

Final Report

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1 Introduction

This document lays out the work and roles I undertook during the Witch and Deer Animation as part of my Major Project. I have tried to order these to best coincide with the flow of a typical production.

There are several roles and responsibilities I undertook as part of the group work, which are listed below: -

File Document Supervisor – This involved the setup of the SharePoint group we used for storage of the files, working with OneDrive, setting up Maya projects and backups of the files.

Environment – This covers all the work I did on the environment within the animation, primarily including the overall internal and external scene modelling, UVing and texturing. This also covers the work I did on each of the locations within the building.

Characters – I did work on all the characters, with a little bit of modelling on some and mostly the UVing and texturing of all of them and rigging of some of them too.

Animation – I setup the animation sequences for an updated Previz (2.0) which included editing some of the animation and creating new animation. I was involved in the character animation of one scene.

Lighting Supervision – I worked on the lighting of the environment and on internal lights for the building and the individual locations

Camera Supervision – I updated the camera for each scene before the final animating of scenes took place.

Rendering – I rendered several scenes and did some render tests on both my machine and within the classroom. I setup the render options for each scene too.

Compositing – I composited both the Previz 2.0 and the final animation. Including the credit scene setup and the initial cloud scene.

Music Liaison Officer – I was in contact with my friend who created the music for the animation. I also worked on sorting the Midi file for the final animation.

The rest of the document expands on the list and identifies the processes and methodologies of each item, mentioned above.

At the end of the document I have created an overall analysis and conclusion section which covers all items.

2 File Document Supervisor

I have divided this role into several different processes that were run by me during the whole project.

The SharePoint group and OneDrive creation/setups were covered in my previous coursework.

Group files

During the move from the Pre-Production work to the main production I updated the folders within the SharePoint group. I informed all members of the group that I was going to be doing this, for two reasons. One so they knew what was happening, and two, to make sure there were no open files while things were updated.

I did this on my machine, using Windows File Explorer and the OneDrive app. The OneDrive app automatically updates the files within the selected folders.

Name	Date modified	Type	Size
Colour_Script	16/05/2018 13:38	File folder	
Design_sketches	16/05/2018 13:38	File folder	
Email attachments	25/03/2018 15:23	File folder	
Maya_projects	16/05/2018 13:38	File folder	
mini_bible	16/05/2018 13:40	File folder	
Mood_boards	16/05/2018 13:40	File folder	
original_coursework_files	16/05/2018 13:40	File folder	
Pre_viz	16/05/2018 13:44	File folder	
Presentation documents	16/05/2018 13:40	File folder	
Shot_list	16/05/2018 13:45	File folder	
SketchUp_files	16/05/2018 13:45	File folder	
Zbrush_files	16/05/2018 13:45	File folder	
OneDrive_video.mov	25/03/2018 16:21	MOV Video File (V	52,689 KB
project_progress.xlsx	15/05/2018 02:01	Microsoft Excel W...	28 KB

Figure 1 – Pre-Production folder setup.

I moved all the pre-production folders to a new group and renamed it “_Pre-Production”.

The Maya_Projects and Shot_list folders were copied instead of moved, as they would continue to be used within the main production.

Name	Date modified	Type	Size
_Pre-Production - READ ONLY	11/06/2018 19:41	File folder	
Email attachments	25/03/2018 15:23	File folder	
Maya_Projects	11/06/2018 19:33	File folder	
Shot_list	11/06/2018 19:34	File folder	
project_progress.xlsx	24/05/2018 11:22	Microsoft Excel W...	28 KB

Figure 2 – Initial main Production folder setup.

I added the “_” to the start of the filename to make sure the folder stayed at the top. A few days later, someone worked in the archived folder instead of the new main folder, so I added the “- READ ONLY” text to the name to make it clearer.

Throughout the rest of the project additional folders were created by me, to account for the new requirements of our work. The same process was used as before, where I created or copied folders using Windows File Explorer. The new folders included a Latest Animation folder where the Previz 2.0 and Final Animation Maya projects were stored along with the Final animation comp files too.

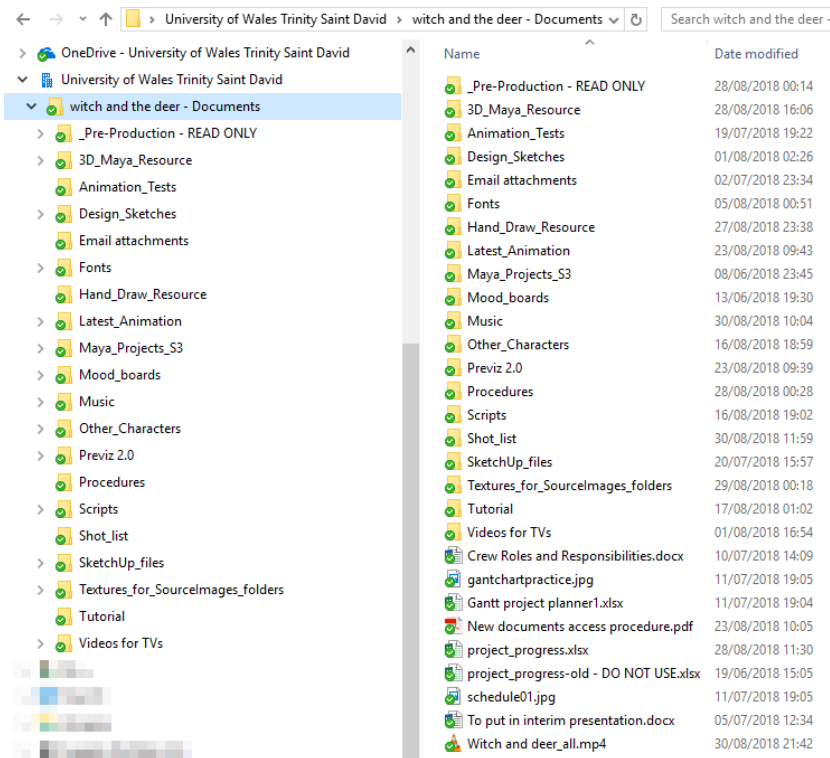


Figure 3 – Final main Production folder setup.

Although the SharePoint system had a version history of all the files, throughout the main project I backed up the files to my portable hard drive.

Every week or two I would copy the full contents of the Witch and Deer project to my portable hard drive and date the folder, so if anything went wrong the group could always revert to the backup file version. The undated folder was always the current working folder.

