

Introduction to 3D modelling work

by Josh Thomas

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03/10/2024

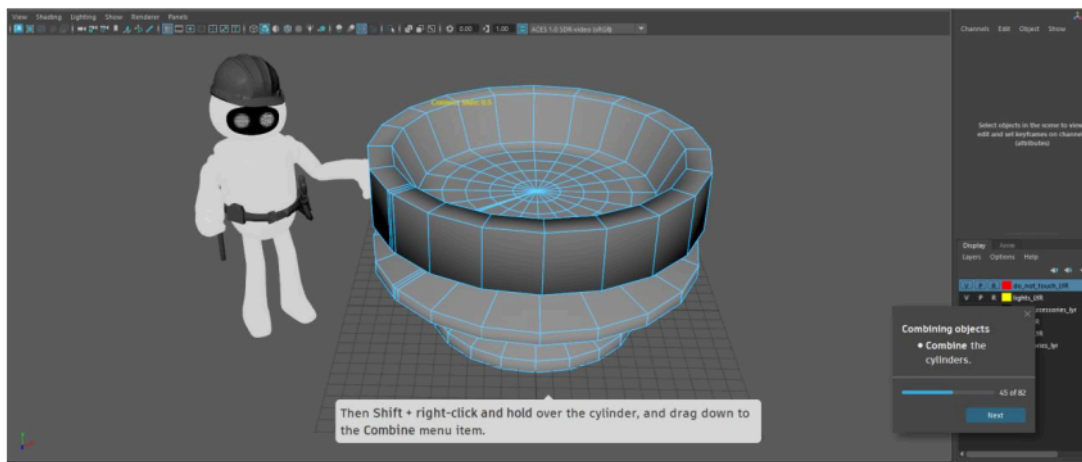
Today I was introduced to maya [1] for the first time.

I was taught all the basics about maya, like how to move the camera, spawning basic shapes and how to move/shape/rotate them.

It took a bit of fiddling but I think I have the basics down into memory I sure I'll have great fun with this

Personal note

The second tutorial (the modeling one) has stopped working as the robot refuses to believe that I combined the two objects together.



Like this

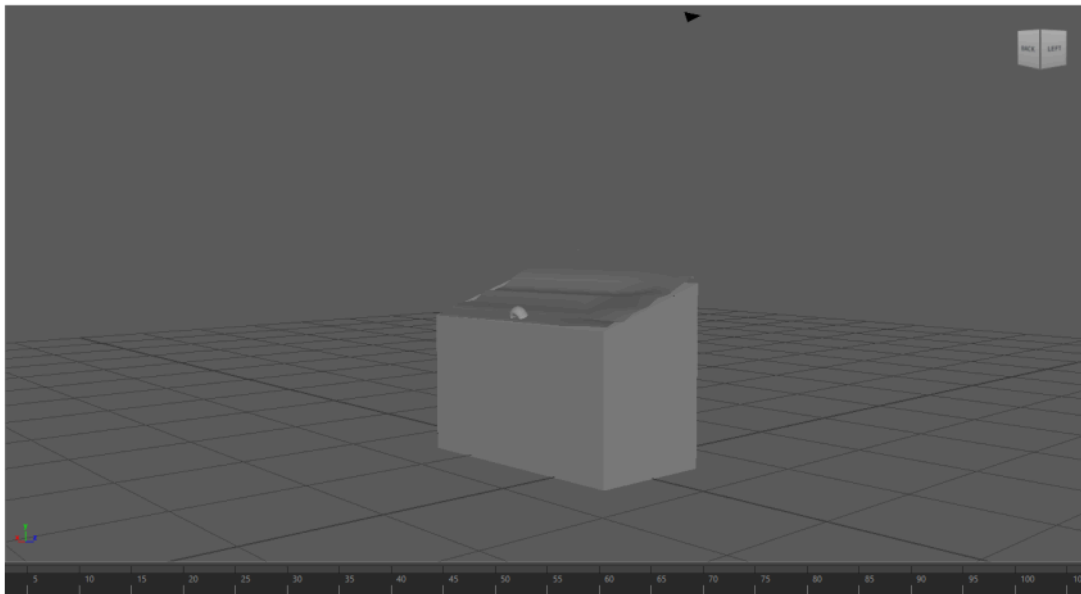
Which is annoying. I'll do it another time.

10/10/2024

Today wasn't too talk heavy, we were just taught about some tools we could use while making things in Maya. Most specifically the extrude tool (Ctrl + e) , which can be used to add more polygons to a mesh, basically adding a new shape onto a already existing shape.

