to the workings of one's country.

The saying is 'I'm following the American dream' which the majority of Americans would aspire to, always working hard to climb to the top, but now that mostly represents the most dominant group which seem to be white males in the United States, yet again sometimes forgetting the minority groups which you don't see as successful sometimes.

4. The perception that one is treated equally by one's country.

America has always been known to the world as a the beacon of liberty and freedom, where all men are treated equally, while this is the case, some minority groups could be ignored by the government.

5. The perception that one benefits from the citizenship of one's country.

All Americans would benefit from the full citizenship of the United States, from travelling to receiving benefits but Ishio examines that some groups could be ignored due to race/ethnicity with some might not even holding passports or a full citizenship.



CLASSROOM ELEMENTS

The typical high school classroom

The chairs and desks

The chairs that are usually seen in an American high school would be the single one person chair that would also be connected with a desk. I believe I could design one of these chairs on Unity or Blender, giving a more authentic look into the classroom instead of designing an ordinary desk and chair referring to Bogost's work on the importance of design in the virtual world.



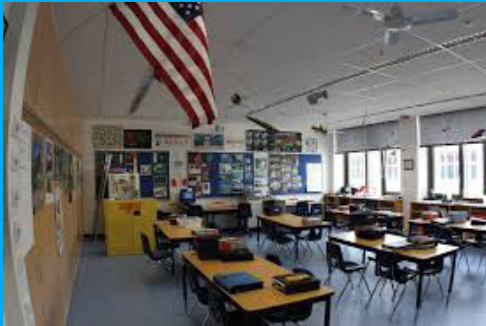
n.d. [image] Available at: <<https://www.google.com/calendar?tab=ic>> [Accessed 20 April 2020].



2020. [image] Available at: <<https://encrypted-tbn0.gstatic.com/images?q=tbn%3AANd9GcSLYrZHgOES4WUitUkz2TXKbVivBcEyxBBA01CnLUtVKcLQn-L2l7&usqp=CAU>> [Accessed 20 April 2020].

Blackboard and TV

Every classroom has a blackboard, I could easily design a 2D model on illustrator and then import it into Unity and expand it to 3D, I could then also create chalk and a rubber, so there could be writing or drawing on it and the player would be able to add to it or remove it. Some classrooms have TV's and it could be possible to create it and also use it as a source to play a video.



n.d. [image] Available at: <<https://encrypted-tbn0.gstatic.com/images?q=tbn%3AANd9GcThBy5KOMRJXnPsmK9PPY7yqnY0u17o78dU-3IMCy2UAagNOgnU&usqp=CAU>> [Accessed 20 April 2020].

Other elements I could add

Other elements that I could add would be textures for the floors, walls and ceilings, and also textures for all of the 3D models I plan to create.

Flag in Classroom

For the classrooms in my project the flag will be necessary to showcase American patriotism, and there is proof that some classrooms do have the flag inside them, this could be added to some of my virtual programmes and I can design it on Illustrator and create a 3D model in Unity itself for the use of the flag.

Designing these elements

I will start the foundations of the building and the rooms in Unity, while also creating a lot of the 3D elements on Unity as it is easier to manage than Blender, but some of the fixed 3D objects will be created on Blender that just need a bit more attention to the detail. Illustrator will be used to design the textures for all of my models and elements.

The typical high school classroom

Projector

Another element that you would find in most classrooms would be projectors, this could also be another way to showcase a video by having the projector point at the blackboard and have lights turn on the machine to make it look like the video is actually being played from it.



n.d. Projector. [image] Available at: <https://www.projectorreviews.com/wp-content/uploads/2020/03/NEC-MC372X-760x460_center_center.jpg> [Accessed 20 April 2020].



n.d. Classroom Speaker. [image] Available at: <<https://www.zenitel.com/sites/default/files/product-images/1023301310.jpg>> [Accessed 20 April 2020].

Speaker

Having elements that play video is a good step, but having an element that would also be able to play audio such as speeches or announcements could make the experience feel more alive and also feel more in depth.



n.d. [image] Available at: <<http://data:image/jpeg;base64,/pgR/6YA3s+3DxJSNHWJ3efqpyx7pyiD9U/CYcZDPAnm5S5gEjE3KGWYod-2KiNFHd6PDq8H7p8S30SmMGxwQBubDB/MJ8ihPizcZ5mXCIfUpb0zvY0/xF>> [Accessed 20 April 2020].

Items for teachers desk

The teachers desk should be full of items, which I have listed some of them, it should be full of detail and be fun to explore around.

Locker

I have to think about the places outside of the classroom as well, because I don't want the user just to walk out of the rooms into an empty hall, maybe I could make some of the lockers intractable in where you could open and close there could also be notebooks and pencil cases inside them just to add to the attention of detail.

1. Apple
2. Mini flag
3. Books and folders
4. Pens and pencils
5. Phone
6. Computer/ Laptop



n.d. Flag Pole. [image] Available at: <https://encrypted-tbn0.gstatic.com/images?q=tbn%3AANd9GcRExUTzwUIUmuzpv3Oud_nentv4uq-iyJv9ji80j3FPEeSW5JO5&usqp=CAU> [Accessed 20 April 2020].

Flag pole

The typical American high school has a flag pole near the entrance of it, I could possibly create a window where you can see this, as the experience will only take place in the inside of the building.

PATRIOTISM

Democratic Patriotism

National Identity

The democratic way of a national identity is that it is not forced upon you if you tick all the boxes like O'Leary states "In the United States, where being an American is seen as a choice rather than a birth right, control over nationalist discourse has far-reaching consequences. For patriots, loyalty and family, friends, church, and place are subsumed under allegiance to one's country on the assumption that each citizen's welfare can best be realised through the preservation and expansion of the nation-state (O'Leary, C. 1999)".

You have a choice

You have a choice to do what you want, to listen to what you want and to watch whatever you want. You also have a choice of believing in what you want.

Minority groups

Minority groups won't be completely forgotten about at all, they will have the same privileges and rights as any other citizen where their voice will also be heard.

Justice

The justice system won't be prejudice against any race or ethnicity and will allow for everyone to have the same rights.

Stability

Democratic patriotism is seen as what keeps the political sphere stable, by containing the left wing and right wing movements, but sometimes it doesn't always work.



PATRIOTISM

Authoritarian Patriotism

Its put in your face

When patriotism is in control by an authoritarian government, it could be easily spread to the citizens, by TV, newspapers and social media, where there isn't really an escape from it.

The dominant social group is shown to be 'True American'

The American flag is the first national symbol that people look up to, that any country would look up to. The flag represents the culture and history of the United States, with the stripes representing the original 13 colonies, while the stars represent the 50 states of the union, the colours also have deeper meaning to it, and this makes the average American identify with the flag and also feel a sense of nationalism.

State Religion

This seal has been used since the declaration of independence and is well known, as it is used to authenticate documents and messages sent by government officials, I can interoperate this into my project by having messages play by the US government.

Very strong sense of national identity

This seal has been used since the declaration of independence and is well known, as it is used to authenticate documents and messages sent by government officials, I can interoperate this into my project by having messages play by the US government.

Right or Left wing political regime

This seal has been used since the declaration of independence and is well known, as it is used to authenticate documents and messages sent by government officials, I can interoperate this into my project by having messages play by the US government.



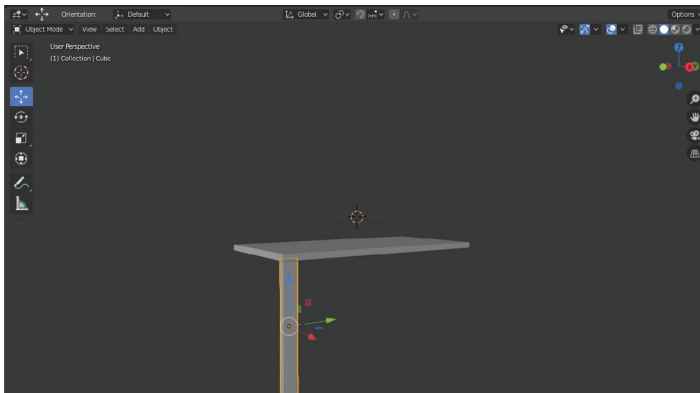
PLANNING

BLENDER

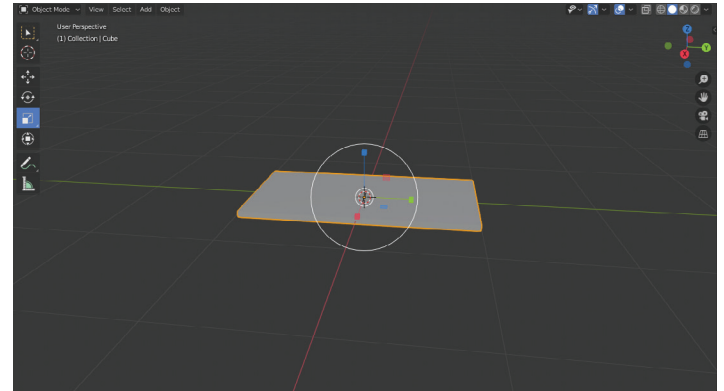
Creating Models

I have never used blender before, but after looking at a number of tutorials I have started to understand the basics of it and I have started creating some elements so that i can export them into unity.

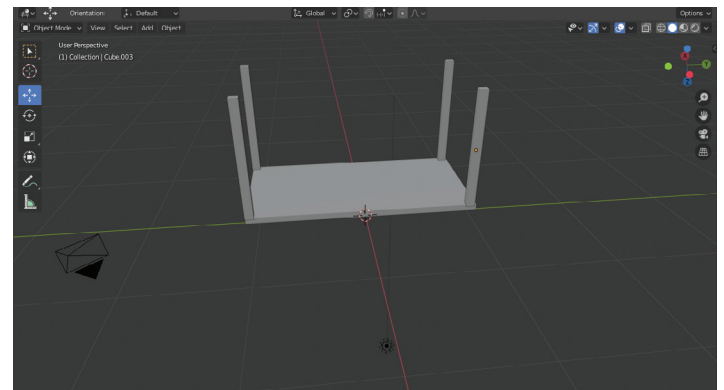
I have started to create a simple table, so that I will be able to put objects on it when I import it into unity.