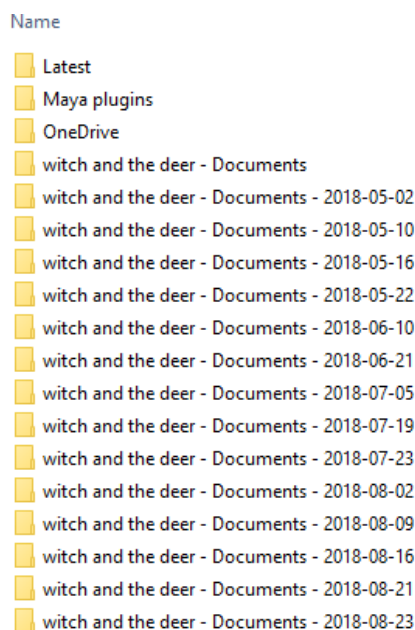


Figure 4 – Dated folder backups of the Production documents.

Maya projects

The new Maya projects structure was altered slightly by me after the pre-production folder was archived. The new setup simplified the environment folders but kept the character folders separate.

In the new setup I merged the building, interior and exterior projects into one project, with multiple scene and sourceimage folders. I created a new project called Props, which had the same separate scene and sourceimage folders too. The files and folders were then automatically uploaded to the group.

Y Drive

I found that references use absolute paths, rather than relative ones, which means the references would need to be reconnected when used on machines with different paths. I investigated a way to have a drive letter on all our machines and the classroom machines, that would allow the Maya reference files to be used without the need to keep updating their path on every single machine or moving lots of files around.

The first way I looked at was working with the classic version of the group SharePoint site, through Internet Explorer, which allowed for connecting to the site via Windows File Explorer. Internet Explorer was the only browser to allow this to happen for some reason. I tried Chrome and Microsoft Edge, but the File Explorer option was greyed out in both of them.

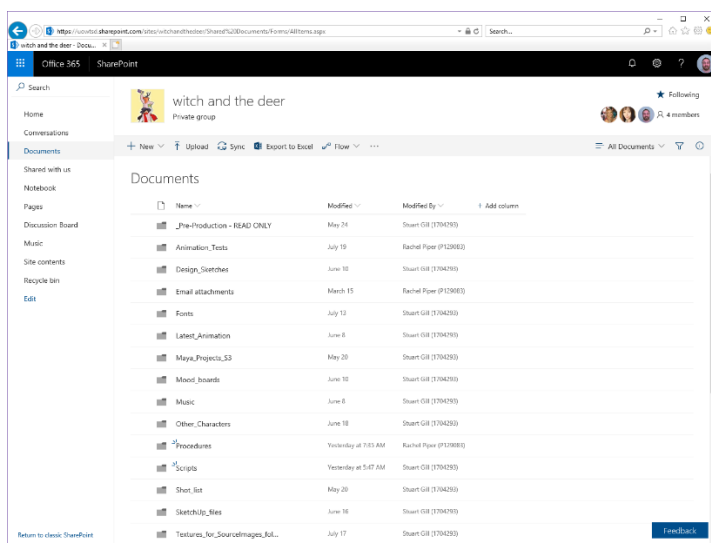


Figure 5 – Current SharePoint version, with a Classic SharePoint link at the bottom left of the image.

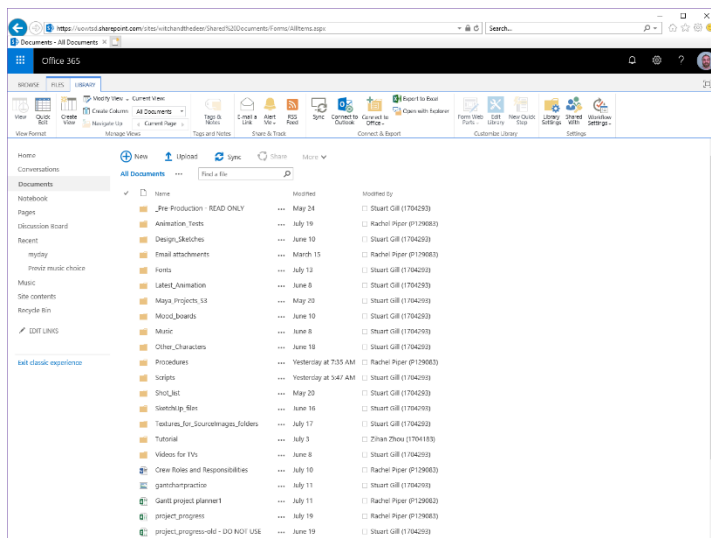


Figure 6 – The Classic SharePoint version, with the “Open with Explorer” link available.

Once the group files link had been setup, the link could be mapped to any drive letter of choice using the Map Network Drive option in the Windows File Explorer menu. I chose drive letter "Y" as it could be used on the classroom computers.

I created a guide for the others to try and implement on their machines called "New documents access procedure.pdf", which is available in the top folder of the SharePoint group files. This process was abandoned as an option after finding the classroom machines would not allow the drive letter mapping to work, so I looked at another option.

I investigated a different way to have a set drive letter for our files, this involved a tiny program which would create a drive letter for any folder on a machine. The program did not require to be installed.

The program I discovered was called VisualSubst, which applied a drive letter to any folder on a PC. I tested this on my machine by creating a drive letter for the group SharePoint folder on my machine. This tool worked well and because it didn't need installing, it worked on the classroom machines as well as the other group member's machines. Unlike the previous drive letter attempt, this worked faster because it didn't require a quick internet or network connection to access the files.

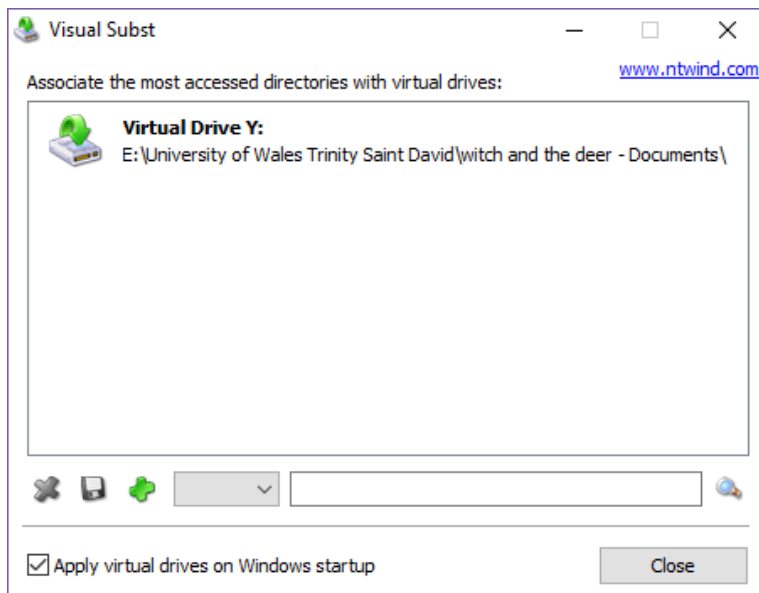


Figure 7 – VisualSubst interface.