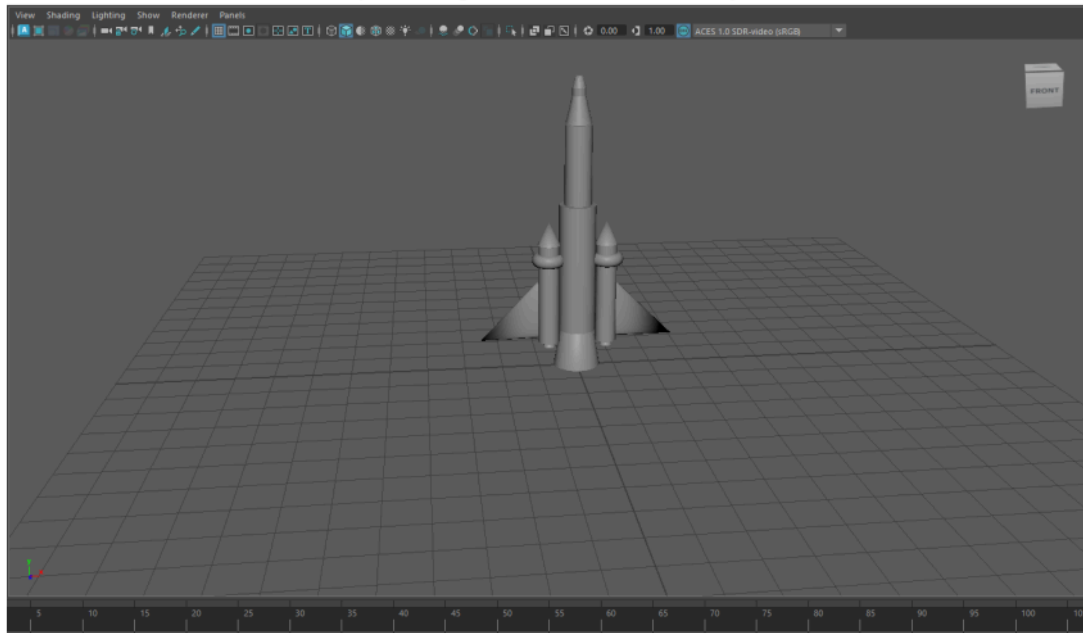
We didn't really have a specific task to do so I started fiddling around with Maya.

During this session I ended up making two different models, the first being a practice attempt at making a dumpster which I'll show you below: (It might be worth getting more images to of more of the model)



The extruding tool made it easy to make the interior of the model but the thing I struggled with was making a lid, one because I was trying to have a sheet metal for a lid which turned out to be a massive pain to make look consistent, and two I found out about halfway through that the model was on a slight slant making thing like the lid and its hinges hard to line-up properly.

The second model I ended up making was a rocket, which you can see below:



Honestly this model started out with me trying to make a base for a lamp post which ended up looking a lot like the typical cockpit that astronauts would sit in at the top of a rocket and just kind of went wild from there.

I'm happy with the look of it but after listening to what my lecturer was saying to another student, I realized it does have a major technical problem (theoretically anyway).

Ok hear me out, they were talking about a game that had a bad optimization problem, and one of the reasons was because of the models. The issue was that when you combine shapes in order to make a coherent object there will be surfaces of those models that won't be visible from the outside but will still be present on the inside and when if you were to then try to implement said model into a game or you try to add some shading onto the model it will try to shade those surfaces on the inside which ends up taking up processing power on something no one will see. Obviously when dealing with a single model this probably shouldn't really matter but if an entire game is made up of models with this same design flaw that's when it becomes a problem

This is why I said theoretically, as at the moment, I won't be using these models for anything major, but I should learn to remove these surfaces for future reference.

I want to keep altering this model as learn new things as a reference point of far I've come with 3D modelling as well as a good way of keeping track of different techniques, so I'll keep making records as I make changes.

