EE2618
Learning Journal

1712540

1432 Words

CONTENT

Generation of Ideas

IDEA 1

My overall goal was to create a model that I thought was original (outside of the scope of cars and airplanes) however, the ideas that I had proved to be either too complex to complete within the timeline and skill-level or too simple to satisfy the brief.

My first idea was to create the hover board rom Back to the Future, however, once I started collecting reference material, it proved to be too simple to satisfy the brief.

At the core, it is mostly comprised of two circles and a bevelled rectangle. Although this idea may have been hard to texture accurately (due to it's complex design), the 3d model itself would be simple.

IDEA 2

My second idea took inspiration from the power armour suits in the Fallout game franchise.

I thought that it would be interesting to create a suit of power armour that would fit inside the post apocalyptic world of Fallout.

My problem with this, was that my combined Maya, UV mapping and Texturing skills would not have been enough to complete a task like this within the allocated time and be able to add all the fine details such as wires, tubes etc.
Although I may decide to do something similar in my own time in order to improve at 3D designing, I decided to choose something less complex.

FINAL IDEA

My favourite cartoons as a child were The Simpsons. Therefore, I wanted to take one of the iconic vehicles from the series and turn it from it's 2D format into 3D.

My decision to create the Duff Party Bus came because Duff Beer is one of the most iconic fictional drinks from one of the most iconic TV shows.

I decided not to create the more iconic vehicles such as the pink sedan or the Plow King because I wanted to create one of the more obscure but still interesting vehicles from the show.

The Simpsons also proved to be a good choice because there is plenty of reference materials for almost everything on the show.

Development

BLUEPRINTING

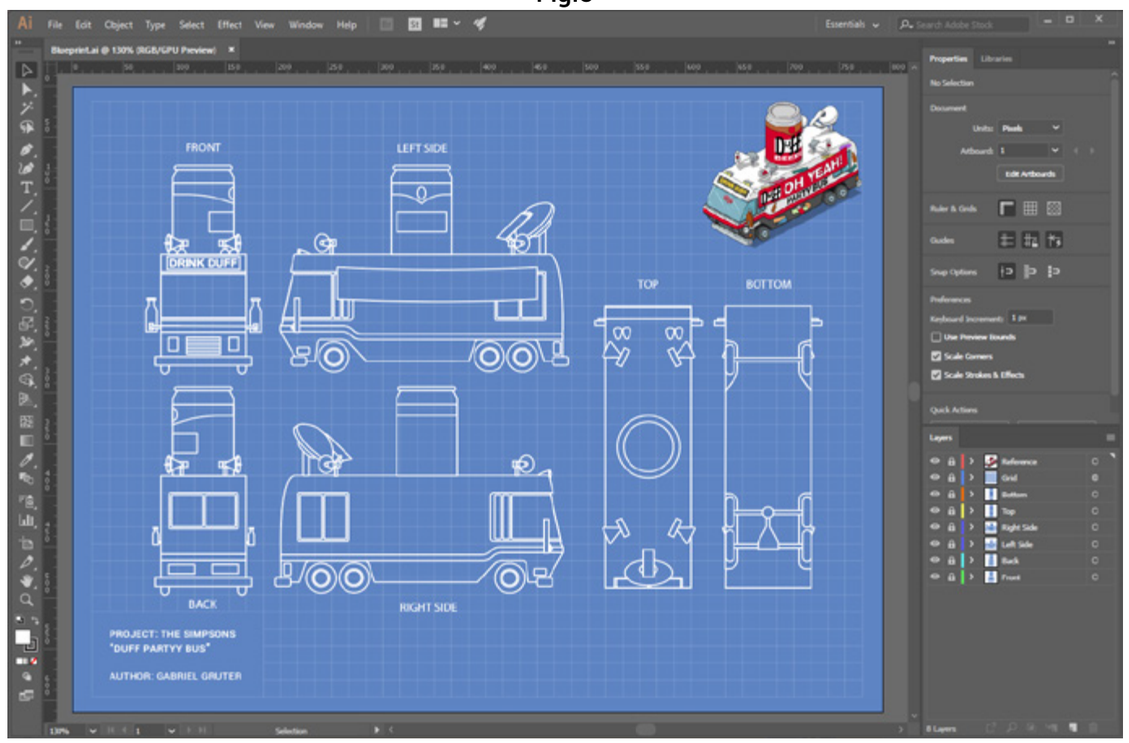
This was the first time that I had attempted to make a blueprint of something so I wasn't sure how to start out. After looking at some reference blueprints, I decided to start by creating a 2D wireframe of each face of the model according to the reference images I had (Fig.1-2).