3 Environment

The building structure and the outside area were originally created in SketchUp before being imported into Maya. I also worked on all the internal locations to some degree.

3.1 Shop Environment

Main building

I created the building in Sketchup, I rebuilt the front of the building with larger glass panels. I started colouring the building and doing some renders. I updated the design sketch with the layout of the shop and the whole environment.

I drew a basic design sketch of the new building frontage and a basic floor plan of the interior. I created these in Illustrator, with the floor plan intended to be worked on further and to be split up and used as the store map.

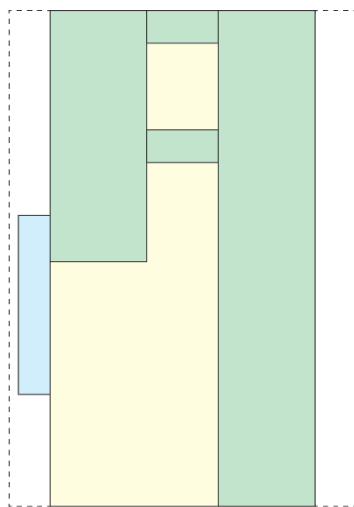


Figure 8 – Design sketch of the building frontage and basic floorplan.

Yellow is the ground floor.

Green is the first floor.

Blue is the café area that protrudes out from the main structure.

The dotted line depicts the extent of the roof.



When I had finished the main structure of the shop building in SketchUp, basic colours were applied to the structure and the glass was made transparent. Renders of the scene were created in SketchUp using V-Ray before being imported into Maya.

The final building had a sloped window in the café area and there was a first floor with some stairs and a lift.

I realised after the slowness of using the referenced files that there were a few items within the scenes that could be instanced and would dramatically cut down on the size of the files. The building had many repeated objects, such as the frames, windows, roof struts and doors. This reduced the scene file size by a few megabytes.

When I went to UV objects I noticed the polygons created in SketchUp were not combined, so I spent a small amount of time merging them so that they could be UVed properly and wouldn't potentially break the rendering process. As many the objects had been instanced the combining was very quick, so rather than combine hundreds of items, I was only combining about a dozen. All objects were merged and some of them were left as multiple

UV shells too, these were the walls and some pillars where only some faces would be visible, and they would be in the background anyway.

I worked on updating the windows to make them less reflective so any of the reflections would not be too sharp or look unnatural.

I did this by changing the specular and IOR levels of the material. I also added a bit of roughness to the glass too.

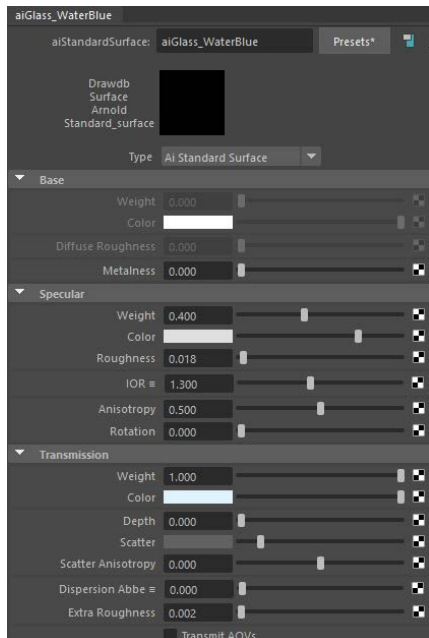


Figure 9 – Maya settings for glass. The specular weight was lowered. The roughness was increased slightly. A slight blue tint was applied to the transmission colour.

Finally, I adjusted the transmission colour of the glass and turned off internal reflections.

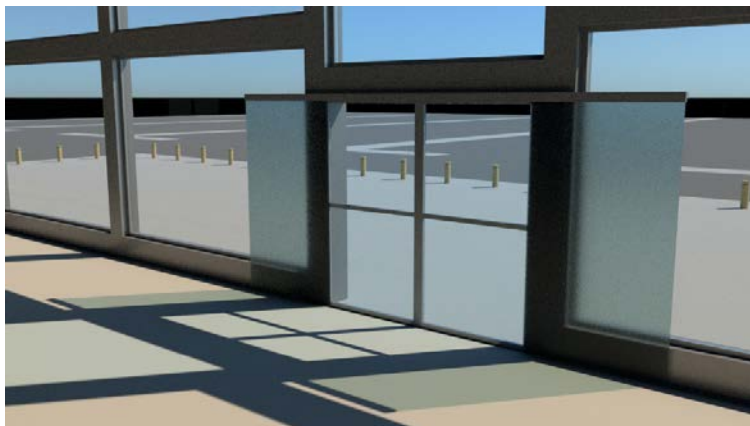


Figure 10 – Image of glass with different colours and some extra roughness for the door protectors.

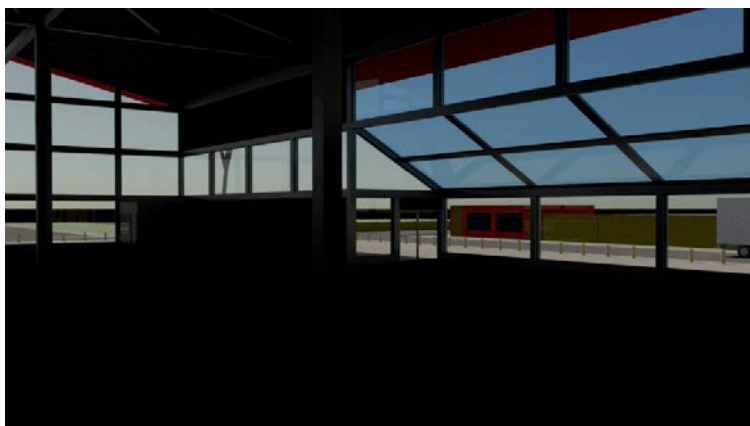


Figure 11 – Image of larger glass areas with different colours.

Once the animating was underway I started to texture the rest of the building.

I located several potential materials to apply to the floors, wall and ceiling/roof of the building. All possible materials were added to a new folder called “Textures_for_SourceImages_folders”. I used the Hypergraph to add and input the textures to the various material nodes.