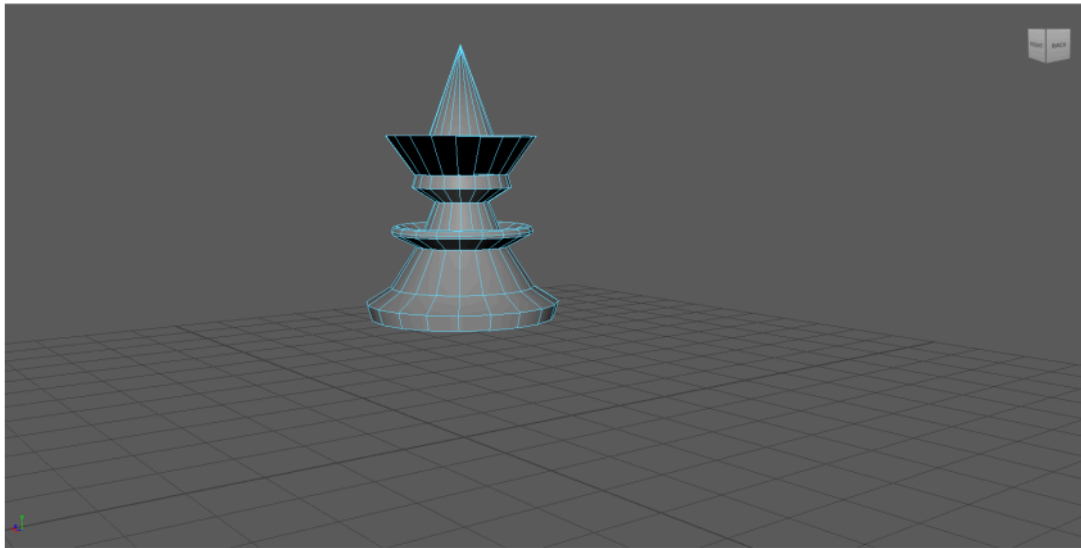
15/102024

Today was much like last week, not too much talking and no real end goal so we were left to our own devices to fiddle around with the new tools we were taught.

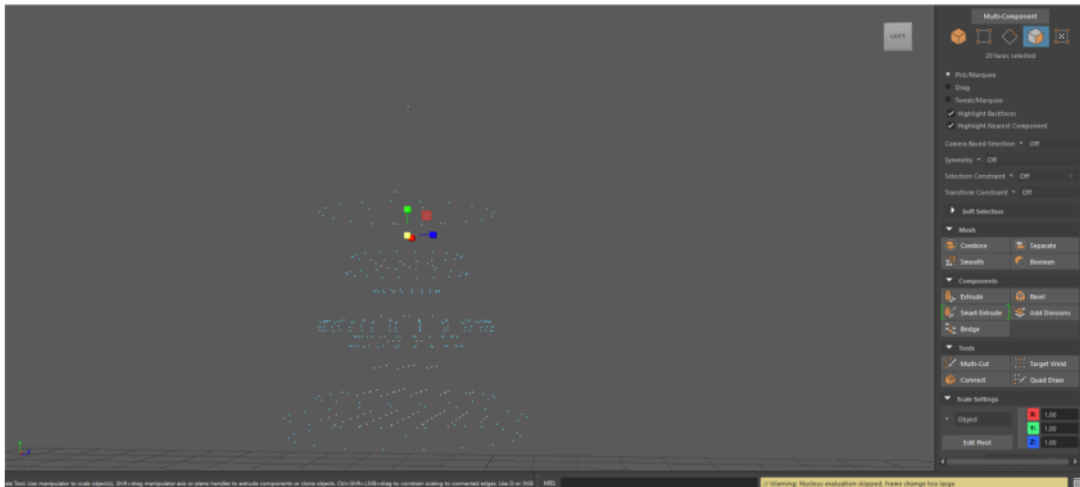
In fact, we were taught two that day, one was a way create new edges on an object. Edge Tool allows you to give an object more shape either to smooth it out or to make a new shape entirely. This is how it looks: (I forgot to get an image sorry)

The other tool we were taught to use was called the bevel tool, which can be used to automatically smooth out an object. This can useful when you need to make an object more natural curve.

Below is an example of an bevelled object:



In the latest addition of “how did I get here”, I was fiddling around with other tools on maya while I was bored and I somehow ended up with this:

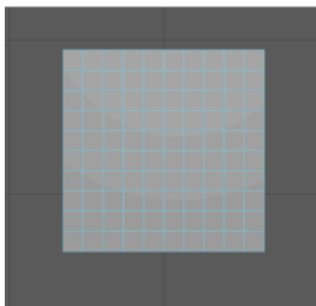


I genuinely don't know what I did to cause this but this version of the model was doomed as I couldn't figure out how to fix it so I ended up exporting the model into a new project and whatever digital voodoo I ended up conducting was reversed, and I was able to continue fiddling.

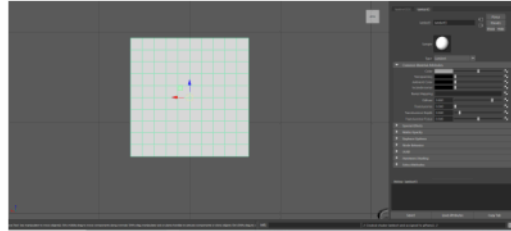
24/10/2024

Today we were taught a few things, like importing an image onto a surface, how to make an object live and how to use the quad tool.