I then made sure that the legs were in the perfect position, I then learned how to join all of the elements together to just make the one, i then rendered it, so it was ready to be tested in unity.



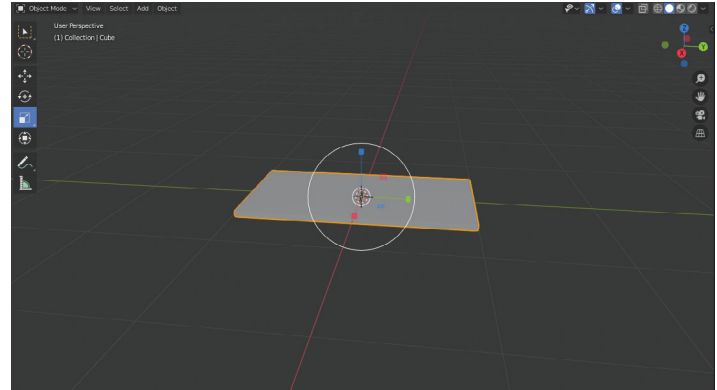
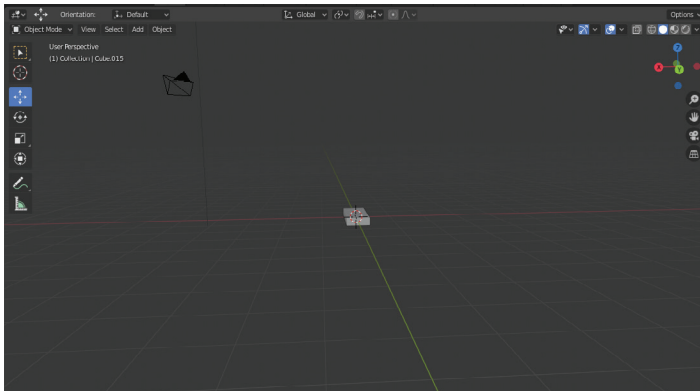
I Had changed the cube by making it a flat plane, I then had duplicated the plane and changed it to make it the leg, I then shaped it a little more and then I duplicated 3 more of them and put them in the same position in each corner of the table.



BLENDER

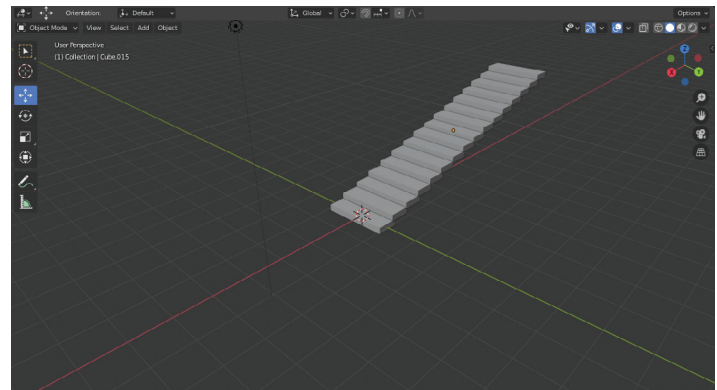
Creating Models

I then decided to try and create stairs, so if I wanted to create different levels, the player would be able to walk up or down them. I started with the flat plane.



I had made it taller and smaller to look like a step, but not too tall, the player will need to go up and down the stairs smoothly without getting caught in them.

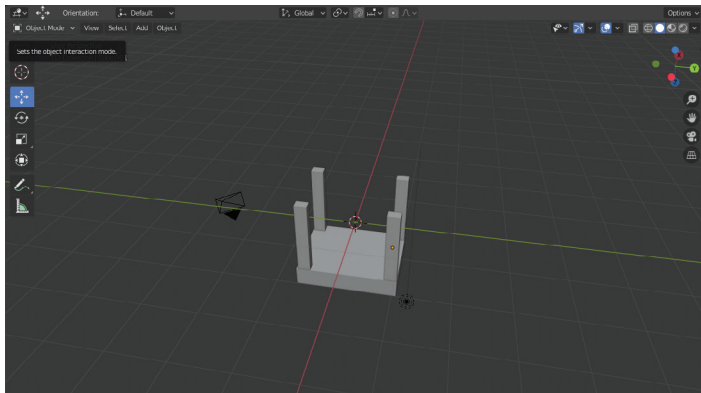
I then duplicated the same block and placed them on top of each-other making sure they were all the same length, I then joined them into one element and rendered it so that it is ready to be exported into Unity.



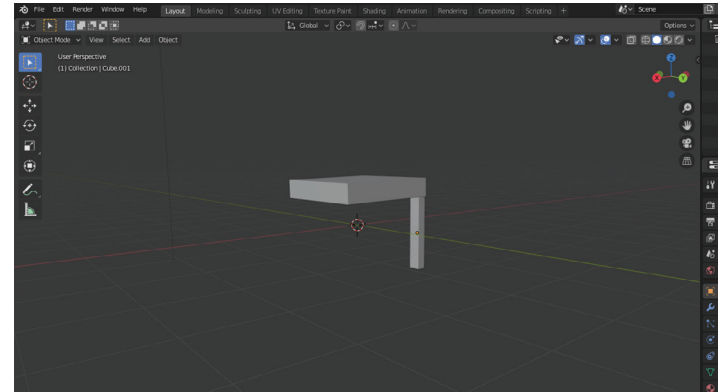
BLENDER

Creating Models

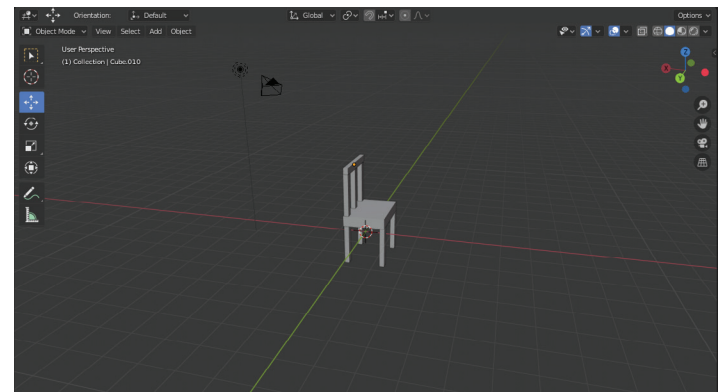
The next model I started to design was a chair, I started to flatten the cube and then duplicate it and then create a leg from it and position it under the flattened cube, like I did with the table



I had made changed the cube on top to make it smaller and flatter, i then took some of the legs and changed them and put them on the top part, I then started to create a basic chair, and is now ready to be exported to Unity.



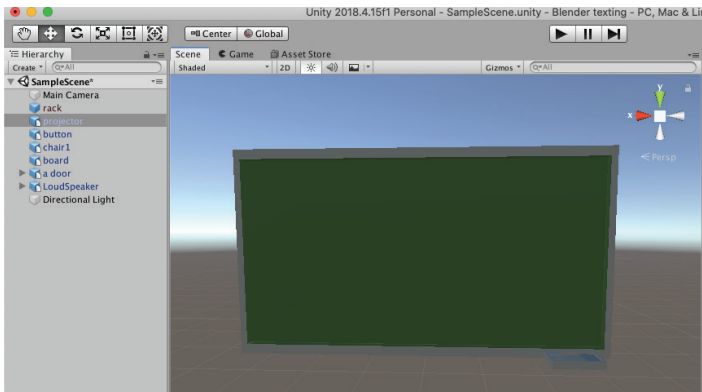
I then copy and pasted three more legs and put them around each corner and changed the size of the legs so that when I'm in unity the object wont be too big.



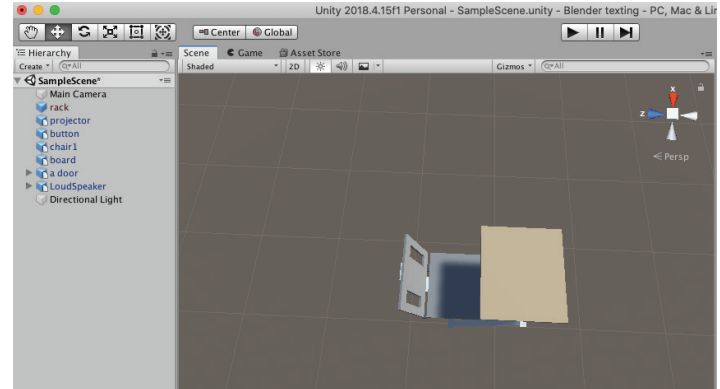
UNITY

Creating Models

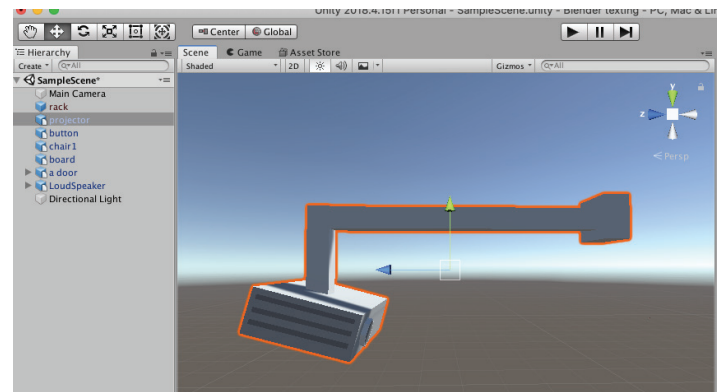
Creating classroom elements was the next step and I had looked at different classrooms in America and they all had the same classroom table and hair, that were both connected.



If I was to include videos in my VR experience I would use the projector to play them onto the blackboard, making it look like the video is coming from the projector rather than out of nowhere this is inspired by Bogost's work, having the design of the element meaning something and have a purpose, persuade the user that the video is actually being played from the projector and is also a reference to Shin's work as it add an interactive element to the storytelling, as the user will have to find it and trigger it themselves.