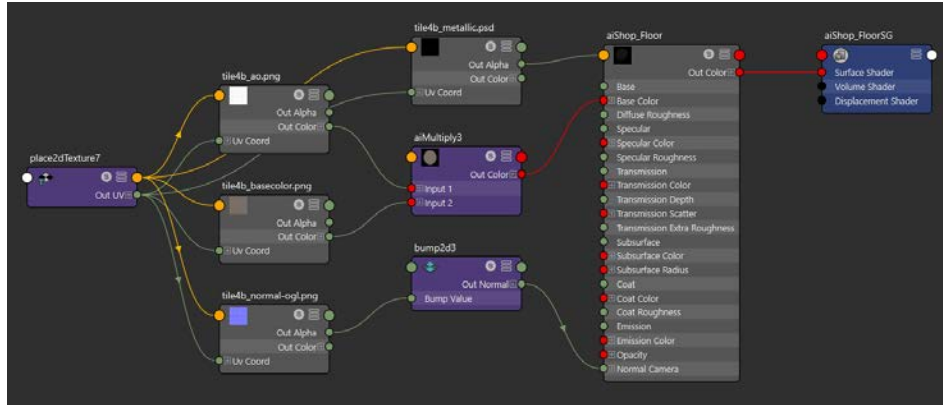


Figure 12 – An example of the main shop floor material setup in the Hypergraph.



Figure 13 – A render of the building showing the floors, wall and ceiling material.

Electrical area

I created a couple of design sketches of possible layouts for the electrical area.

I drew the layouts in Illustrator with the intention of following one of the floorplans for the electrical area.

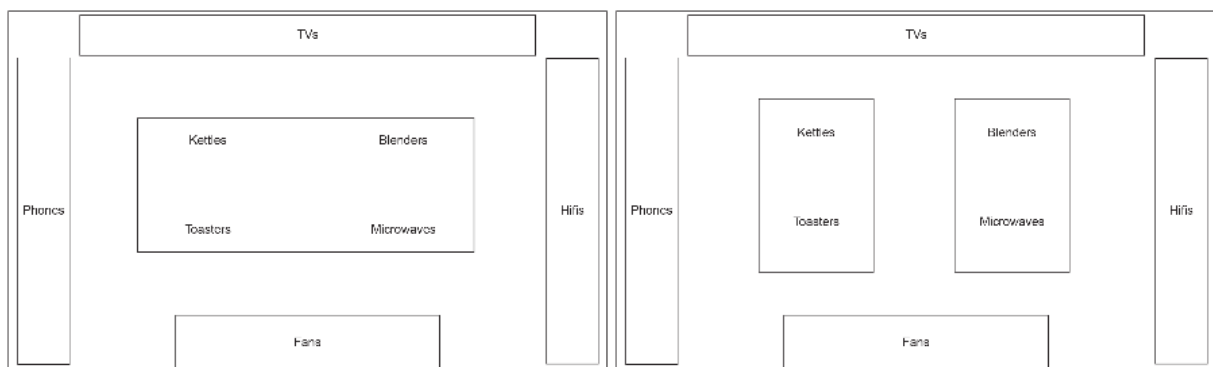


Figure 14 – The two electrical area floor plans.

Stuart Gill - 1704293

I added a few files to the Mood Boards folder of various TVs and appliances. I did some design sketches for different models too.

I created the following sketches on the iPad using the Adobe Sketch app.

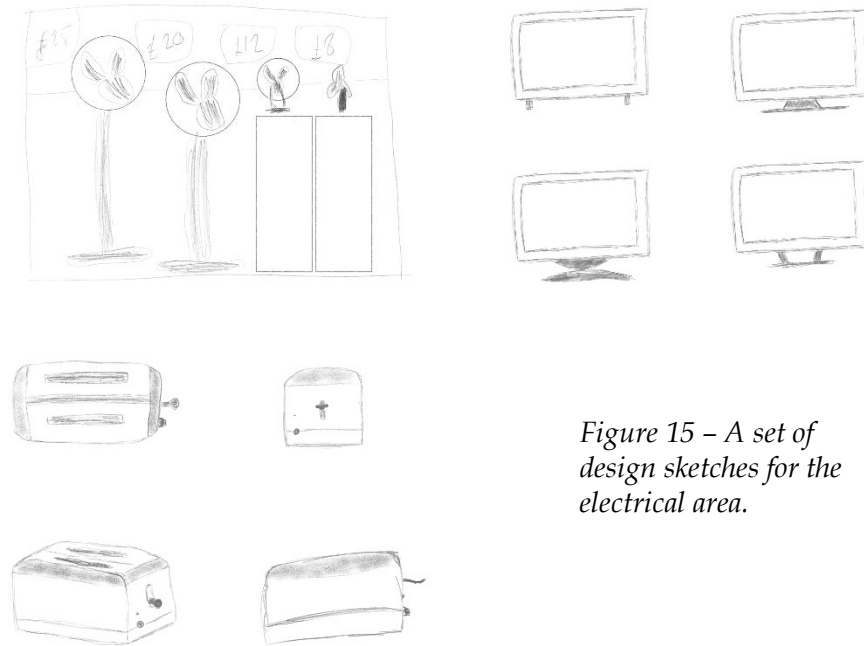


Figure 15 – A set of design sketches for the electrical area.

I created three animated TVs for the electrical area with some of our previous work appearing on them. I asked everyone to upload their Face, Cluedo and plug sequences, to a group folder called “Videos for TVs”, so each TV could show a different project with each person’s work on it. I created a quick scene with each TV and the relevant work on it which was shown in the interim presentation.

I did this by importing the videos into a new After Effects project. Each TV had its own comp where I placed and scaled the individual videos to fit into each screen.

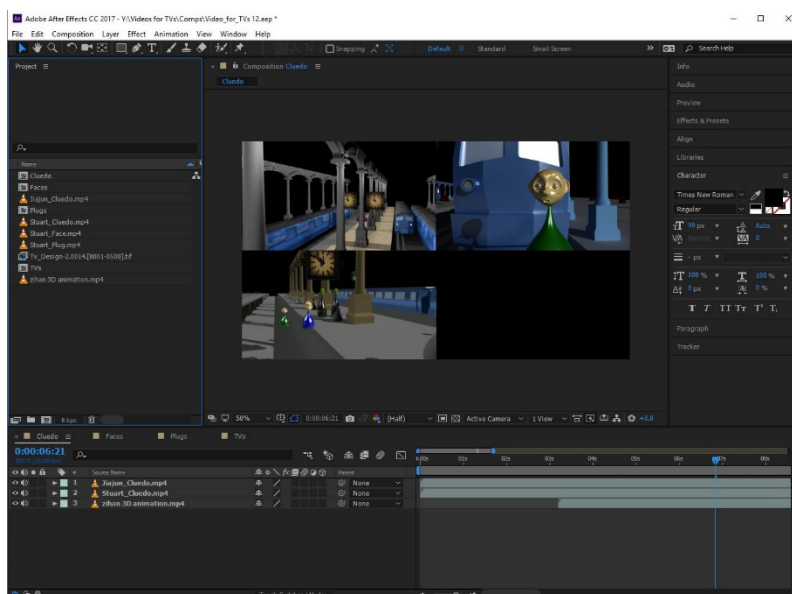


Figure 16 – After Effects project setup for the TV comps.