Importing the image turned out to be a bit of a pain but here is how to do it (your welcome future me). First get a flat square like this:

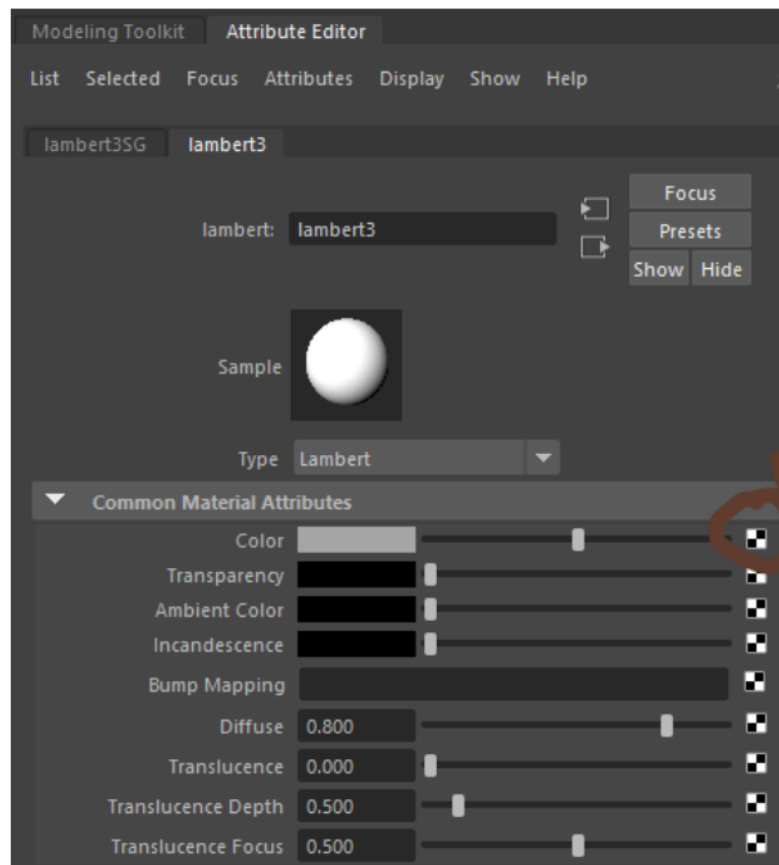


Then hold right click and scroll down to “assign favourite material” and chose Lambert, it



should look like this:

Then click on this:



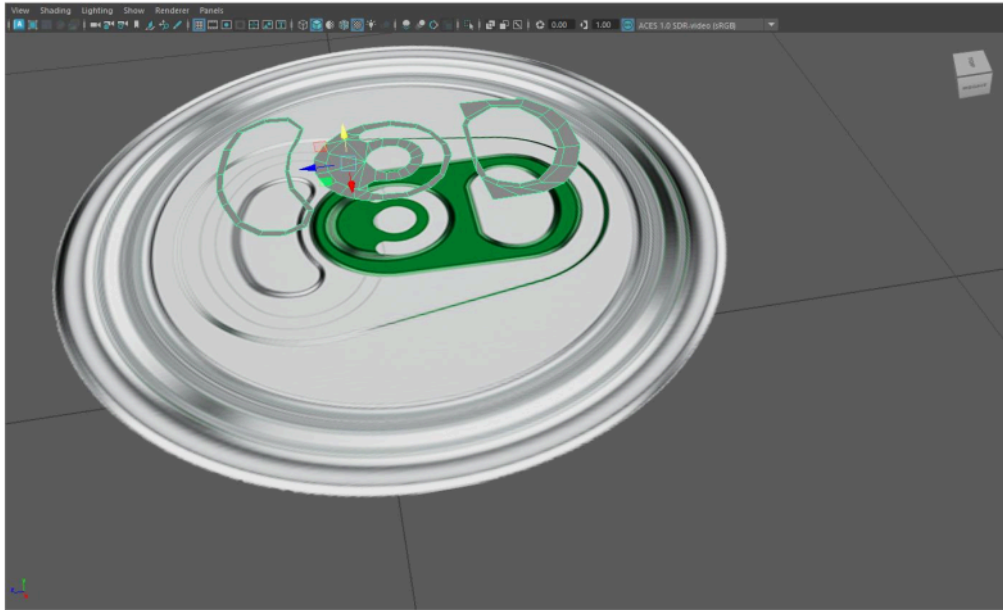
Then change it to a file rather than a colour.

Then just look for the file you want and insert it.

And finally, how to use the quad tool and what it does. The quad tool is used to create four sided polygons on 2D objects which can be extruded to make 3D objects. This tool can be used to make a shape based on an image to make a more accurate model of it rather than making it from scratch, which is why we were plastering the image on the square and making it live.