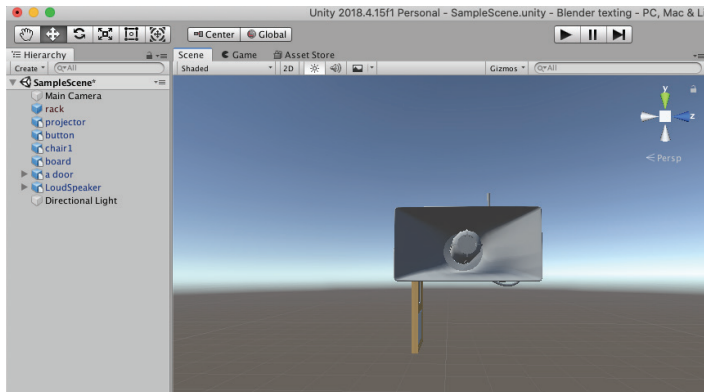
The next element I had created was a blackboard as every classroom has one, and it could have writing on as well. This is a reference to Bogost's work, making the design of the game feel real to the player like they are in the actual environment.



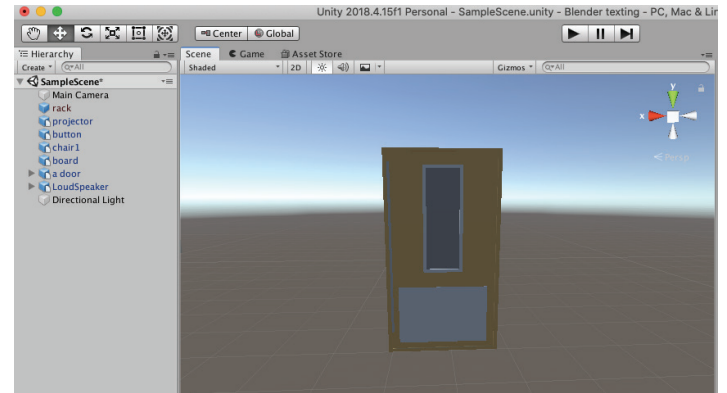
UNITY

Creating Models

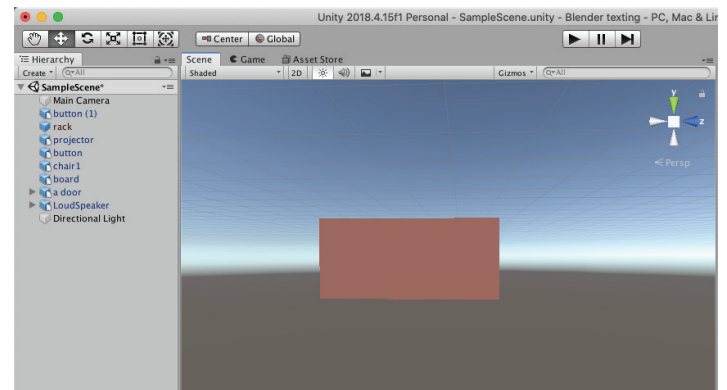
Getting in and out of classrooms, you would need a door, and this was the perfect model for that, as I have looked at the typical doors in American classrooms and had decided that this was the best fit for my environment. and it could also act as a trigger, the design of it fits into Bogost's work, Shin's work and McMahon's work as it is designing the 3D world and also adding an element of interactivity, as the player will be able to open and close the door.



Having a button that could trigger an event if the user pressed it could work, it could act as a fire alarm or many other ways it can be used for the user to explore. This is a reference to Shin's work as it could be an interactive element I could add anywhere that would encourage the user to press it as it will be highlighted when the user will hover over it like every other interactive element.



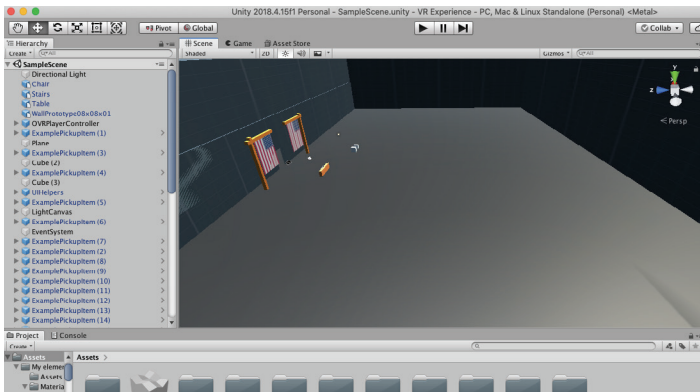
If I was to add audio sounds such as someone speaking I could have the source of the audio coming from a speaker, as most American classrooms have these for speeches and when the principal talks, this is a reference to Steuer's work, with 3D audio and also Bogost's work making the design of the speaker look realistic.



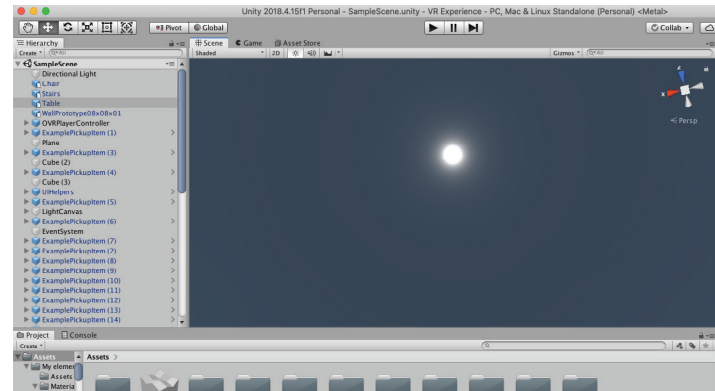
UNITY

Mapping it out

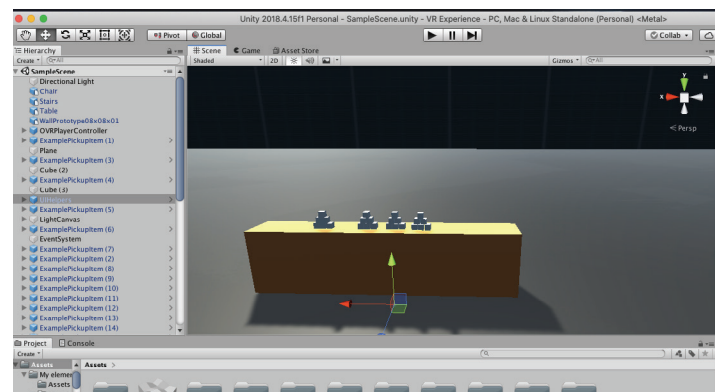
From Bogost's work, the design of the environment is very important and McMahan's work on the 3D Environment, I have created the atmosphere, not too bright as it could hurt someone's eyes, and I have also added a small sun in the sky. Since the game is based inside a school I wouldn't have to spend a very long time on the detail of the sky, as long as the user can look out the window and only can see small portions of it, it will also help the performance of the game as it won't take a lot of CPU power with the sky I have created.



A reference to Hupont's work, at the start I want to quickly teach the basic controls of Virtual Reality with an optional tutorial and a reference to Tideman as I will create a scenario of having the user practice picking up random objects and interact with different elements so they know what they will be doing and get the full experience of my proposed project.



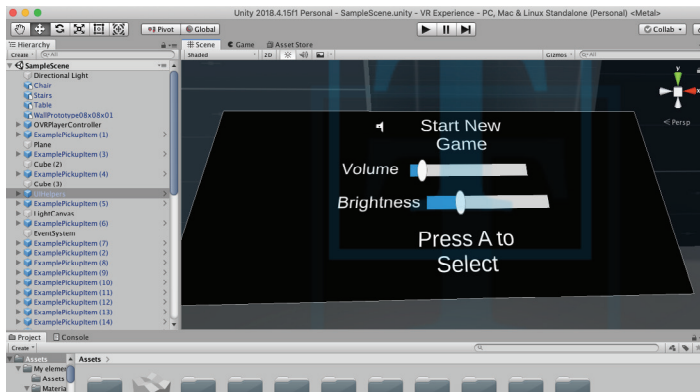
This is the first room I have created, it will be the spawning in room. It won't be as large as this as this was just a test run, This is a reference to Tideman's and Shin's work for Virtual reality, new users will need to be aware of how to use the controls, so there will be a few UI screens they will see that tells them how to move the character and interact with objects. This is where they will start the experience and once they leave this room, the experience will start. The user will also have the option of turning the volume up or down and the brightness of the game will have the same option. Another option will be to restart the experience all over again and that will reset everything back to what it was at the beginning.



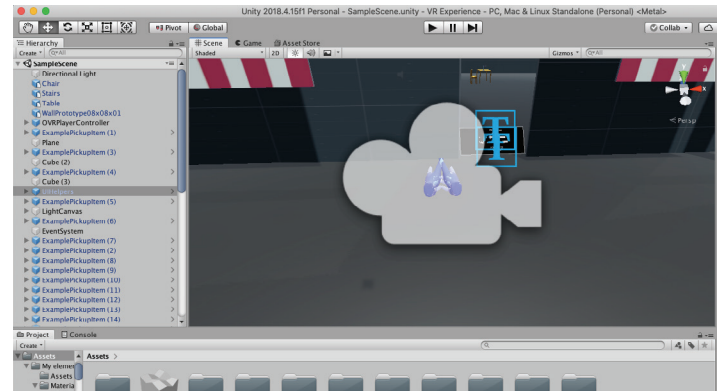
UNITY

Mapping it out

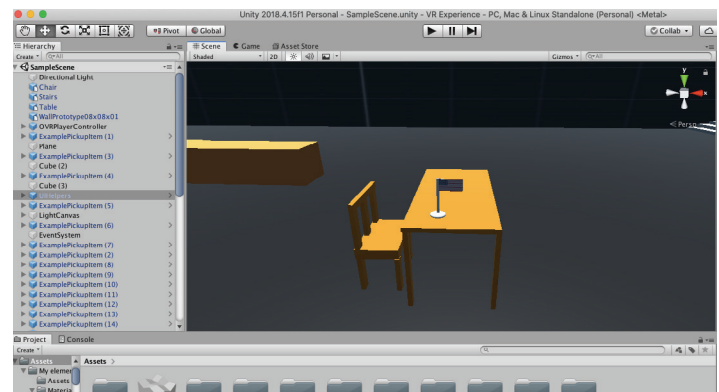
Creating the colour of the custom hands that I have made, I have made them transparent and over layed them with a light blue so they are still visible, a reference to Bogost as the design of the hands is a very important part in my game as the user will see them at all times.



I had imported some designs into unity and played around with them, putting different textures on them, and also elements that I could put on the teachers desk to make it look and feel more authentic.