I then rendered each new comp to a set of images to be used within Maya as a sequence.

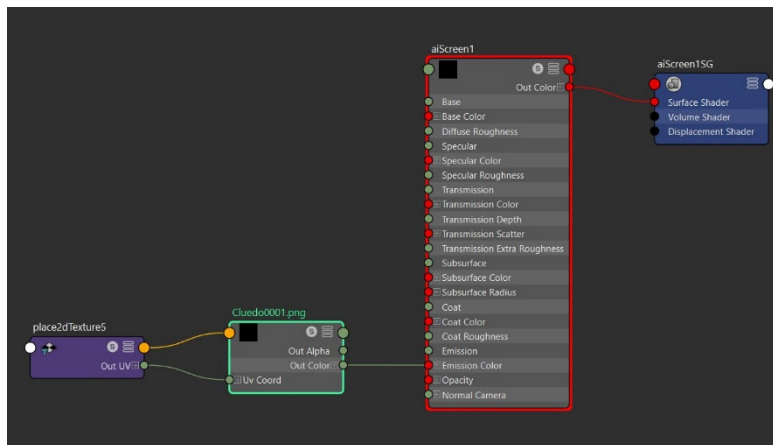


Figure 17 – Hypergraph setup of image sequence material.

A placed texture was applied to the Emission Colour node of the material. Once the file was plugged in I changed the file settings to a sequence, so that each screen would “play the video”. I also added a spot light to the front of the screen, so that it would look like it was illuminating the area in front of it. The next step to this would have been to animate a colour cycle through the spot lights. The other option, to brighten the screens would have been to plug the image sequence into either the Base Colour node or via the Alpha into the Emission node. Either of these would have brightened the screens up and made them more visible in the final animation.



Figure 18 – A quick render of shot 28 with the lighting and TVs.

For the fans I corrected the blade animation, so they would turn continuously. I also added a texture to the fans to make them look more realistic too.

I corrected the fan rotation by turning on the Infinity settings of the blade animation in the Graph Editor and made sure the rotation channel value was set to Linear. I then added an aistandardsurface metallic preset to the pedestals and adjusted the Base Colour and Specular Roughness to suit.

Café

The Café area needed to be placed correctly and adjusted in size to fit the area between itself and the play area. I updated some of the textures, added more items to fill the space and added working lights to the light models.

I opened the latest café scene file and imported the building into it. I moved the furniture around and used instancing to duplicate the items to fill the area and made sure the objects were placed flat on the floor and not floating above it. I added more wooden struts and resized the floor to fit the new area. I worked on the textures of the floor, the counter, the wooden lattice structure and the big planters.



Figure 19 – The café from Zihan before updating.



Figure 20 – The café after updating.

Play area

I created balls for the ball pit and adjusted the model to better fit the floor space. I added new material to the objects and adjusted the height of the main bars because they were sticking out of the roof of the building.

The model was almost complete when I started working on it, except for the missing balls in the ball pit. To try and get balls in the pit without taking a long time to manually place them I tried two different techniques. The aim was to create a natural pattern of balls quickly, which would fill the ball pit and interact with the Deer character during the animation sequences.

The first process was to create multiple balls using the nParticle function within Maya. I used this function and added instances of the balls to the particles. I edited the ball collision settings, so they would roll around and collide with themselves and the ball pit. This worked very well to get the balls into the pit, but I could not remove the dynamics once the balls had filled the pit.

As this process didn't work I looked at using the MASH system to fill the pit instead. I managed to get the system to quickly multiply the balls and have them fall. I made the pit a collider, but the balls kept falling through it or landing above it and then rolling to the origin point of the scene.

In practice both techniques worked to a certain extent but couldn't be applied to the final ball pit as required. The MASH system did allow the instanced balls to become independent objects that could interact with the scene. As time ran out I created an image plane of balls instead and placed that in the pit. This was done to create a view of depth of balls while a small number of actual balls could be placed on top and interacted with by the characters.

I moved the ball pit away from the slide and added a small landing pad at the bottom of it.

Rotisserie

The rotisserie was partly finished before I started work on it. The main things I did to it were to add lights, adjust the doors and add controls for them, adjust the chickens, add textures, duplicate some of the meat to other counters so they would not be empty and adjust the central unit.

I moved the rotation point of the doors to the hinges and created a nurbs object, which I used as a control for opening the doors. I did this by restricting the movement of the nurbs circle to the outer shape from within the Limit Information section of the Attribute Editor.

Once I had limited the movement of the controller I used "Set Driven Key" to connect the controller to the left door group. I set the controller Translate max and minimum values as the Drivers against the door Rotate max and minimum values for the Driven object. On the minimum settings the door would remain closed, on the maximum value the door would open to about 88 degrees.

Using the new Shape Editor, I created some bite marks in the middle chicken for use in one of the scenes. With the Shape Editor open and the chicken selected I pressed "Create Blendshape" from within the Editor interface, then I pressed "Add Target" three times to create three targets. I renamed each target in the list as Bite 1-3. I selected the first target in the list and pressed Edit. I modified the chicken shape by moving vertices. Once I had created the shape I wanted I turned off edit on that target, then did the same for the other two targets I had created. All this was done on the same object without having to create separate objects and each target could be changed within the Editor at any time.

Shelves

I took the shelf created by Rachel and positioned them throughout the shop. I added a texture to the shelves to make them look metallic.

I did this by placing the first one and then instancing the rest around the shop. For the texture I created a metallic aistandardsurface, changed the colour, lowered the Specular value and increased the Specular Roughness.

Freezers

I added doors to the freezers and created a control to open them.

I built doors into the existing freezer structure provided by Beck. I added a glass aistandardsurface material to the doors and used the Specular Roughness to make them look frosted.