Fig.1

Fig.2

The blueprint was made in Illustrator (Fig.3) in case I had to increase the resolution later when importing each face into Maya.

Fig.3

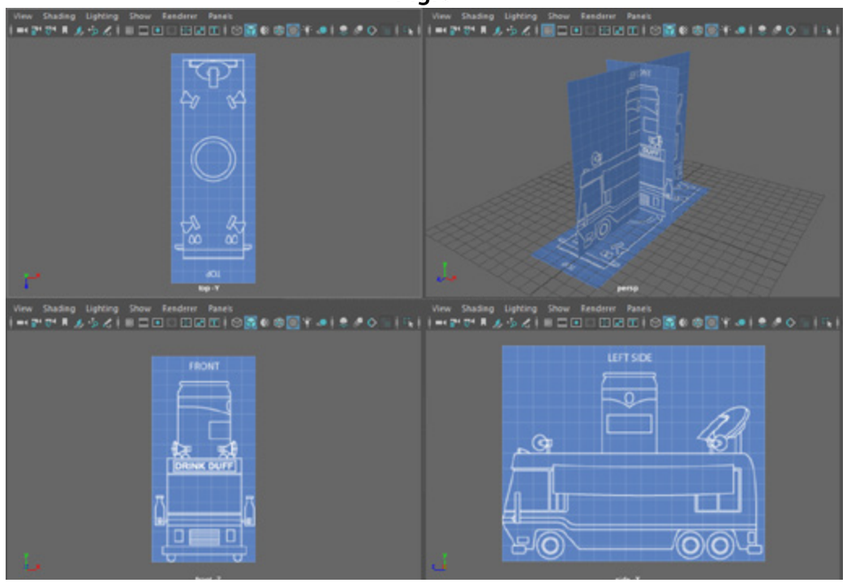


MODELLING

At the start of the year I found Maya quite confusing compared to the Adobe Suite but once I understood the concept of the 3D space and relevant keybindings I began to understand how to create objects.

My first step was to create 4 rectangles with the same aspect ratio as the blueprint and assign them textures (Fig.4).

Fig.3



At first I was confused how I would be able to keep everything to scale, however I quickly realised that all I had to do was work with the “2D” cameras separately and use the world perspective camera to check how the whole model looks and to move any objects.

Once I had the base shape (Fig.4), I could start adding the finer details on the base, the wheels and the objects on top of the roof.

When it came to the finer details (Fig.5-6), I had some issues with the blueprint not matching up accurately, so I had to make some small adjustments to the size of the wheels and megaphones because in my initial sketches I made the mistake of not double checking that they were scaled with each other.

However, I learned the importance of pre-planning and making sure that everything is prepared before you start the heavy lifting. Luckily, the aspects of the design that were not scaled could be done roughly because they did not need to be perfectly aligned with the original blueprint.