Though this tool sounds simple to use it does a while to get used to using it, as my first attempt of it was messy

Here is what I'm talking about:



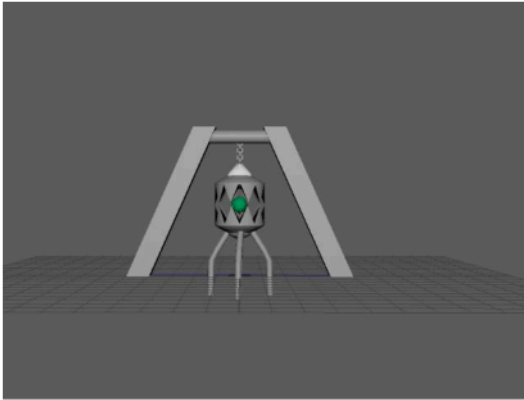
So, at a glance it looks fine, and it does function, but my problem is that all the polygons have weird and jagged edges. Apart from simply looking rough, the jagged shape can cause the shape to bug out when you try to extrude it.

Reference image [11].

28/10/2024

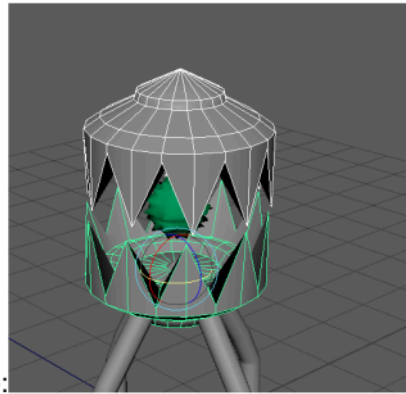
Personal project

Today I was just working on something for fun, this is it below:



It's going good so far.

The main thing I was struggling with is getting the top and bottom of the container



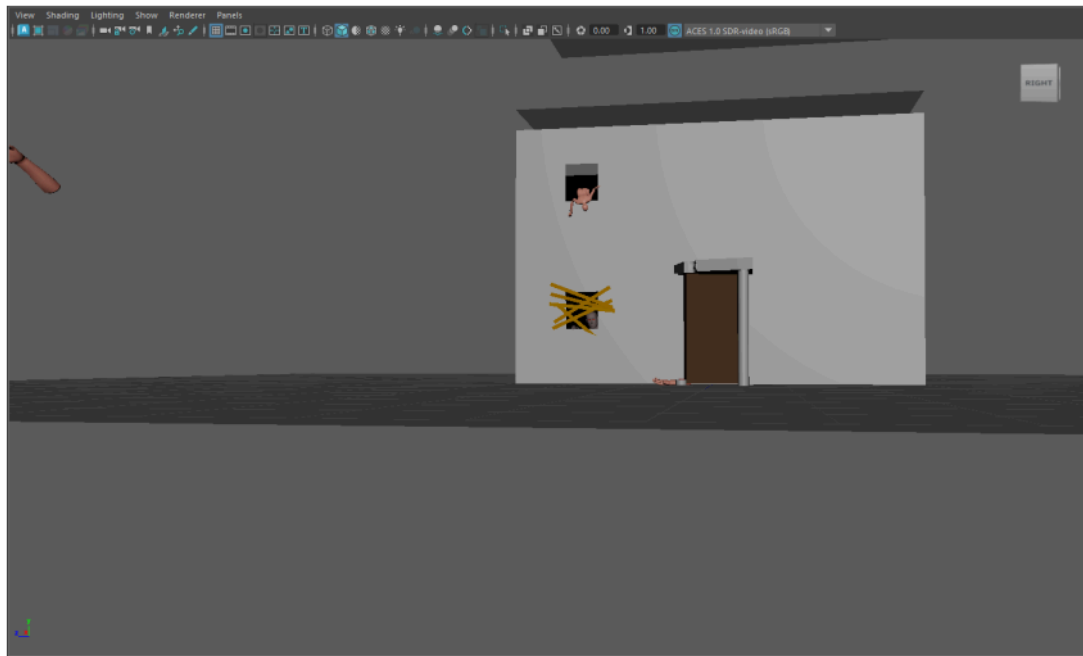
correctly, this was the best I could do:

As you can see, not too great. I should look into some tool or technique to easily synchronize objects better.

29/10/2024

Initial house practice

Today I decided I wanted to try and make a house as it is one of the models I would need to make for my assignment, this is how it ended up by the end of the day:

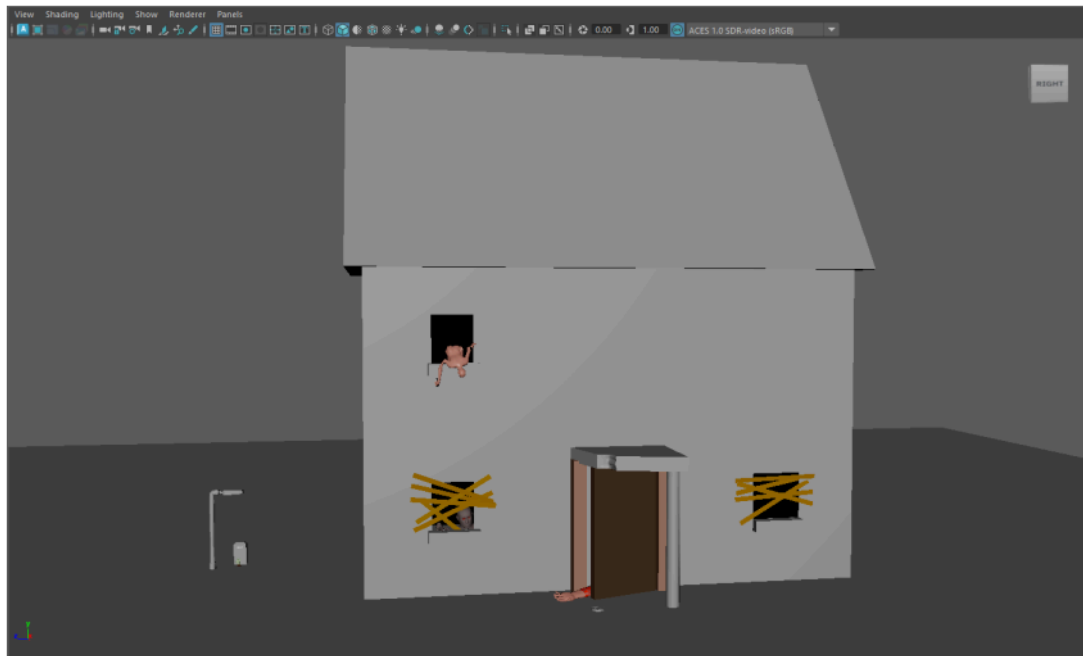


The thing I struggled with the most were the models because there are so many polygons so trying to Mold them into the positions, I want them to be in is hard, as if you try to move the selected part it stretches out the connecting part to the rest of the model. Besides that, it was fun.

31/10/24

Oooh spooky day

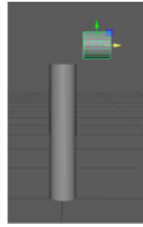
Today I made some additions to the house project, here is how it looks now:



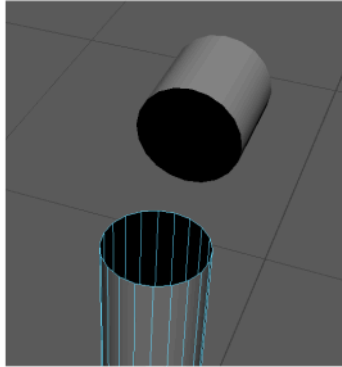
Today's biggest pain was making that lamppost, this one:

For the longest time I couldn't figure out how to bridge two objects together to make that nice curve effect, but now I do, and I will recreate one so the future me knows what to do when I need to do it again.

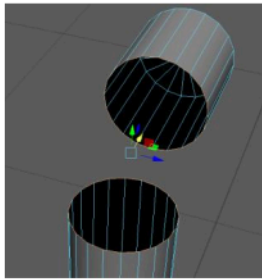
First make the two objects you want to use, like these:



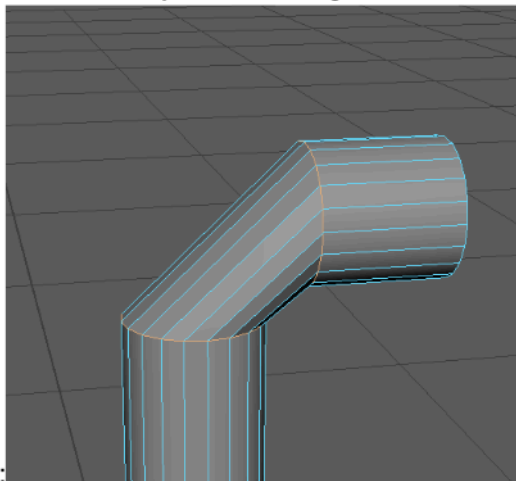
. Then remove the



two inner faces of the objects, like this:



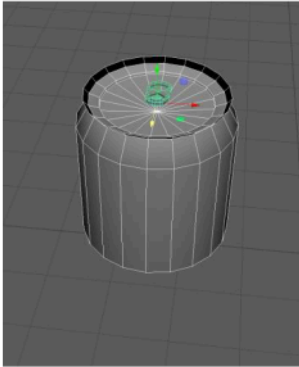
. Then connect them together to make them one object then select the rims of both shapes, like this:



should look like this:

10/11/2024

Today I practiced making a can, this is how its going so far:



forming the shape of the can was the easy part, but it turns out I missed a step when it comes to inserting an image onto an object. Once you have changed the colour option to file and have selected your file, while you have the object selected, press 5 and the image will appear. Thanks for the information, Adam [2].