As I did with the rotisserie, I created a control for the doors to be opened and keyed in the animation. I did this to both doors and included the controls in the group before instancing the freezers along the wall. I had to change this when all the freezer doors opened at the same time. To resolve this, I made a regular duplicate of the original and moved it to the correct position. I then removed the controls from the original which also removed them from the instances. The main freezer now works independently of the others.

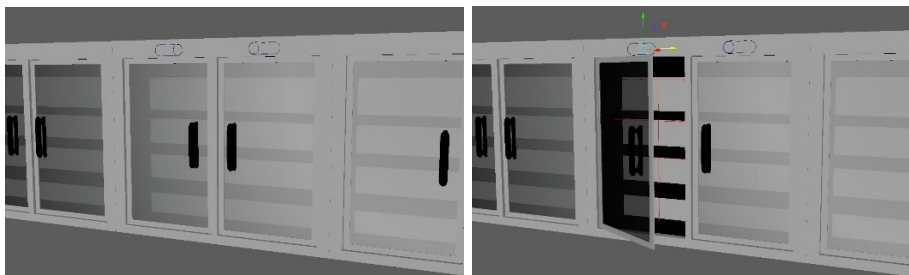
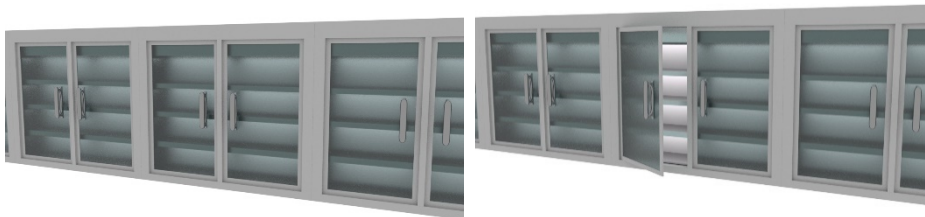


Figure 21 – The freezers with the door controls.



Store Map

I created a store map and some animation of magical crosses for a shot.

I created store map initially as a couple of rectangular polygons for position and size. Later in the project I had time to create a proper shaped map board and stand, with some colour. I also updated the store map image in Illustrator and added it to a flat plane resting on the front of the stand.

I worked on a sequence for the crosses appearing and shining on the map. I used the Emission values of an aistandardsurface material and keyed them in, so each cross would glow. I also made the crosses “rise” out of the map surface by moving them from within the shape to laying on it. I keyed the timing of these objects, so that each one rose out one after

the other from the map front, shone brightly for a second and then returned to a lower intensity.

I created the cross shapes from the new text tool within Maya. I modified the shape, then used the Emission values to create the glowing effect. Then I duplicated the object once I had setup the timing of the movement and the flashing glow. I used the Graph Editor to adjust the time of each cross to make them appear sequentially within the scene.

Stairs and Lifts

I quickly created a set of stairs and asset of lifts for the store. These would be in the background but could have been used for any background characters to use.

For the stairs I started with a basic rectangle, which I positioned and sized to fit between the floors, I then subdivided it to extrude the faces to make the stairs. I added some textures to the walls and floor.

For the lift I created a set of walls. On the front wall I added some polygons for the doors, the surround and a sign. I set them out from the main wall, then textured the walls and door unit. I then duplicated them to make two sets of doors on the ground floor and duplicated again before moving to them up to the first-floor level.

3.2 Exterior Environment

I placed pavements, roads, curbs and grass outside. I created a building across the road to fit with the colour sketches that were created in pre-production. The fence panels and bollards were instanced too.

In SketchUp I created the environment outside based on a design sketch I had produced in Illustrator.

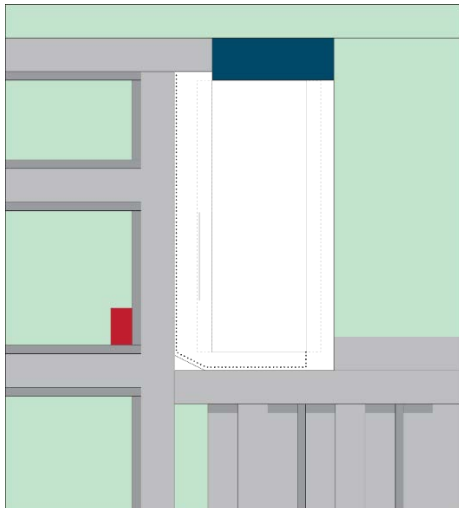


Figure 22 – The environment layout created in Illustrator.

I looked at some vegetation creating software, such as Laubwerk, E-on Vue, Speed Tree and one or two others, to see if we could use them to create nice looking trees.

I decided to play with XGen to create grass, as I could see parts of the scenes having a small amount of grass. I created a scene with some materials and found a very useful tutorial about creating grass, with random colours, sizes, shapes and bending of blades. This used the random expression option within the XGen settings on parts of the grass. Using this technique, I was able to create realistic grass and allows for the option of applying this to fur and hair on the characters too. The main issue is how much time it will add to the renders.

During the process of creating the environment the file size was rather large for what was in the scene. I decided to instance the bollards and the fence panels, so it would reduce the file size. That helped a bit, but the size was still too big. I looked at the grass area again and realised it needed to be recreated as it had a lot of small faces because of the way it had come over from SketchUp. So, I replaced the grass area with a new flat plane, which I subdivided and used the Soft Selection tool while adjusting the height of the vertices to adjust the land to a similar shape of the previous grass area. After doing this the file size was reduced by over 60%.

I textured the different parts of the scene. I found a basic grass texture to apply to the grass areas around the building. I also found a nice road texture I applied which had road markings in it. I slightly cheated when I UVed the road texture, as I needed the road to fit along one axis and repeat along the other. So, I resized the road shell in the UV so part of it stuck out of the 0,0 area. This was the only way I could get the road markings to be on the edge of the face.

4 Characters

During the project the characters were worked on by all of us. I did all the final UVing and texturing of each character while I edited some of the models and rigged some of them too.

All the characters were rigged using the Advanced Skeleton plugin, which was initially mentioned by Beck. I investigated the plugin and found a good tutorial that I was able to follow quickly and managed to rig the shopkeeper within an hour of going through it. Later, I also rigged the witch very quickly too.

4.1 Shopkeeper

I UVed the character after seeing problems with the textures. While working through the UVing I also adjusted some of the modelling, particularly places where there were gaps, or the faces were intersecting.

I tidied up the UVs by mostly optimising their size and rotation, so they filled more of the UV space. Once they had been optimized I added textures. I used a layered texture to change the colour of the hat and t-shirt.

I moved onto rigging the character using the Advanced Skeleton plugin. The rigging process was quite straight forward and included a clean up of the model at the start of the process. The skeleton would be fitted to one side of the model and once everything was positioned it was updated and created the rig on both sides with all the controls in a matter of seconds.