Fig.4

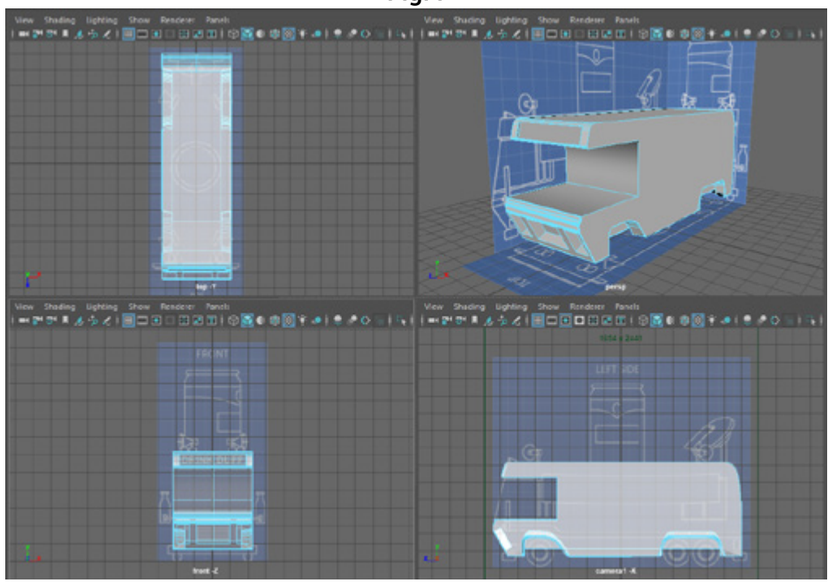
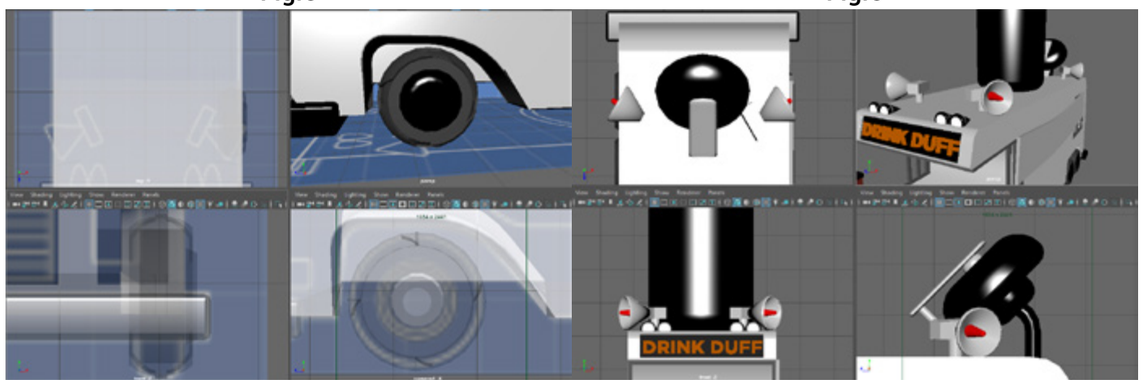


Fig.5

Fig.6

Fig.6

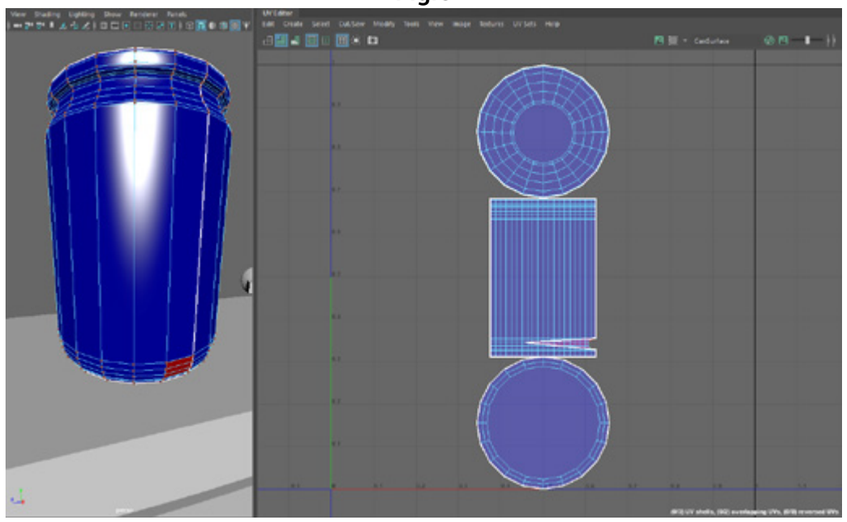


UV MAPPING

UV mapping was once again something that I struggled to get my head around the first time I practised it. By using this tutorial (all 3 parts) I understood the basics of UV mapping and why it is important in the texturing process.

At first my UV maps were overlapped and reversed in some places(Fig.7), the majority of my time working with UV maps and textures was making sure that there were no overlaps and that the textures fit.

Fig.8



Although this took a long time for the first couple maps, I got better at fixing them to the best of my ability and to create a final map for each object that would allow me to start creating the textures.

I used Maya to automatically create and organise the UV maps. This however, has a high chance to cause overlaps or incorrect stitching so there were many areas (such as Fig.8) that I had to manually fix.

The easiest way to texture that I found was to export all the final maps (Fig.9-12) as PNG images that I could then use as a template in Illustrator.