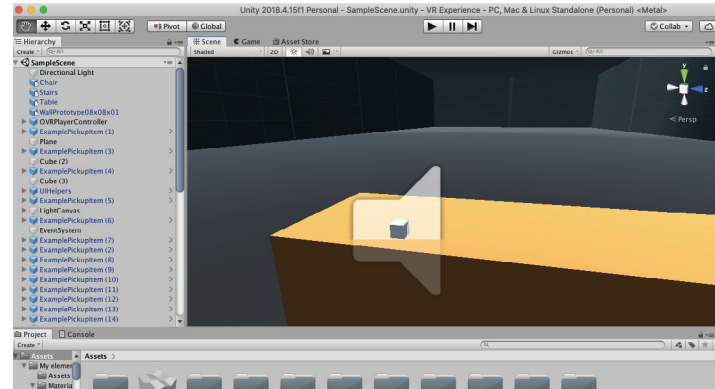
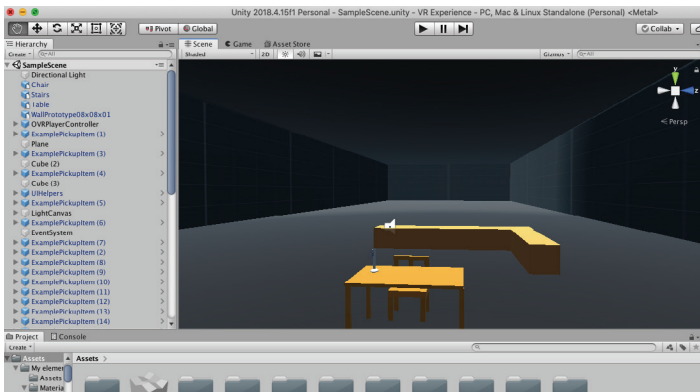
Having UI is very important as it allows the user to interact with the different options of the game and to see extra details about the environment or their character. The first UI I have created is the first thing the user will see, an option to restart the game, options for volume and brightness and a hint on how to select the options, other UI screens will be seen throughout the spawn in room on the optional tutorial. A reference to Tideman's work as having a scenario will require the user to know what they are doing



UNITY

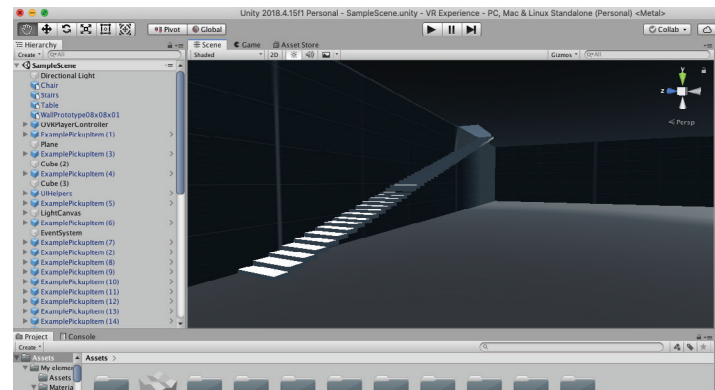
Mapping it out

From Steuer's work, he has made it clear that 3D audio in virtual reality is very important as you want to walk away from the source and hear it fade or get closer and hear it get louder, I have played around with it and tested it out, all that is left to do is add it to the speakers and use code to trigger it to play.



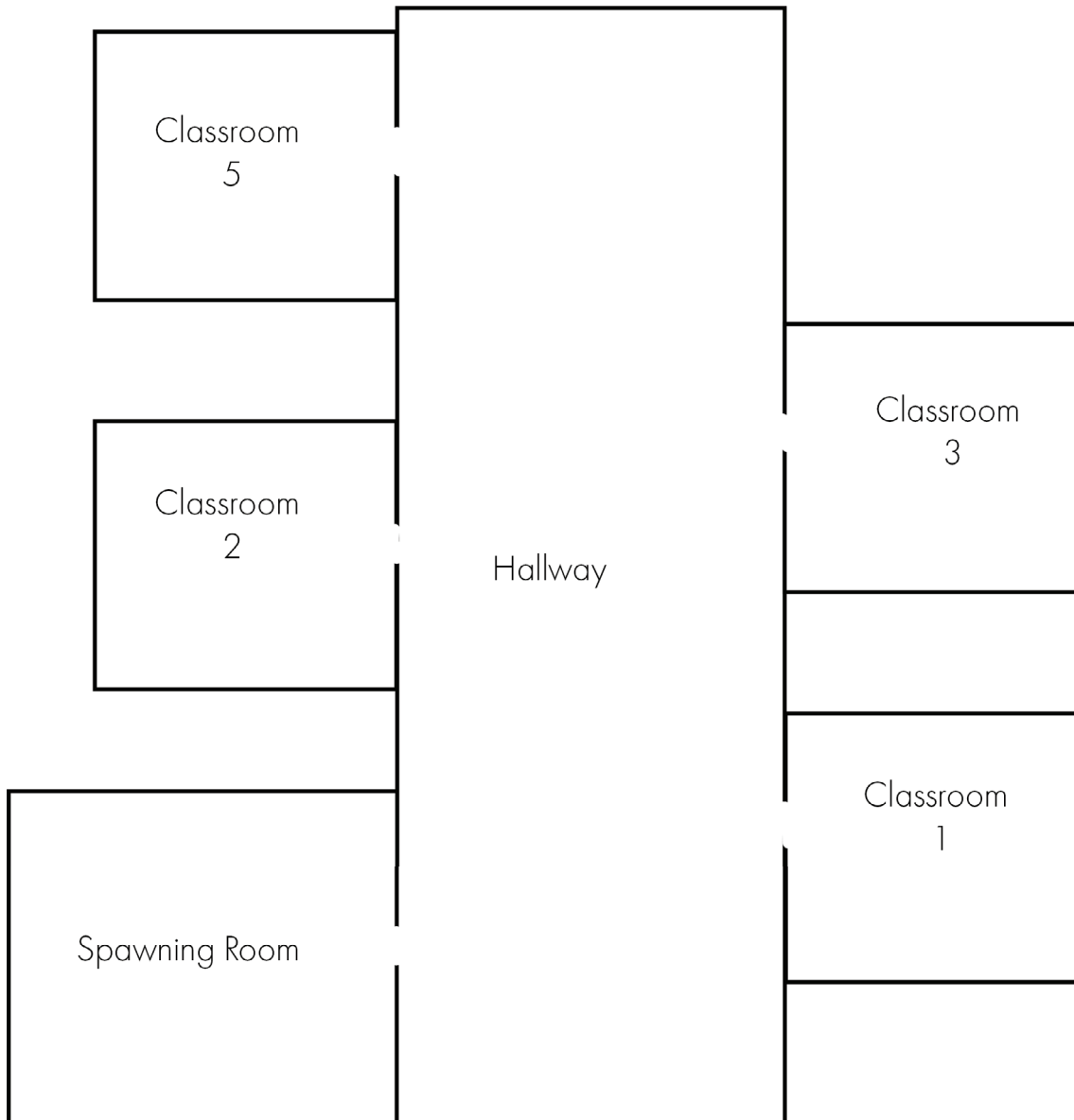
Creating the hallways is the next step of the design, and testing out different elements and also testing out different ways of lighting the room inside.

I have tested out the staircase and it works when the user wants to go up or down the stairs, this might not be necessary but if i wanted to add a longer way to get to a classroom that would be on the floor above it would expand the experience and make the user feel like they are exploring a lot more than just one hallway and a 3-4 classrooms.