All that was left was the setup of the skinning of the model. I looked at the multiple options and applied a couple of them to the model to create the Skincluster setting. It was now ready for manual weightpainting.

The Advanced Skeleton rigging does lose the blendshapes, which hopefully can be brought back in from an earlier version and reapplied.

I did a quick test to bring in the blendshapes to see if they still worked. There is a bit of under driving of the movements, but they seem to work well enough. One of the operations to get the model ready for the rigging process is to clean the scene, and on closer inspection, when I looked at the rigged file, it looked like the cleaning had added more edge loops into the model.

After working on the witch and fixing the blendshaped eyes, I applied the same technique and weight painted the Skincluster away from the eyes, so the shopkeeper now had eyes that would close properly.

The shopkeeper was passed back to another member of the group for weightpainting.

Once the weightpainting had been finished I did a quick animation test using the Advanced Skeleton Animation tester tool. There were a couple of minor issues but overall the animation worked well.

4.2 Witch

Initially the witch had some form of texturing applied to it. I looked at it in more detail and decided that I needed to do the UVs properly. Following the UVs, I then textured the witch too.

During the UV process I resized the shells to better fit the space. I added textures and worked on changing the colour of some of them. I also added a layered texture, so the main jumper texture could be scaled, while the hearts could be blended on top and not be scaled too.

Between UVing/texturing stage and the rigging, the witch had a new head recreated by one of the other group members. I added a subsurface scatter skin colour to the model as it looked a bit yellow. The freckles disappeared but the character skin now looks pink and more natural. Initially I did this in a temporary file as a test.

When I came back to rig the witch, I found the model was not symmetrical. This is something I didn't look at when I UVed it and realised I should have checked earlier. I had to fix the model before I could rig it just in case the asymmetry could break the rig or the animation.

While looking at the model, I found the eyes were not aligned properly, the shape of the head was not symmetrical and the hair on top of the head needed fixing, so it could be textured properly. I found the hair had multiple separate surfaces on top of each other, so I went back to an earlier version, exported the selection of the correct hair and imported it into the latest version. The hair had been converted from nurbs to curves, rather than to polygons, so by going back to the earlier nurbs version, I could convert it to polygons and make sure the objects could be combined correctly.

For the head, I chopped it in half, made sure the vertices were lined up correctly for the centre of the shape, then I mirrored the head and merged it together again.

The only issue with fixing the symmetry of the face were the blendshapes would no longer work once it had been corrected, as they were based on the asymmetrical shape. I had an idea to correct the blendshape faces in the same way as the main face, so I chopped them in half, aligned the vertices to the centre of the face, duplicated and merged them.

I managed to sort most of the blendshapes for the witch, so they were working with the updated head shape. There was one blend I wanted to sort but it was asymmetrical through the middle of the face, so it needed to be applied again to a neutral face.

Before weightpainting I spent some time trying to fix the witch blendshapes. For some reason all the blendshapes worked fine on an unbound head but once the head was bound to the rig the eyes wouldn't work properly but all the other aspects of the blendshapes worked without a problem, the same as the shopkeeper.

Another problem I found was the head would stay put as the rig moved around. I figured out this was due to the blendshape being applied to the incorrect place in the Inputs list. I

was able to adjust the Input order and place the blendshapes before the Skincluster, which fixed it.

I finally fixed the blendshapes of the eyes on the witch after a bit of testing I found that one of the skinning procedures was affecting the eyes. I was able to weightpaint out the skinning on the eye area and the eyes finally worked properly.

I updated the witch's hair by texturing it all the same. The top and the main hair both look like they have multicolour strands running through them.

4.3 Deer

I worked on the UVing, texturing and minor model repairs of the Deer.

The deer had a texture on it, with drawn on fur, with an obvious seam along the neck. So, I started work on UVing the Deer. I split the head from the body, so it could be worked on separately. It proved to be a bit of a pain to sort but once it was completed the Deer looked a lot better.

I played with the subsurface channel settings of the Arnold shaders to setup a more realistic skin material. I added this to the Deer's skin and made the skin a bit darker than the defaults.

While working on the UVing I had to remodel parts of the head, such as filling a hole in the nose, adding eyelids, correcting the teeth because the polygon had broken, editing the shape of the arms and the torso of the pyjamas. I also adjusted the shape of the trousers and fixed the turnups, so they would work properly.

I separated the antlers, so they could be UVed properly and have a higher quality texture applied to them. I also added colour to the nose of the Deer too.

I had some responses about the Deer fur being too dark, so I created some alternate versions with different and/or lighter colours. I posted the picture and asked the others to have a look. They all preferred the lighter version, so I replaced the head material with the new one.

4.4 Child

I started work on the child, first by altering the model a bit. I worked on the shape of the arms/hands, head, hair, dungarees t-shirt, legs/feet before adding ears.

I UVed the various parts of the child model. I started with the T-shirt, then worked on the arms/hands, ears, dungarees, dungaree straps and buttons before going on to the legs/feet and finally the head.

UVed the T-Shirt with cuffs and a collar and the dungarees without before deciding to add more vertices to make more seam cuts in the legs and edges of the dungarees.

After adding a scaled denim texture to the child, I investigated a way to have some text on the front which wasn't scaled. I used a layered texture to add the text

I created the text in Illustrator and placed it into Photoshop, I exported the file and put that into the layered texture. I played with the different layered texture blend modes to get the look I wanted.

On the edge of the dungarees I created a seam which was added to the text layer in Illustrator. I lined up the edges with the UV shell as best I could. It involved some tweaking of the UV shells and the seam lines, to get it to look okay.

I had to fix the baby after it had been rigged. There was a hole in one of the ears which would have appeared in the rendering. I also fixed the blendshapes, so that the eyes would be open all the time, rather than being closed, as they were, on most of the face blends.

I did this by replacing the blendshapes with ones that had the eyes open. I deleted history on the heads then moved the line of existing shapes up except for the one with the eyes open, which I duplicated across. I then applied each original blendshape with the closed eyes to the new open eyed one below itself. I turned the blend to full, then edited the membership and control clicked to remove the influence around the eyes. I then deleted the history of each pair, deleted the old heads and renamed the new heads.

I then proceeded to apply those blends to the bridge, and the bridge to the main head. I then added the blend attributes to the main rig controller.

During the rigging the dungaree buttons had disappeared, so I found a way to add them back. There was a script online which automatically selected the joints connected to the pyjamas, so I could copy the weights and add the binding to the buttons, before adding the correct weights and Skincluster too.