Fig.9

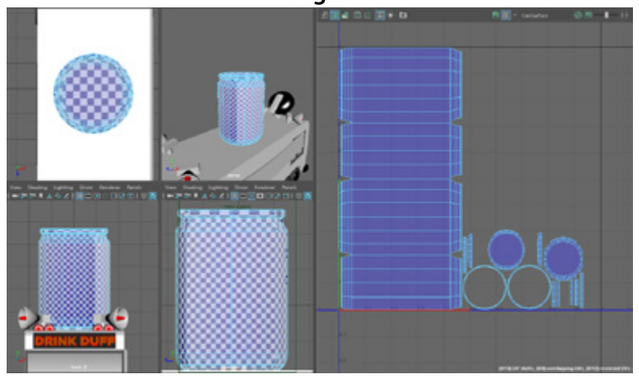


Fig.10

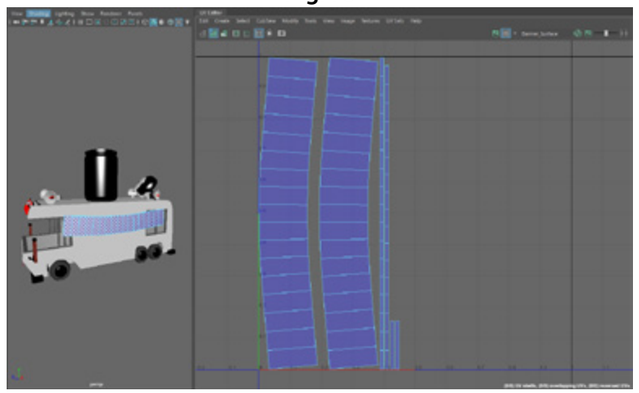


Fig.11

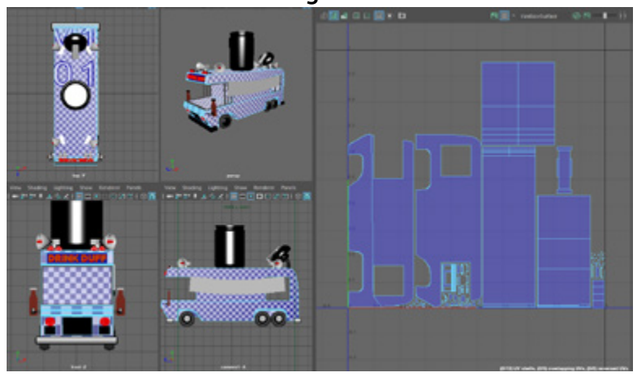
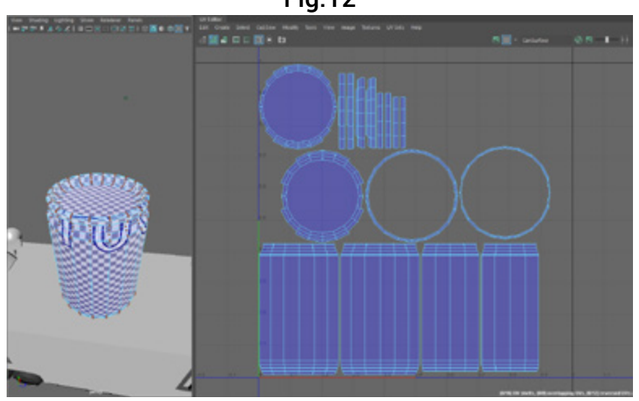


Fig.12

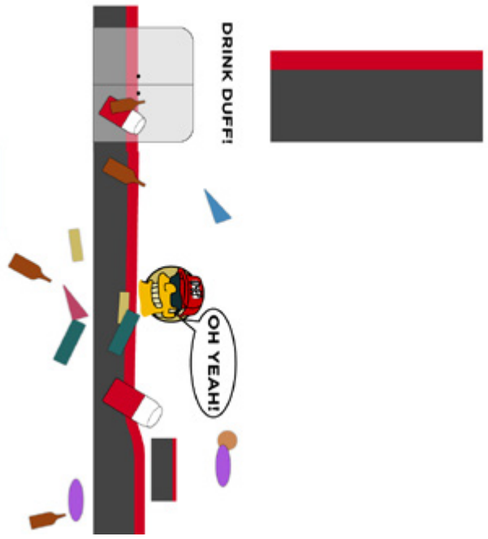


TEXTURING

My idea for the final textures was to keep the Simpsons' cartoon style but implement some real world materials too. For example I designed the Duff Beer can to still look like something out of the Simpsons but with a real metallic shine attached (Fig.13).

Fig.13

Fig.15



I wanted the material of the can to look as real as possible, however, the metalic texture does not come out very well in the 3D space (Fig.14). Most likely because the image's opacity is too low to be seen in the low light of the renderer.