UNITY

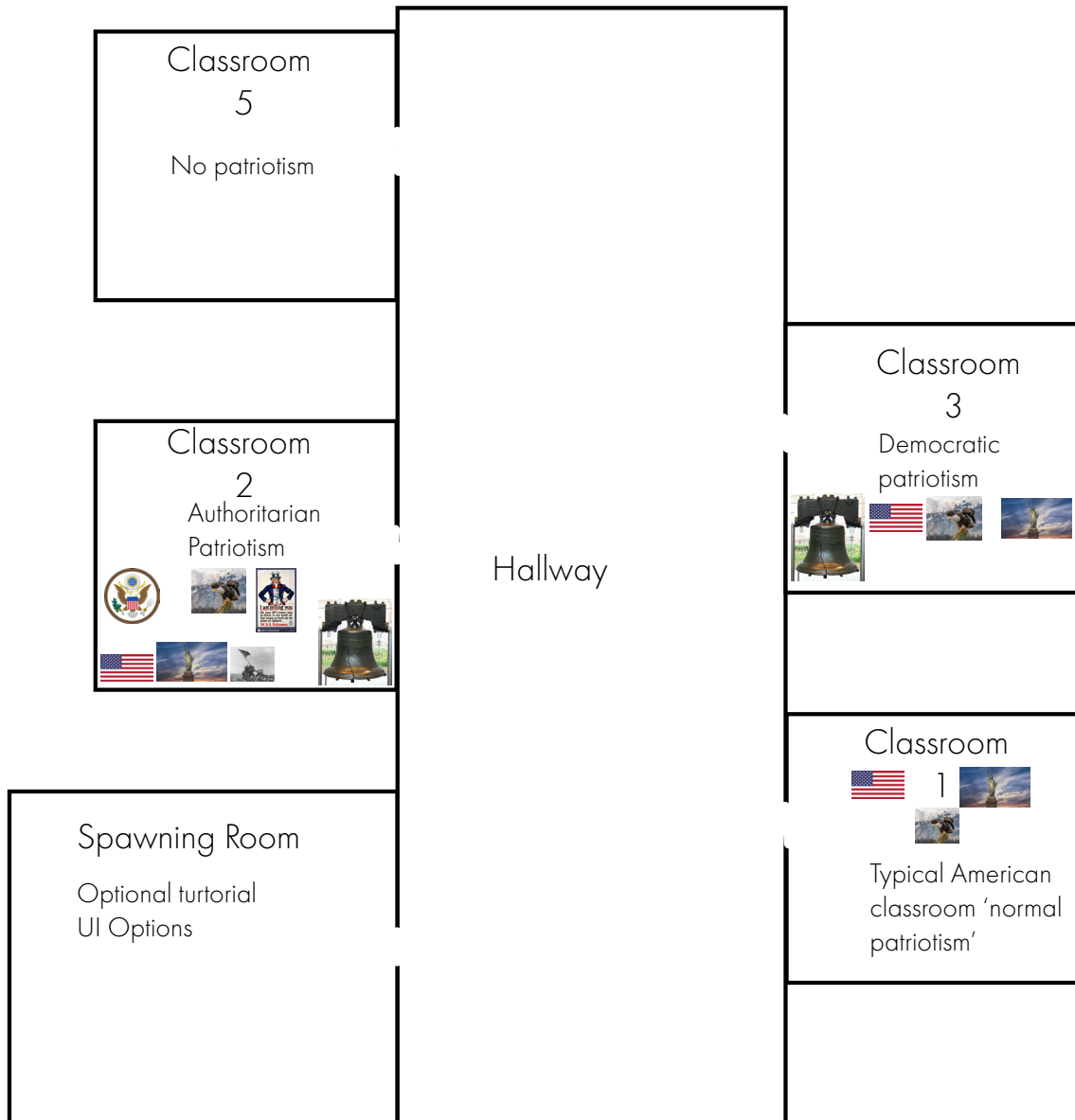
Mapping it out



I have mapped out the building in 2D, due to Covid-19 I now have no resources to complete my Virtual Reality experience, and had to sketch the planning of the building out. The building is to be big, with a very long and large hallway, to give it a lot more detail with different elements such as lockers, everything the user needs to complete the full experience is all in close proximity, but this won't change the pace of how the user will interact with the environment, it is a very simplistic layout and from looking at different high schools this is the best way it could be laid out for Virtual Reality.

UNITY

Mapping it out



I have also planned out what room will consist of, there isn't any specific order the user has to complete this in, and they don't even have to go into a room at all if they choose that, every users experience will be unique, but referencing from Bogost's and Shin's work i have chosen this layout as it is close and very simple for the user to get through as it is not intended to be complicated to navigate.

In each classroom you can see images of different patriotic elements that I have identified in my research. Each classroom will have different volumes of patriotism. It maps out which classroom will implement which element, and it can be portrayed by the actual object itself, a video, an audio clip where the user will be able to interact with or not, it will be their choice.

UNITY

Coding

The first code I had started to do was to implement the Virtual Reality controls and also get it ready to set up for the camera. This script will allow the controllers to be responsive and you will be able to see the controllers when you load into the scene. Unity has a Virtual Reality option which automatically allows the headset to work in the experience.

Camera Rig 1

```
1  #if USING_XR_MANAGEMENT && USING_XR_SDK_OCULUS
2  #define USING_XR_SDK
3  #endif
4
5
6  using System;
7  using System.Collections;
8  using System.Collections.Generic;
9  using UnityEngine;
10
11  #if UNITY_2017_2_OR_NEWER
12  using InputTracking = UnityEngine.XR.InputTracking;
13  using Node = UnityEngine.XR.XRNode;
14  #else
15  using InputTracking = UnityEngine.VR.InputTracking;
16  using Node = UnityEngine.VR.XRNode;
17  #endif
18
19  /// <summary>
20  /// A head-tracked stereoscopic virtual reality camera rig.
21  /// </summary>
22  [ExecuteInEditMode]
23  public class OVRCameraRig : MonoBehaviour
24  {
25      /// <summary>
26      /// The left eye camera.
27      /// </summary>
28      public Camera leftEyeCamera { get { return (usePerEyeCameras ? _leftEyeCamera : _centerEyeCamera); } }
29      /// <summary>
30      /// The right eye camera.
31      /// </summary>
32      public Camera rightEyeCamera { get { return (usePerEyeCameras ? _rightEyeCamera : _centerEyeCamera); } }
33      /// <summary>
34      /// Boolean = not known for all headset in runtime phase
```

The next script I had made was for audio sources, giving the option for 360 degree audio, I was able to put the audio source in any object that I have created which I also found very useful so I will be able to add it to the speakers I have made with reference to Steuer's work.

VR Controller

```
1  using UnityEngine;
2  using System.Collections;
3
4  /// <summary>
5  /// Simple helper script that conditionally enables rendering of a controller if it is connected.
6  /// </summary>
7  public class VRControllerHelper : MonoBehaviour
8  {
9      /// <summary>
10     /// The root GameObject that represents the GearVR Controller model.
11     /// </summary>
12     public GameObject m_modelGearVrController;
13
14     /// <summary>
15     /// The root GameObject that represents the Oculus Go Controller model.
16     /// </summary>
17     public GameObject m_modelOculusGoController;
18
19     /// <summary>
20     /// The root GameObject that represents the Oculus Touch for Quest And RiftS Controller model (Left).
21     /// </summary>
22     public GameObject m_modelOculusTouchQuestAndRiftSLeftController;
23
24     /// <summary>
25     /// The root GameObject that represents the Oculus Touch for Quest And RiftS Controller model (Right).
26     /// </summary>
27     public GameObject m_modelOculusTouchQuestAndRiftSRightController;
28
29     /// <summary>
30     /// The root GameObject that represents the Oculus Touch for Rift Controller model (Left).
31     /// </summary>
32     public GameObject m_modelOculusTouchRiftLeftController;
```

Even though the headset has been made to work in Unity, it still needs work, so I created a camera rig for the Virtual Reality headset, and also made options such as snap turn, and turned it off to bring smoother way of walking and looking around and i also changed the frame rates of the experience to match the headset which greatly improved the headset experience.

VR Audio Source

```
1  using System.Collections;
2  using System.Collections.Generic;
3  using UnityEngine;
4
5  public class OVRAudioSourceTest : MonoBehaviour
6  {
7      public float period = 2.0f;
8      private float nextActionTime;
9
10     // Start is called before the first frame update
11     void Start()
12     {
13         // Volumes/EOIN/VR Experience/Assets/Oculus/
14         // VRScripts/OVRCameraRig.cs
15         Material templateMaterial = GetComponent<Renderer>().material;
16         Material newMaterial = Instantiate<Material>(templateMaterial);
17         newMaterial.color = Color.green;
18         GetComponent<Renderer>().material = newMaterial;
19
20         nextActionTime = Time.time + period;
21
22     }
23
24     // Update is called once per frame
25     void Update()
26     {
27         if (Time.time > nextActionTime)
28         {
29             nextActionTime = Time.time + period;
30
31             Material mat = GetComponent<Renderer>().material;
32             if (mat.color == Color.green)
33             {
34                 mat.color = Color.red;
35             }
36             else
37             {
38                 mat.color = Color.green;
39             }
40         }
41     }
```

UNITY

Coding

I had created a Virtual Reality manager script, which would allow me to make sure it is compatible and kept up to date with the newest versions of Unity which I had to change a few times due to new updates to the software. It also makes sure that everything is working between Unity and the headset.

Camera Rig 2

```
No selection
1 2
3 #if USING_XR_MANAGEMENT && USING_XR_SDK_OCULUS
4 #define USING_XR_SDK
5 #endif
6
7 using System;
8 using System.Collections;
9 using System.Collections.Generic;
10 using UnityEngine;
11
12 #if UNITY_2017_2_OR_NEWER
13 using InputTracking = UnityEngine.XR.InputTracking;
14 using Node = UnityEngine.XR.XRNode;
15 #else
16 using InputTracking = UnityEngine.VR.InputTracking;
17 using Node = UnityEngine.VR.VRNode;
18 #endif
19
20 /// <summary>
21 /// A head-tracked stereoscopic virtual reality camera rig.
22 /// </summary>
23 [ExecuteInEditMode]
24 public class OVRCameraRig : MonoBehaviour
25 {
26     /// <summary>
27     /// The left eye camera.
28     /// </summary>
29     public Camera leftEyeCamera { get { return (usePerEyeCameras) ? _leftEyeCamera : _centerEyeCamera; } }
30     /// <summary>
31     /// The right eye camera.
32     /// </summary>
33     public Camera rightEyeCamera { get { return (usePerEyeCameras) ? _rightEyeCamera : _centerEyeCamera; } }
34     /// <summary>
35     /// Provides a root transform for all anchors in tracking space.
36     /// </summary>
37     public Transform trackingSpace { get; set; }
38 }
```

I had created a separate script for Virtual Reality tracking, to redefine the hand tracking and to also implement the smooth tracking from the camera and camera rig, as when I tested it out the camera rig would never be in the same position as the camera, this has fixed the problem and now it makes it look much smoother.

VR Manager

```
< OVRCameraRig.cs OVRManager.cs OVRAudioSourceTest.cs OVRCameraRig.cs OVRControllerHelper.cs
No selection
1
2 #if USING_XR_MANAGEMENT && USING_XR_SDK_OCULUS
3 #define USING_XR_SDK
4 #endif
5
6 #if UNITY_ANDROID && UNITY_EDITOR
7 #define OVR_ANDROID_HRC
8 #endif
9
10 #if UNITY_5_6_OR_NEWER
11 #error Oculus Utilities require Unity 5.6 or higher.
12 #endif
13
14 using System;
15 using System.Collections.Generic;
16 using UnityEngine;
17 #if UNITY_EDITOR
18 using UnityEditor;
19 #endif
20
21 #if USING_XR_SDK
22 using UnityEngine.XR;
23 using UnityEngine.Experimental.XR;
24 #endif
25
26 #if UNITY_2017_2_OR_NEWER
27 using Settings = UnityEngine.XR.XRSettings;
28 using Node = UnityEngine.XR.XRNode;
29 #else
30 using Settings = UnityEngine.VR.VRSettings;
31 using Node = UnityEngine.VR.VRNode;
32 #endif
33
34 /// <summary>
```

I have added more to the camera rig script, which are really important such as eye tracking, and hand tracking which makes it more accurate in the scene, and it can also change options for the user to what way they would like to see the experience such as center eye, left or right eye. I have also added an option for floor level, which the headset will measure how far you are off from the ground and that depends on your height in the game.