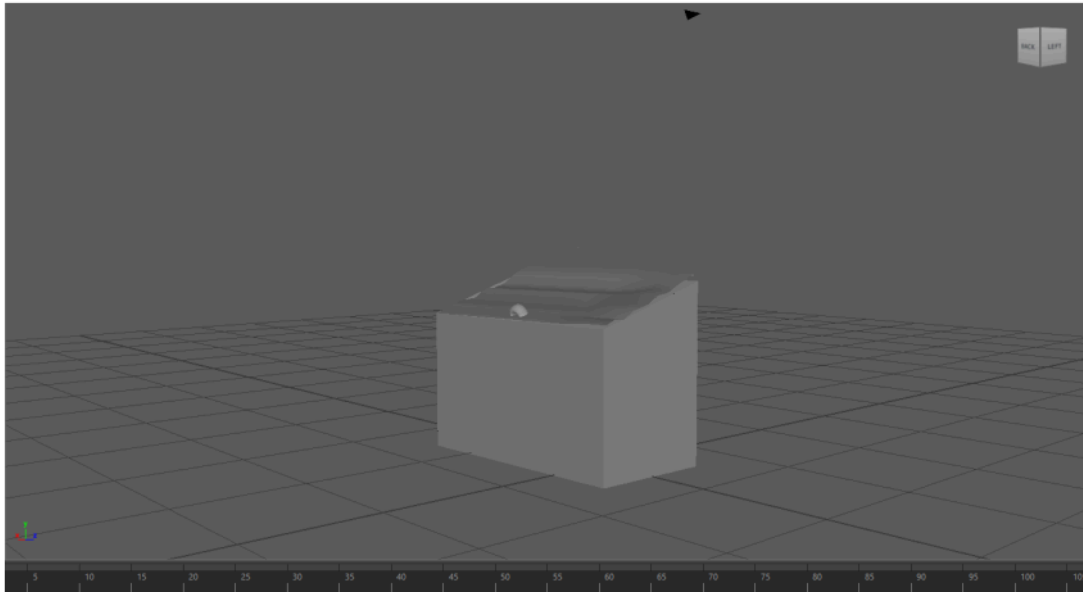
11/11/2024

Today I decided to try and make another dumpster to see if I've improved at modelling and to add it to my house set. To give a good working off point I decided to get an image to use as a reference which helped quite a lot, here is the imaged I used:

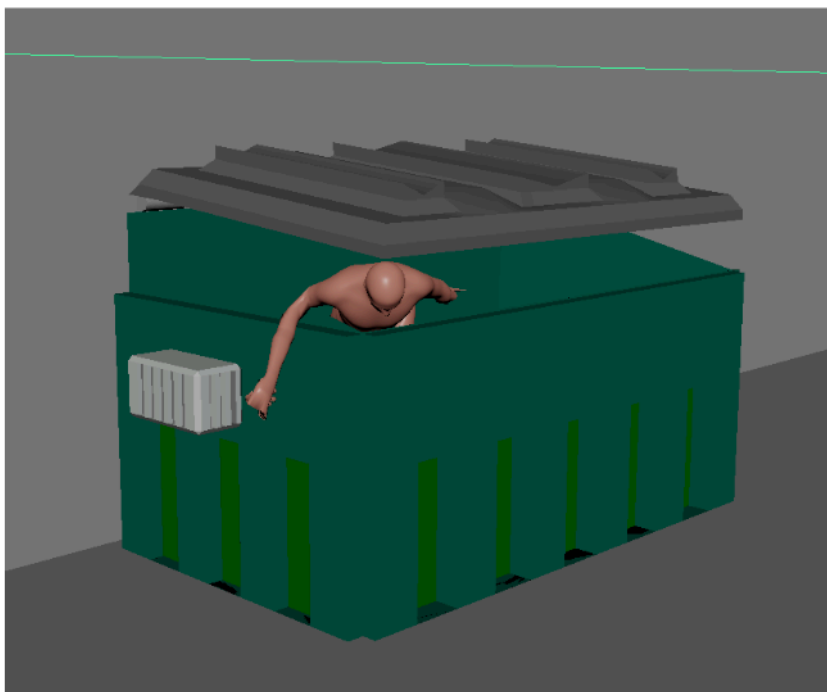


Anyway, I finished it today and it turned out so much better and faster than my old one,

Here is my old one:



And here is the new one:



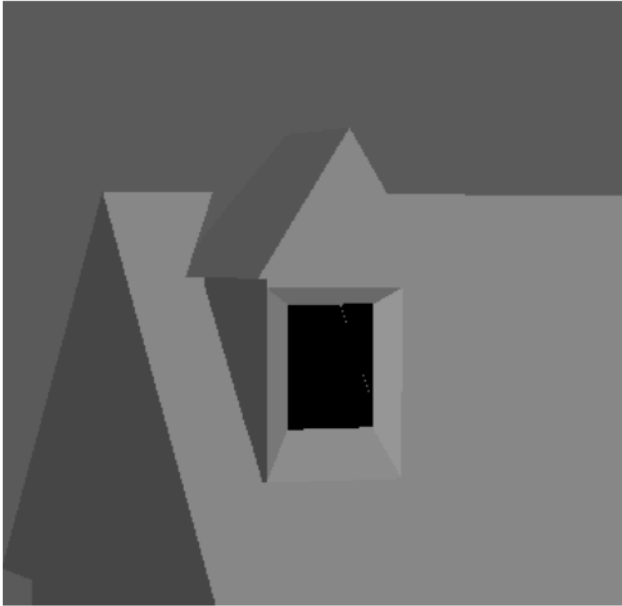
(ignore the body its
part of the aesthetic)

I think what made this version stand out more is the increase in depth to the object and giving it some indents, as well as coloring.

During the lecture today I was also taught how to change the settings in individual tools, for this example I was able to change the edge loop tool to insert multiple loops at once. All you must do to get this menu up is to double tap the icon of the tool you want on the tool bar on the side of the screen, this one for reference future me who might have forgot:

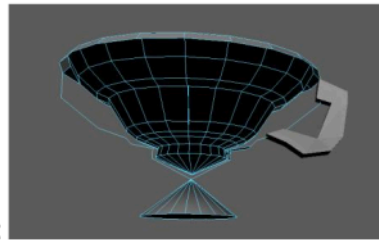


I also added an extruding window to the roof of the house:

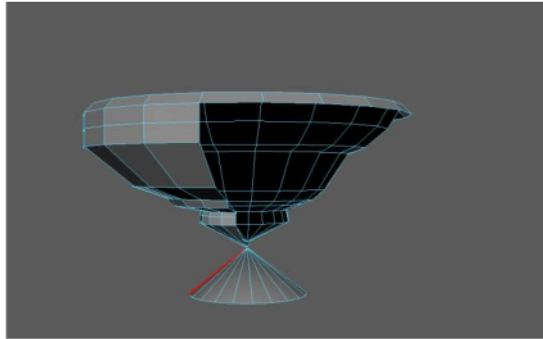


14/11/2024

Today I decided to tackle making the teacup and saucer, which turned out to be a bit harder than I was expecting it to be. The major problem near the end of the creation process, as because of the way I made it I ended up having the inside of the model

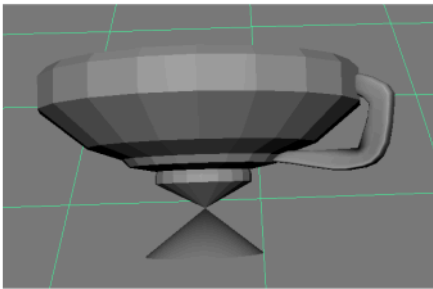


visible on the outside of the it, looked like this: (as you can see, not fantastic). It took a while, but I was able to come up with a solution, I extruded the outer edges of the cup so there was a new face, and I kept doing that until I was able to make an out shell to the model finally covering up the inside. Here are some images if it helps visualize what I'm talking about:



Mid repair

Final version



Here is the reference image for the teacup:



21/11/2024



Today I was able to create a model of a can, here it is:

Honestly the process was surprisingly uneventful, not sure if that's down to my ability to use maya improving or because it's a relatively easy model to make compared to the others.

Now the only model has left to complete is the house, which I have already made some decent progress on anyway.

28/11/2024

Finally finished modelling the house today, here is what it looks like:



I decided to give the house some colour to help define each part of the house and honestly looks a lot better than solid grey. Honestly this is the model I had the most fun making, there were so many small details you can add to a house to make it look good.

If I were to say which one I struggled with the most I would say the cup and saucer, having to create a shell for the cup was a long and tedious process to figure out.

Biobibliography

[1]: Maya 2025 [software], San Francisco: Autodesk

[2]: Adam Head, "UWTSD BA Computing / Maya: How to draw Quad Draw – Tutorial", YouTube, October 28th, 2024, <https://www.youtube.com/watch?v=fOKKA1jE1cM>

Video [here](#)

Image reference list

[1]: Here is the link to the image I used as a reference for the top of the can. ([Here](#))

Teacup image [here](#)

Reference image for the dumpster [here](#)

Introduction to 3D modelling work

GRADEMARK REPORT

FINAL GRADE

58/100

GENERAL COMMENTS

Thanks for the submission Josh. There is some good reflection on show here and is clearly a regularly updated production diary. I would say that in future, when working on documentation - watch that language used isn't too casual. This is still an academic document and does expect a degree of formality.

IEEE Referencing has been used in the document with a bibliography and image list. I would liked to have seen more external research, tutorials for example.

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