Project Post-mortem

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Introduction

Our project was to create a racing video game that was based around a neo-Tokyo theme. Our game consisted of hover vehicles that would race around a track that would have events that would alter the track. Each track played a part in the story of the game and they all had different themes. The vehicles that the player can race were based off each level by having the same theme. My role in the project was to create the unreal side of the vehicles, making them move and hover. I also worked on blocking out one of the tracks.

Research Evaluation

Researched using the Unreal engine leaning and documentation tabs in the epic game's launcher (Docs.unrealengine.com, 2019). I also used the video tutorial tab (Academy.unrealengine.com, 2019). I mainly went to YouTube for my research, looking for tutorials on how to make hover vehicles or how to use recasting inside of unreal (YouTube, 2019).
If I was ever finding something difficult or something that I didn't fully understand I would go and ask my tutor and they would help me with the problem. If I was having a specific problem that I couldn't fix I would usually go to the Unreal engine forum and either ask for help or look for a similar thread (Unreal Engine Forums, 2019).

Technical Research

I learnt a lot about the physics of the unreal engine though a document that I purchased on the unreal marketplace. This documentation explained how the vehicle would operate and describe how to alter the blueprint. I used this document to manipulate the blueprint and change all of the factors that would change the way in which the vehicle would operate. Along with the research done in class with my tutor I also spend time before then testing different nodes in the blueprint to see what each one would do. I found out a lot just by testing and then used everything that I had learnt to make the final blueprint for the tracks which was a colour moving emissive track.

Contextual Research

I did a lot of research with movies and music. I wanted the game to have a big retro theme to it. I took inspiration from a game called Power drive 2000 which has a similar theme but I wanted to take it further and make it more sci-fi. I looked at films such as Back to the future (Back to the Future, 1985), which is known for its retro theme and sci-fi aspect. I also looked at the book Ready Player One (Cline, 2019), as this book references the 80's from a dystopian future and has a similar theme that I wanted to use. The film adaptation of the book also has a great visual style to it with a lot of pink and blue (Ready player one, 2018). I wanted the music in game to take the player to the 80's, I wanted them to imagine themselves in an 80's arcade playing this game.

Game Research

One game that I researched because it was a fast-retro racing game was called 'PowerDrive 2000', The game has a retro theme that captures the 80's perfectly. It's a racing game where you drive a fast-moving vehicle through a Tron like setting. I liked the way in which the vehicle handled so I tried to emulate this in the game.
Another game that I looked at was called 'Welcome to the future', this game is an early access game which features hover vehicles and other sci-fi ships. I liked the way in which the vehicle behaved with the ground and the gravity of the vehicle was rather unique. One game that I came across also had a video alongside it which described how the vehicles work based off the unreal engine 4's physics. This game is 'Space dust racing'. It has vehicles that are made using physics inside of UE4. The video describes where to get all of the values and how the effect the vehicle. (YouTube, 2019)

Research Conclusion

I believe that my research went really well, I learned a lot to do with the engine as I had not previously had a lot of experience with it. I think that I could have spent more time researching the physics side of the engine to get a better understanding of how different forces can affect the vehicle in different ways. I also believe that I could have made the vehicle from scratch if I had done more research in the physics because that's where all of my prototypes had failed or stopped.

I did a lot of research into the retro side of the game with music and pop culture. I think that I could have done more research into the music for the game as a lot of music that I came across was copyrighted and I needed some royalty free music that also was 80’s themed.

Technique Evaluation

I hadn't worked with the unreal engine so in depth before, I had no prior experience with blueprints or mechanics. I did a lot of research into how unreal engine works and how to use blueprints.
I had a production diary that kept track of everything that I had done and on what week that I did it. I also set up a Gantt chart to show the work that I set out to do. I used this Gantt chart to see on what days what I was supposed to be doing, this helped me keep organised. As a group we also set up a priority list to see what assets were the most important and needed to be completed first.

Identification & Suitability of Production Methods

When I started making the vehicle blueprints, my knowledge in the control system were very limited. I started setting up key placements inside of the blueprints rather than using the engines build in input methods for controllers and keyboards. I then tried the in-built method of controls after doing some research and found that adding a movement part to the blueprint allowed me to use the controller with custom inputs to control the vehicle.

Development of Techniques & Skills

I spent a lot of time playing around with different test blueprints in a separate tester level in the engine. Here I tested new inputs for the vehicles and also different values of thrust and torque. I used the tester level to develop my skills in the engine by testing things that I had learnt by researching on YouTube of the Unreal Engine forums.