VR Tracker

```
OVRTracker.cs OVRGrabber.cs OVRHand.cs OVRCursor.cs OVRPlayerController OVRPointerEvent.cs
No selection
1
2 using System;
3 using System.Runtime.InteropServices;
4 using UnityEngine;
5 using VR = UnityEngine.VR;
6
7 /// <summary>
8 /// An infrared camera that tracks the position of a head-mounted display.
9 /// </summary>
10 public class OVRTracker
11 {
12     /// <summary>
13     /// The (symmetric) visible area in front of the sensor.
14     /// </summary>
15     public struct Frustum
16     {
17         /// <summary>
18         /// The sensor's minimum supported distance to the HMD.
19         /// </summary>
20         public float nearZ;
21         /// <summary>
22         /// The sensor's maximum supported distance to the HMD.
23         /// </summary>
24         public float farZ;
25         /// <summary>
26         /// The sensor's horizontal and vertical fields of view in degrees.
27         /// </summary>
28         public Vector2 fov;
29     }
30
31     /// <summary>
32     /// If true, a sensor is attached to the system.
33     /// </summary>
34     public bool hasSensor;
```

UNITY

Coding

After writing scripts for the main parts of Virtual Reality and that it is working smoothly I have moved on to grabbing objects, this allows the user to pick up, move and drop objects. This requires a lot of testing, which so far I have fixed the issues that I have been aware of.

VR Hands

```
OVRTracker.cs OVRGrabber.cs OVRHand.cs OVRCursor.cs OVRPlayerControl.cs OVRPointerEventD...
No selection
1
2 using System.Collections;
3 using System.Collections.Generic;
4 using UnityEngine;
5
6 [DefaultExecutionOrder(-90)]
7 public class OVRHand : MonoBehaviour
8 {
9     OVRSkeleton.IOWRSkeletonDataProvider,
10    OVRSkeletonRenderer.IOWRSkeletonRendererDataProvider,
11    OVRMesh.IOWMeshDataProvider,
12    OVRMeshRenderer.IOWMeshRendererDataProvider
13 {
14     public enum Hand
15     {
16         None = OVRPlugin.Hand.None,
17         HandLeft = OVRPlugin.Hand.HandLeft,
18         HandRight = OVRPlugin.Hand.HandRight,
19     }
20
21     public enum HandFinger
22     {
23         Thumb = OVRPlugin.HandFinger.Thumb,
24         Index = OVRPlugin.HandFinger.Index,
25         Middle = OVRPlugin.HandFinger.Middle,
26         Ring = OVRPlugin.HandFinger.Ring,
27         Pinky = OVRPlugin.HandFinger.Pinky,
28     }
29
30     public enum TrackingConfidence
31     {
32         Low = OVRPlugin.TrackingConfidence.Low,
33         High = OVRPlugin.TrackingConfidence.High,
34     }
35 }
```

For my UI screens I would need a pointer so the user would be able to see what they are interacting with on the screens, this has worked, I have added a lighter shade of blue line and a white point at the end of the line, so the user can see what they would be doing when interacting with the UI options.

VR Grabber

```
OVRTracker.cs OVRGrabber.cs OVRHand.cs OVRCursor.cs OVRPlayerControl.cs OVRPointerEventD...
No selection
1
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 /// <summary>
6 /// Allows grabbing and throwing of objects with the OVRGrabbable component on them.
7 /// </summary>
8 [RequireComponent(typeof(Rigidbody))]
9 public class OVRGrabber : MonoBehaviour
10 {
11     // Grip trigger thresholds for picking up objects, with some hysteresis.
12     public float grabBegin = 0.55f;
13     public float grabEnd = 0.35f;
14
15     bool alreadyUpdated = false;
16
17     // Demonstrates parenting the held object to the hand's transform when grabbed.
18     // When false, the grabbed object is moved every FixedUpdate using MovePosition.
19     // Note that MovePosition is required for proper physics simulation. If you set this to true, you can
20     // easily observe broken physics simulation by, for example, moving the bottom cube of a stacked
21     // tower and noting a complete loss of friction.
22     [SerializeField]
23     protected bool m_parentHeldObject = false;
24
25     // If true, will move the hand to the transform specified by m_parentTransform, using MovePosition in
26     // FixedUpdate. This allows correct physics behavior, at the cost of some latency.
27     // (If false, the hand can simply be attached to the hand anchor, which updates position in LateUpdate,
28     // gaining us a few ms of reduced latency.)
29     [SerializeField]
30     protected bool m_moveHandPosition = false;
31
32     // Child/attached transforms of the grabber, indicating where to snap held objects to (if you snap them).
33     // Also used for ranking grab targets in case of multiple candidates.
34     [SerializeField]
```

I have made custom hands through this script, instead of having the ordinary controllers that you would see as I believe that it makes it a better experience and also from Bogost's work it makes the design of the game feel more personal. I have made the hands a light shade of blue and also made them transparent as it matches the colour of the options in my UI screens and the transparency makes it not as hard hitting for the users eye so they would be more focused on the environment.

VR Pointer Cursor

```
OVRTracker.cs OVRGrabber.cs OVRHand.cs OVRCursor.cs OVRPlayerControl.cs OVRPointerEventD...
No selection
1
2 /****
3 using UnityEngine;
4 using System.Collections;
5 using UnityEngine.EventSystems;
6 using UnityEngine.UI;
7
8 abstract public class OVRCursor : MonoBehaviour
9 {
10     public abstract void SetCursorRay(Transform ray);
11     public abstract void SetCursorStartDest(Vector3 start, Vector3 dest, Vector3 normal);
12 }
```

UNITY

Coding

The script for the play controller, was added into the camera rig, so that it has all the scripts of the Virtual Reality ctrls and hands inside it so when the user spawns in the hands will be in the same place as the camera. This brings all of the Virtual Reality control scripts together, completing it.

VR Pointer Event

```
OVRTracker.cs OVRGrabber.cs OVRHand.cs OVRCursor.cs OVRPlayerController.cs OVRPointerEventData.cs
No selection Switch to next document
1
2 using System;
3 using System.Text;
4 using UnityEngine;
5 using UnityEngine.Assertions;
6
7
8 namespace UnityEngine.EventSystems
9 {
10     /// <summary>
11     /// Extension of Unity's PointerEventData to support ray based pointing and also touchpad swiping
12     /// </summary>
13     public class OVRPointerEventData : PointerEventData
14     {
15         public OVRPointerEventData(EventSystem eventSystem)
16             : base(eventSystem)
17         {
18         }
19     }
20
21     public Ray worldSpaceRay;
22     public Vector2 swipeStart;
23
24     public override string ToString()
25     {
26         var sb = new StringBuilder();
27         sb.AppendLine("<b>Position:</b> " + position);
28         sb.AppendLine("<b>Delta:</b> " + delta);
29         sb.AppendLine("<b>eligibleForClick:</b> " + eligibleForClick);
30         sb.AppendLine("<b>pointerEnter:</b> " + pointerEnter);
31         sb.AppendLine("<b>pointerPress:</b> " + pointerPress);
32         sb.AppendLine("<b>lastPointerPress:</b> " + lastPress);
33         sb.AppendLine("<b>pointerDrag:</b> " + pointerDrag);
34         sb.AppendLine("<b>worldSpaceRay:</b> " + worldSpaceRay);
35     }
36 }
```

Adding a script for Virtual Reality events, such as interacting with an object or walking into a certain area and this would trigger an event such as a video or an audio clip.

VR Player Controller

```
OVRTracker.cs OVRGrabber.cs OVRHand.cs OVRCursor.cs OVRPlayerController.cs OVRPointerEventData.cs
No selection
1
2
3 using System;
4 using UnityEngine;
5
6 /// <summary>
7 /// Controls the player's movement in virtual reality.
8 /// </summary>
9 [RequireComponent(typeof(CharacterController))]
10 public class OVRPlayerController : MonoBehaviour
11 {
12     /// <summary>
13     /// The rate acceleration during movement.
14     /// </summary>
15     public float Acceleration = 0.1f;
16
17     /// <summary>
18     /// The rate of damping on movement.
19     /// </summary>
20     public float Damping = 0.3f;
21
22     /// <summary>
23     /// The rate of additional damping when moving sideways or backwards.
24     /// </summary>
25     public float BackAndSideDampen = 0.5f;
26
27     /// <summary>
28     /// The force applied to the character when jumping.
29     /// </summary>
30     public float JumpForce = 0.3f;
31
32     /// <summary>
33     /// The rate of rotation when using a gamepad.
34     /// </summary>
35 }
```

For the UI pointer, something needs to happen when the user clicks on the option so creating a script that changes the options such as restarting the game, changing the volume and brightness all of this will trigger once the user interacts with them.

VR Events

```
VRInput.cs VRInteractableItem.cs VRInteractor.cs VRItemCollider.cs BasicToggle.cs VREvent.cs
No selection Switch to previous document
1 2018, Sam Tague, All rights reserved. =====
2
3 // Static event system, call Listen and give it a method to call and when
4 // Send is called with the same name all listener methods will be called.
5 // Used for tracking objects being picked up or dropped.
6 // But can be used to listen for any kind of event really, sky's the limit!
7 //
8 //=====Contact Email: Sam@MassGames.co.uk=====
9
10 using System.Collections;
11 using System.Collections.Generic;
12 using UnityEngine;
13 using UnityEngine.Events;
14
15 public class VREvent : MonoBehaviour
16 {
17     [System.Serializable]
18     public class ObjectEvent : UnityEvent<object>
19     {
20     }
21
22     private Dictionary<string, ObjectEvent> eventDictionary;
23
24     private static VREvent eventManager;
25
26     public static VREvent instance
27     {
28         get
29         {
30             if (eventManager == null)
31             {
32                 GameObject eventManagerObj = new GameObject("EventManager");
33                 eventManager = eventManagerObj.AddComponent<VREvent>();
34                 eventManager.Init();
35             }
36         }
37     }
38 }
```

UNITY

Coding

This script will allow the trigger the interactor script, and toggle the object to be lifted once the user is within a certain distance from it determined in the interactor script, it is a script that makes the interactor script work as it will help target the intractable objects.

VR Collider

```
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 namespace VRInteraction
6 {
7     public class VRItemCollider : MonoBehaviour
8     {
9         public VRInteractableItem item;
10        private Collider _col;
11
12        public Collider col
13        {
14            get
15            {
16                if (_col == null) Awake();
17                return _col;
18            }
19        }
20
21        void Awake()
22        {
23            _col = GetComponent<Collider>();
24        }
25    }
26 }
27
28
```

The interactor script is a very important part that allows the user to properly interact with the objects such as just picking it up and looking around at it and also being able to throw it, this script will be able to be added to any object and also adds the distance the user can grab the object.