4.5 Other Characters

I found a modelling program called Adobe Fuse, which also does animations through another Adobe site called Mixamo. It lets you build by styling all the body parts, before adding clothing. Once you are happy you can save the file within Fuse before moving to Mixamo. Mixamo, initially creates some rigs for the character, which can be saved in several formats, or it can be opened in an animator page. This page has lots of preset movements which can be applied to the character and each sequence can be exported and used in Maya.

I created a quick scene with an animated version of a Fuse character I had created but soon realised that whether I import the file directly into a scene or via another scene file, it can't easily be moved around the scene. The rigging was complicated, and there were no controls setup on it.

When I put the figure into the scene and tried to move it around, it kept reverting to the original position, the problem was the lack of a proper set of controls which would allow the repositioning of the character. The option was to have a non-animated T-posed version which could have controls added.

When it came time to animate the scenes, I looked for a way to add a control rig to the Fuse characters. I found an old version of a control rig plugin for Maya, which we got working. It required a T-pose version of the character to apply the controllers to, and an animated version to be used to apply that animation later, if you so wished. It had a different set of controllers to the Advanced Skeleton plugin.

There was an option within Advanced Skeleton to import a character from another program but there were no presets for Mixamo. So, each limb would have to be matched up manually. Since the end of August, there has been an update to the Advanced Skeleton plugin and it now contains an import preset for Fuse/Mixamo characters.

5 Animation

After moving to the new folder setup used in the Pre-Production, I worked on updating the scene files which then became Previz 2.0 and contained all the new reference files. The work on Previz 2.0 allowed for a very quick setup of the final animation project.

I added the new reference files to the scenes of the updated previz shots. It was slow going and the references were taking their time coming into the scenes. I brought in the updated models and transferred the attributes from the existing character models to the new referenced character models.

I used the "Transfer Attribute Values" option found under the Edit menu. It allowed me to copy the animation of the previz character models to the new character models, this would work if the configuration of the character models were the same. In this case they were, so it was quick to update to the new referenced models.

I tweaked lots of the animation in places, particularly where the characters and shots were not in a suitable location within the new shop layout. The biggest changes were the additional scenes with the fan being thrown and then landing and hitting the boxes off the shelf. I spent a little longer animating the fan and the cameras. I worked on the fan bouncing into the boxes and the boxes slowly moving and toppling over. The last scene I added in and worked on a bit more than others was the one with the boxes laying on the floor and one of them moving around.

I worked on two scenes within the final animation. The first involved the Deer throwing the fan away and the second was the fan landing against the boxes, where I add the updated Witch character and moved her along.

6 Lighting Supervision

I setup all the lighting throughout the environment and saved the setups as referenced files, so all that was needed was to bring the references into any file.

There were some scenes, particularly the scenes outside with the sun behind the characters, which would need additional lighting in the direction of the camera.

The main sky light was a sky dome light with a physical sky added to it. The main shop lights consisted of three big area lights and were only meant as a stop gap option before proper lighting would have been used.

With the different locations, I add background lighting to objects. This lighting may not have been obvious but add to the atmosphere. That lighting included the rotisserie heating glow, the lights in the café, the lights under the freezer shelves and lights in the electrical area.

While working on the store map I noticed there was a lot of grain in the rendered images, which needed to be looked at before the rendering stage. I looked at the Arnold denoiser and tried it with this scene, it worked well but the default settings would need to be changed. It also required some Arnold render settings to be turned on and the file output set to exr. I discovered that After Effects would happily work with exr files too, so if that was the chosen process the images could be comped with minimal extra work. The only barrier, and a big one, was the denoiser option wasn't present in the older version of Arnold that was installed on the classroom machines.

7 Rendering

I did some test rendering of one of the scenes on my machine and on a machine in the classroom to compare render times. The render times were only a couple of minutes on the classroom machines, and far less on mine.

I setup a trial for Arnold on my machine, which allowed me to batch render in the background and carry on working. I created a script to try and batch render multiple scenes on the same machine automatically. Unfortunately, the script would not work, and there was not enough time to try and fix it.

Due to the noise in the store map shot I tried changing the render samples to get a higher quality. Changing the samples helped reduce the noise a lot but also increased the render time.

I had big problems rendering shot 3, which even on my machine was taking too long. I set it off as a batch render overnight, expecting it to have finished within a few hours but by 11am it had only done 50 frames of the 100.

I carried on working with it running in the background but realised I had to sort it out as it was taking too long. It was taking +15 minutes to initialise each frame then it only took less than a minute to render it after that.

I stopped it on frame 80 so I could see if I could fix it. After a bit of checking I found it was the goods shelf causing the problem, despite being instanced it was still slowing the render initialisation down a lot.

I had already taken a quick look at the Arnold Standins and decided to try and create one of those for the goods shelves. I created a stand in of one of the shelves and added it to the problem scene. The rest of the scene rendered in about 15-20 mins.

I rendered 6 scenes in total for the animation.

8 Compositing

As I worked through the Previz 2.0 I created a project comp, so the animation could be viewed by the others. When it came to the final animation I continued comping both the playblasted files and the rendered files in the same project. I created a set of folders within the project to keep it orderly, one folder was for the individual shot comps, the second for the playblast files, and the third for the rendered files.

I took the cloud image created by Zihan and modified it, so it would last longer and have better transitions. I did this in Photoshop I redid the blurred section and then used a gradient filter to blend the edges into the sky. I used the colour dropper to select the top colour of the sky in the following shot and replaced the bottom of the cloud image with it. I then placed this image into the comp and animated the movement.

9 Music Liaison Officer

I spoke to my friend Gareth regarding the music on a regular basis, I sorted out his access to the files on our Office 365 group too.

He quickly played a few versions of music, which were all a bit different. I asked him if he could do some short samples of the music for us all to listen to as a group.

Before the final presentation, Gareth sent me a Midi file containing the music. I had experience with Midi files before and realised I would need to find an instrument sample file. I found some sample files and tested each one out before choosing the best one to convert the music with. I converted the Midi file and imported it into the comp ready for the presentation.

10 Analysis and Conclusion

As you can see from the report most of the processes worked. There were only a small number of issues, which I am sure could have been rectified with more time.

Combining the character models before rigging would have resolved several issues with the characters where certain polygons on the body of the characters collided and the buttons moved separately to the clothes.

The attempts to fill the ball pit were the biggest unresolved issues. Further investigation and time would hopefully allow for a better outcome.

Overall, most of the processes worked well, although the animation wasn't finished, I think the work I did was to a high standard and I would not change the things I did.