Overall Quality of Work Produced

I am pleased with the work that was produced since it was my first ever produced game using the unreal engine. I would say that it is not yet at a professional level as it is still a work in progress and I will continue in my next semester working on refining it. I would have liked to have made the vehicle blueprint from scratch but from the lack of understanding and knowledge that I possessed at the time I believe that it was the right decision to make as I learnt a lot through the documentation of the blueprint and also understood more on how it worked.

Technique Conclusion

This module has taught me a lot about the blueprints in the unreal engine. I enjoyed researching into them and developing my knowledge. I learnt a lot though research and in lectures, I now know how to create and manipulate blueprints and also how to work with menu systems. I will be focusing next semester on the creation on AI to add into the game to make it more fun and have some competition.

Development Evaluation

To make sure that development went smoothly we created a group Gantt chart where everyone could see what others were meant to be working. Each group had specific roles; Concept artist, Level designer, Modeller and Unreal. I myself was a part of the industrial level and I my role was to work in unreal engine. The planning was effective and it helped me see what tasks I had set out for me and when I had to do them. I did come across one problem in development and that was that it was taking a lot longer than planned to make the vehicle blueprints. I accounted for this by adjusting my Gantt chart and moving some of the less important things later on and prioritising the vehicles.

Creativity

This game wasn't just an assignment for me it turned into a passion project. I got hooked on the 80's retro theme, listening to music and watching movies. I actively wanted to work on the game at home more and more so that I could finally play it. I spent a lot of time looking at futuristic dystopian cities to get inspiration for the colours of the game and also the feel for the tracks.

Contribution within a group (group projects)

I engaged with two groups, My set group for the industrial level and also the unreal team group. I attended meetings during classes with the industrial level group and discussed ideas on what to have in the level. We looked at the concepts and discussed if they were viable to be modelled and if they were to a standard to have in the game.
The unreal time grouped up regular each lecture and outside of lectures to discuss blueprints and help each other on anything that we might be stuck on. We also showed our work and also migrated stuff to each other's projects to make the final migration easier and also to get a feel for the final game.

Iterative Design Practice

I went through a few iterations of the vehicle blueprints, a lot of them were very buggy and didn't work very well. I then sourced a blueprint off the unreal market place and used it to develop my knowledge of vehicles. I then adjusted that blueprint extensively to get the right feel of handling and speed that I wanted. I also spend a lot of time blocking out the track for the industrial level, this required a lot of play testing and also timing to make sure that the track was a significant length and that the obstacles were separated enough to allow vehicles to pass. I am still playtesting the position of some obstacles and I will be continuing to develop this next semester.

Time Management

I managed my time well, I followed my Gantt chart so that I knew exactly what was meant to be done. At one point in development I did spend a lot more time working on the vehicle blueprints so I accounted for this by amending my Gantt chart to suit this time extension. I met all of my initial internal set deadlines apart from the one, the vehicles, but I met the amended deadline that I set myself. I gave myself around a week on each section of work that I had to do. I also allowed for extra time just encase something happened.

Development Conclusion

The development process went well everything was done and put into the game by the deadline. We had some problems compiling all of the unreal teams work into one project, and we also had

some issues playing the game on a .exe file. I wish I had some prior knowledge on migrating work from one project to another to make things a lot easier when compiling work together for next time.

Analysis

Contextualising your work within a wider theoretical practice

Looking at the game I can see a risk and reward factor. In the industrial level there is a level of risk by going in certain directions and crash or go faster. Another example of this is with the vehicle selection, each vehicle will have stats, this will allow the player to choose between speed, handling, health and also size. All of these factors will play into the different scenarios that can play out in game. The music in game is also set up with the events in game, when racing around the map when the music goes quiet, the game with compensate for it with visuals.

Critique of the work you have produced

We have done playtesting within the group to find things that were not intended to be in the game such as bugs. We haven't yet done any play testing outside of the class but we intend to do this as it would bring a fresh player to the game. When playtesting ourselves we found a number of things that were causing the player to go off track. To fix this we added blocking and killing volumes to not allow the player to go off track.. I also discovered that my vehicle would flip over when travelling backwards, I intend to fix this by locking rotation when travelling backwards.

Critique of your own practice (and action taken)

Whilst working on this project I have had to learn a lot of new skills. I was struggling to make the vehicle blueprints so I researched online and developed my knowledge. I also learnt more about material blueprints, I learnt how to make a scaling texture using overlaps. I also learned how to use the foliage tools and landscaping painting using landscape materials.
As a team we worked well, communication was a small problem for some but we moved past it and continued on the work. There were some issues with conflicting software's such as scale and orientation but they were solved quickly because we communicated and found the issue.

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