VR Basic Toggles

```
1 //===== Copyright 2018, Sam Tague, All rights reserved. =====
2 //
3 // Basic toggle. This script should be attached to the same object as an interactable item.
4 // If held it will enable and disable the target object when ACTION is pressed.
5 // This script should be above the VRInteractableItem script so the ACTION is called after
6 // the item ACTION, this will stop the toggle being trigger when picking up an item with
7 // the ACTION key.
8 //
9 //===== Contact Email: Sam@MassGames.co.uk=====
10 using System.Collections;
11 using System.Collections.Generic;
12 using UnityEngine;
13
14 namespace VRInteraction
15 {
16     public class BasicToggle : MonoBehaviour {
17
18         public GameObject target;
19         public bool startEnabled;
20
21         private bool _enabled;
22         private VRInteractableItem item;
23
24         void Start()
25         {
26             if (target == null)
27             {
28                 Debug.LogError("No Target specified", gameObject);
29                 return;
30             }
31             item = GetComponent<VRInteractableItem>();
32             if (item == null)
33             {
34                 Debug.LogError("This script requires an VRInteractableItem script on the same object", gameObject);
35             }
36         }
37     }
38 }
```

An issue that would happen is that the user would walk through all the objects they come in contact with, this is why a collider script will sort this issue out. Adding this script to most objects that the user will come in contact with will add a sense of realism as they just won't go straight through the object, and an object such as a chair or desk they would be able to knock over as I will add gravity to those objects you would expect to see move if they were touched.

VR Interactor

```
1 using UnityEngine;
2 using System;
3 using System.Collections;
4 using System.Collections.Generic;
5 using UnityEngine;
6 #if Int_SteamVR
7 using Valve.VR;
8 #endif
9
10 namespace VRInteraction
11 {
12     public class VRInteractor : MonoBehaviour
13     {
14         public const string anchorOffsetName = "ControllerAnchorOffset";
15
16         public GameObject objectReference;
17         public bool objectReferenceIsPrefab;
18         public bool hideControllersWhileHolding = true;
19         public Transform controllerAnchor;
20         public Transform controllerAnchorOffset;
21         public Transform ikTarget;
22         public Vector3 forceGrabDirection = new Vector3(1f, 0f, 0f);
23         public float forceGrabDistance = 0f;
24         public bool useHoverLine;
25         public Material hoverLineMat;
26         public Transform _vrRigRoot;
27         public bool triggerHapticPulse = true;
28
29         protected VRInteractableItem _hoverItem;
30         protected VRInteractableItem _heldItem;
31         protected bool _beingDestroyed;
32         protected VRInput _vrInput;
33         protected bool _highlighting;
34     }
35 }
```

UNITY

Coding

Adding more to the Interactor script, such as hover overs, when the user looks at an interact-able object and goes to grab it, changing to a light grey transparent colour so the user knows what object they are going to grab or interact with

VR Input

```
1  \
2  |
3  | using UnityEngine;
4  | using System;
5  | using System.Collections;
6  | using System.Collections.Generic;
7  | #if Int_SteamVR;
8  | using Valve.VR;
9  | #endif
10 |
11 | namespace VRInteraction
12 | {
13 |     public class VRInput : MonoBehaviour
14 |     {
15 |         public enum HMDType
16 |         {
17 |             VIVE,
18 |             OCULUS
19 |         }
20 |
21 |         protected enum Keys
22 |         {
23 |             TRIGGER,
24 |             PAD_TOP,
25 |             PAD_LEFT,
26 |             PAD_RIGHT,
27 |             PAD_BOTTOM,
28 |             PAD_CENTRE,
29 |             PAD_TOUCH,
30 |             GRIP,
31 |             MENU,
32 |             AX,
33 |             TRIGGER_OCULUS,
34 |             PAD_TOP_OCULUS,
35 |             PAD_LEFT_OCULUS
```

From the audio source script, this sound emitter script will allow more options for audio controls, such as fade in and fade out, the pitch and the length of the audio file, this will make the adding in of audio files or even video files much easier as no editing would need to be done outside of Unity again.

VR Interactor

```
1  \
2  |
3  | using UnityEngine;
4  | using System;
5  | using System.Collections;
6  | using System.Collections.Generic;
7  | #if Int_SteamVR;
8  | using Valve.VR;
9  | #endif
10 |
11 | namespace VRInteraction
12 | {
13 |     public class VRInteractor : MonoBehaviour
14 |     {
15 |         public const string anchorOffsetName = "ControllerAnchorOffset";
16 |
17 |         public GameObject objectReference;
18 |         public bool objectReferenceIsPrefab;
19 |         public bool hideControllersWhileHolding = true;
20 |         public Transform controllerAnchor;
21 |         public Transform controllerAnchorOffset;
22 |         public Transform ikTarget;
23 |         public Vector3 forceGrabDirection = new Vector3(1f,0f,0f);
24 |         public float forceGrabDistance = 0f;
25 |         public bool useHoverLine;
26 |         public Material hoverLineMat;
27 |         public Transform_vrRightFoot;
28 |         public bool triggerHapticPulse = true;
29 |
30 |         protected VRInteractableItem _hoverItem;
31 |         protected VRInteractableItem _heldItem;
32 |         protected bool _beingDestroyed;
33 |         protected VRInput_vrInput;
34 |         protected bool _highlighting;
35 |         protected bool _isFromTeleportMode;
```

Adding all of the Virtual Reality inputs on all of the controls, which will be added under the Virtual Reality player controller it allows me to assign the buttons to be able to grab objects and to interact with the UI options as well.

VR Sound Emitter

```
1  \
2  |
3  | using UnityEngine;
4  | using UnityEngine.Audio;
5  | using System.Collections;
6  |
7  | namespace VR
8  | {
9  |     /*
10 |
11 |     SoundEmitter()
12 |
13 |
14 |     */
15 |     public class SoundEmitter : MonoBehaviour {
16 |         public enum FadeState {
17 |             Null,
18 |             FadingIn,
19 |             FadingOut,
20 |             Ducking,
21 |         }
22 |
23 |         // OPTIMIZE
24 |
25 |         public float pitch { get { return audioSource.pitch; } set { audioSource.pitch = value; } }
26 |         public float volume { get { return audioSource.volume; } set { audioSource.volume = value; } }
27 |         public AudioClip clip { get { return audioSource.clip; } set { audioSource.clip = value; } }
28 |         public float time { get { return audioSource.time; } set { audioSource.time = value; } }
29 |         public float length { get { return (audioSource.clip != null) ? audioSource.clip.length : 0.0f; } }
30 |         public bool loop { get { return audioSource.loop; } set { audioSource.loop = value; } }
31 |         public bool mute { get { return audioSource.mute; } set { audioSource.mute = value; } }
32 |         public AudioVelocityUpdateMode velocityUpdateMode { get { return audioSource.velocityUpdateMode; } set { audioSource.velocityUpdateMode = value; } }
33 |         public bool isPlaying { get { return audioSource.isPlaying; } }
34 |     }
```

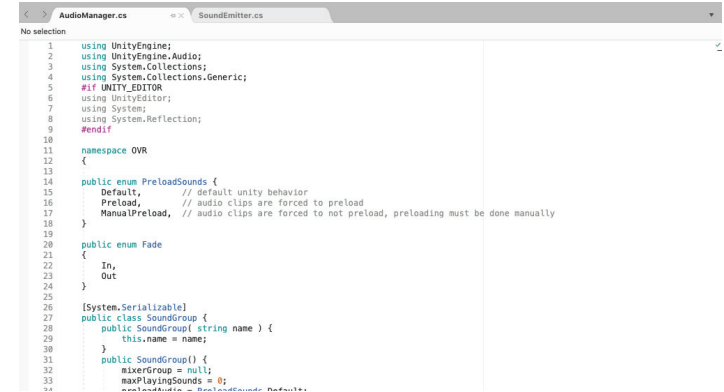
UNITY

Coding

This audio manager script will allow triggers for when a user interacts with a object or walks into a certain area, and how many times it will play, and it can also add different clips in after that one, it gives more flexibility and options to the previous scripts.

All of the scripts have their own unique roles that help my Virtual Reality experience complete.

VR Audio Manger



```
1 using UnityEngine;
2 using UnityEngine.Audio;
3 using System.Collections;
4 using System.Collections.Generic;
5 #if UNITY_EDITOR
6 using UnityEditor;
7 using System;
8 using System.Reflection;
9 #endif
10
11 namespace OVR
12 {
13     public enum PreloadSounds {
14         Default, // default unity behavior
15         Preload, // audio clips are forced to preload
16         ManualPreload, // audio clips are forced to not preload, preloading must be done manually
17     }
18
19     public enum Fade
20     {
21         In,
22         Out
23     }
24
25     [System.Serializable]
26     public class SoundGroup {
27         public SoundGroup( string name ) {
28             this.name = name;
29         }
30
31         public SoundGroup() {
32             mixerGroup = null;
33             maxPlayingSounds = 0;
34             preloadAudio = PreloadSounds.Default;
35         }
36     }
```

Exhibition

What it could be like

For the exhibition I was planning on designing a very patriotic board, with American flags and symbols such as the statue of liberty. This will show off some of the context to my project and it will also have some information and facts on the board that will enhance the showcase of my project.



USER JOURNEY

USER EXPERIENCE

Questionnaire

Having an online questionnaire could help me identify people who would take part in my VR experience and also I could give them a version of it to play around in so they would be able to provide feedback on the experience.

These are the proposed questions I could ask my users to get a better understanding of them and to also provide some feedback:

What age are you?
18-20 21-23 24-26 27+

What gender are you?
Male Female Other _____

Have you ever played a virtual reality game?

If given the chance would you use virtual reality to explore an educational concept?

How did you find the virtual reality experience I created?

From a scale of 1-10 how informative was the game?

From a scale of 1-10 how interactive was the game?

Did you explore everything or just things that you were interested in?

Do you think that this is an effective way to show off this concept of patriotism in high schools?

Do you have a better understanding of how patriotism can affect high schools?