I tried to make the base texture (Fig.15) as close to the reference images that I had, I made some small changes because there is no reference image that shows the other side of the van. Therefore, the side that is covered by the Duff Bear banner remained emptier because it would be covered by another object. To use the space on the other side effectively, I gave DuffMan a small appearance because he would be the one presumably driving the truck.

The first render of the model (Fig.16) shows that the front of the van is slightly shorter than the original image (Fig.18), however, the model itself fits the blueprint that I made. In retrospect, I should have checked the blueprint more times to make sure that any small errors were fixed before starting the model.

Fig.16

Fig.17

ENVIRONMENT AND RENDER

I modelled the environment like a basic city street (Fig.18), I wanted to use the atmospheric fog that the Arnold renderer provides to create a night scene (Fig.19). However, this caused the vehicle's textures to be too dark in certain areas, which is not my intention.

Fig.18

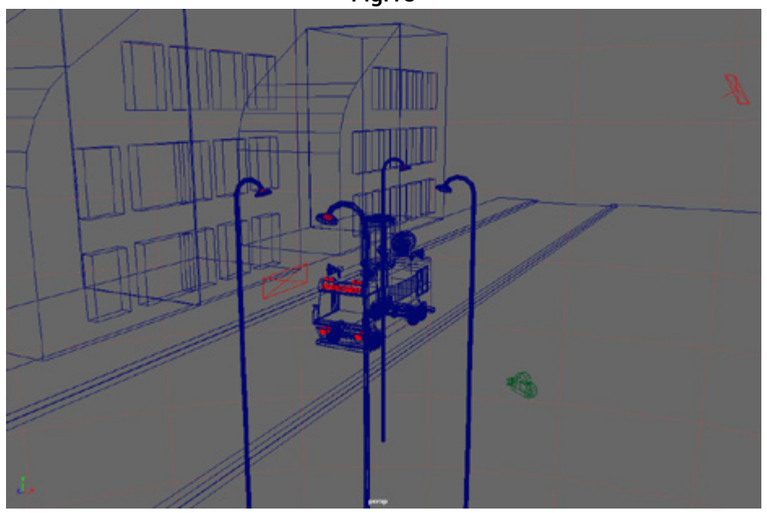


Fig.19

Finally, I used a skylight and lowered the atmospheric fog to create a daytime scene in order to show the final model in its entirety.

Evaluation

Throughout this assignment I learned a lot about how to manage a project that has multiple stages of varying difficulty and how to give enough buffer time in the event that there are unforeseen problems.

I believe my blueprint was well made and it was very useful to creating the final piece. I chose to create a blueprint instead of working directly from reference images because I liked the idea of being able to plot exactly how it will look like before spending the time to create something in Maya that may look completely different to the original. Although the final piece does have some differences which stemmed from using blueprints, they are small and unnoticeable unless comparing the two directly.

Before starting the module, I had never touched any 3D modelling program. I think I picked up the skills enough to create a good 3D model, however I think the modelling stage brings my work down the most because although it is still complex relative to my first idea (the hoverboard) it is a relatively unoriginal vehicle. Had I the chance to redo my assignment I would use something from the Simpsons' universe that was more interesting (such as The Homer).This being said I am happy with the final model.

The UV mapping and texturing was another aspect which I found daunting at first but once we went through it in lectures and by using some online tutorials I understood that it seemed a lot more complex than it actualy was. I used Maya's ability to auto stitch planes together, while this worked most of the time, there still were a lot of overlaps that had to be manually fixed.

Overall, I believe my submission satisfies the brief although I would have liked to create something more complex and original such as the Fallout power armour. But I had to choose something more realistic for the time and skills available to me.

Back to the Future Hoverboard - https://www.forbes.com/sites/simonthompson/2018/08/01/great-scott-back-to-the-future-part-ii-hoverboard-is-up-for-auction/#5e42a8cb75cc

Fallout New Vegas Power Armour - https://fallout.fandom.com/wiki/T-51b_power_armor_(Fallout:_New_Vegas)

Simpsons The Party Bus - https://simpsons.fandom.com/wiki/Duff_Party_Bus

UV Mapping Tutorial - https://www.youtube.com/watch?v=YjwtQRsFe1g

Simpsons The Homer - https://simpsons.fandom.com/wiki/The_Homer

References