Focus Group

I have thought about using this qualitative research technique as it would be the best and most effective way for my project. Having a small group of people test the experience and then for them to share their thoughts and opinions on what I have created. This will be the main way I can gather information and see people's reactions to the experience I have created.

Proposed user persona

I have thought about building user personas as after I have completed the previous research I can make profiles of some users and this could help the design of some elements and maybe even the UI as well so this could be an effective way to use the research gathered from the questionnaire and the focus group.

USER EXPERIENCE

Unique user journey

The main thing that I have discovered from the start of my project is that the Virtual Reality experience is different and unique for everyone, so I want my users to be able to move freely around the virtual environment and they don't have to explore everything as their experience is their own and I feel like this is the most effective way to have my experience as I know having your experience controlled by the game can be frustrating.

Usability testing

I could potentially create different versions of the experience such as one with no UI and one with different ways to start the game off such as not even having a tutorial option and see the outcome of the overall experiences that the testing users had with the different versions and they could share their thoughts on it.

Iteration

I could also potentially use this method while in development of my project and give the prototype versions to a few users who could then provide feedback earlier on in the development and carrying out interviews with the users will help me identify and refine different parts of the experience.

Information Architecture

From the user testing and the possible use of the Iteration method I could use the research that has been gathered to make the UI more easy to use and more user friendly and that would also go for the intractable objects in the game so the user would know what they are doing and this can be effective in the final version.

BIBLIOGRAPHY

- Bogost (2007). Persuasive Games. [ebook] pp.1,9,10. Available at: https://pdfs.semanticscholar.org/c660/45e159874e0679d81eaff726c0344fc4db3b.pdf?_ga=2.16659574.1150928565.1581074251-1875007133.1581074251 [Accessed 7 Feb. 2020].
https://books.google.co.uk/books?hl=en&lr=&id=Vg5dDwAAQBAJ&oi=fnd&pg=PP1&dq=american+patriotism&ots=R-dT2daQ72&sig=ApOXiHjaOxU4p-cl-OGT_tSxTlI&redir_esc=y#v=onepage&q&f=false [Accessed 18 Feb. 2020].
- Ishio, (2010). Social Bases of American Patriotism. [ebook] pp.2,3,5. Available at: https://journals.sagepub.com/doi/pdf/10.1177/0011392109348546?casa_token=sFfScR8jjVUAAAAA:illcNA_ChrBL14hUw7_OVpgCP4xG6ESsuWFLXCQeZTdSRd2LWZuigigZTlqfMm6VubEPAV2-QQ8 [Accessed 23 Feb. 2020].
- McMahan (2011). Exploring the Effects of Higher-Fidelity Display and Interaction for Virtual Reality Games.[ebook]pp.3,2797.Available at: https://vtechworks.lib.vt.edu/bitstream/handle/10919/30123/McMahan_RP_D_2011.pdf?sequence=1&isAllowed=y [Accessed 24 Feb. 2020].
- O’Leary (1999). To Die For: The Paradox of American Patriotism. [ebook] pp.3,7, 8. Available at: https://books.google.co.uk/books?hl=en&lr=&id=Vg5dDwAAQBAJ&oi=fnd&pg=PP1&dq=american+patriotism&ots=R-dT2daQ72&sig=ApOXiHjaOxU4p-cl-OGT_tSxTlI&redir_esc=y#v=onepage&q&f=false [Accessed 18 Feb. 2020].
- Schrank (2014). Avant-Garde videogames playing with technoculture. [ebook] pp.2, 24. Available at: [https://books.google.co.uk/books?hl=en&lr=&id=SZIAwAAQBAJ&oi=fnd&pg=PR5&dq=Schrank,+B.,+\(2014\).+Avantgarde+Videogames:+Playing+with+Technoculture.+The+MIT+Press,+Cambridge,+Massachusetts.+PDF&ots=APhQG1dTPY&sig=FNyjc-xLnzo4naM7AdScG8zy4tY&redir_esc=y#v=onepage&q&f=false](https://books.google.co.uk/books?hl=en&lr=&id=SZIAwAAQBAJ&oi=fnd&pg=PR5&dq=Schrank,+B.,+(2014).+Avantgarde+Videogames:+Playing+with+Technoculture.+The+MIT+Press,+Cambridge,+Massachusetts.+PDF&ots=APhQG1dTPY&sig=FNyjc-xLnzo4naM7AdScG8zy4tY&redir_esc=y#v=onepage&q&f=false) [Accessed 9 Feb. 2020].
- Shin (2018). Empathy and embodied experience in a virtual environment: To what extent can virtual reality stimulate empathy and embodied experience?. [ebook] Seoul, pp.3, 4, 6. Available at: https://fiona.hs-heilbronn.de/16582993/2017_donghee-pdf.pdf [Accessed 9 Feb. 2020].
- Westheimer (2006). Politics and Patriotism in Education. [ebook] pp.3,4,5. Available at: https://journals.sagepub.com/doi/pdf/10.1177/003172170608700817?casa_token=h6djlM7T6SsAAAAA:u2HmfEU1j92Fh2s38tN_wRcNiCiGHw6Uij-NZGWi9_6PFbWfQKJwHdto2aTxQYfy-j4CBwfGiA [Accessed 23 Feb. 2020].
- Winter and Winter (2008). Sowing Patriotism, But Reaping Nationalism? Consequences of Exposure to the American Flag. [ebook] pp.3, 4, 5. Available at :<https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1467-9221.2008.00670.x> [Accessed 23 Feb. 2020].
- Sensorama. (2014). [image] Available at: https://www.researchgate.net/figure/Sensorama-From-web-page-InventorVR-retrieved-in-March-2014-from_fig1_263388241 [Accessed 21 Feb. 2020].
- Sword of Damocles. (n.d.). [image] Available at: https://vrroom.buzz/sites/default/files/styles/article_top_banner/public/sword-of-damocles-jpg-1459515301-byqc-column-width-inline.jpg?itok=AFS1SGNd [Accessed 21 Feb. 2020].
- Super Cockpit. (n.d.). [image] Available at: <http://data:image/jpeg;base64,/9j/ /CaczdZdXlI6j6> [Accessed 21 Feb. 2020].
- The Aspen Movie Map. (n.d.). [image] Available at: <https://i.ytimg.com/vi/Hf6LkqgXPMU/hqdefault.jpg> [Accessed 21 Feb. 2020].
- Myron Krueger. (n.d.). [image] Available at: <https://lh3.googleusercontent.com/proxy/i5KRX7r59jVwnWYAJ0lgSqVcBOc9WICf6RqWQorOrRVlRmB-YeL28SY-b45ozYE55QQOCChjF3dv5rkXeR-1R7eDh3-3RV-srcg79nmBV8E-SDaevXw> [Accessed 21 Feb. 2020].

Oculus Rift. (n.d.). [image] Available at: https://static.bhphoto.com/images/images2500x2500/1567705040_1503554.jpg [Accessed 21 Feb. 2020].

Sega VR. (n.d.). [image] Available at: <https://www.designnews.com/sites/default/files/Design%20News/SegaVR.jpg> [Accessed 21 Feb. 2020].

VR modern day. (2020). [image] Available at: <https://v9q3c2p3.stackpathcdn.com/wp-content/uploads/2019/04/oculus-quest-rift-s.jpg> [Accessed 21 Feb. 2020].

Skydance Interactive (2020) The Walking Dead Saints and Sinners Available online at: https://store.steampowered.com/app/916840/The_Walking_Dead_Saints___Sinners/

Ubisoft (2017) Star Trek Bridge Crew Available online at: https://store.steampowered.com/app/527100/Star_Trek_Bridge_Crew/

Molleindustria, (2009) Everyday The Same Dream Available Online at: <http://www.molleindustria.org/everydaythesamedream/everydaythesamedream.html>

Wellcome Collection, (2011) High Tea Available Online at: <http://hightea.wellcomeapps.com/>

rasca, G., (2004) Madrid Available Online at: <http://www.newsgaming.com/games/madrid/>

n.d. The American Flag. [image] Available at: <https://mail.google.com/mail/?tab=im1> [Accessed 13 March 2020].

n.d. The Great Seal. [image] Available at: https://upload.wikimedia.org/wikipedia/commons/5/5c/Great_Seal_of_the_United_States_%28obverse%29.svg [Accessed 17 March 2020].

n.d. Bald Eagle. [image] Available at: https://upload.wikimedia.org/wikipedia/commons/1/1a/About_to_Launch_%2826075320352%29.jpg [Accessed 17 March 2020].

2020. North American Bison. [image] Available at: <https://www.hww.ca/kaboom/images/Mammals/North-American-Bison.jpg> [Accessed 17 March 2020].

2020. National Motto. [image] Available at: https://upload.wikimedia.org/wikipedia/commons/thumb/9/96/US_one_dollar_bill%2C_reverse%2C_series_2009.jpg/563px-US_one_dollar_bill%2C_reverse%2C_series_2009.jpg [Accessed 17 March 2020].

2020. National Flower. [image] Available at: <https://statesymbolsusa.org/sites/statesymbolsusa.org/files/primary-images/Rose-NationalflowerUSA.jpg> [Accessed 17 March 2020].

n.d. National Tree. [image] Available at: https://upload.wikimedia.org/wikipedia/commons/e/e6/Keeler_Oak_Tree_-_distance_photo%2C_May_2013.jpg [Accessed 17 March 2020].

n.d. National March. [image] Available at: <https://api.time.com/wp-content/uploads/2015/02/iwo.jpeg?w=600&quality=85> [Accessed 17 March 2020].

n.d. Uncle Sam. [image] Available at: <https://c8.alamy.com/comp/DOXK0A/world-war-i-american-recruitment-poster-uncle-sam-war-savers-back-DOXK0A.jpg> [Accessed 17 March 2020].

n.d. Statue Of Liberty. [image] Available at: https://www.history.com/.image/t_share/MTY1MTc1MTk3ODI0MDAxNjA5/topic-statue-of-liberty-gettyimages-960610006-promo.jpg [Accessed 17 March 2020].

n.d. Liberty Bell. [image] Available at: <https://upload.wikimedia.org/wikipedia/commons/thumb/0/08/Liberty_Bell_2008.jpg/1200px-Liberty_Bell_2008.jpg> [Accessed 17 March 2020].

n.d. [image] Available at: <<https://www.google.com/calendar?ta>