PD4063 Digital Modelling and Prototyping

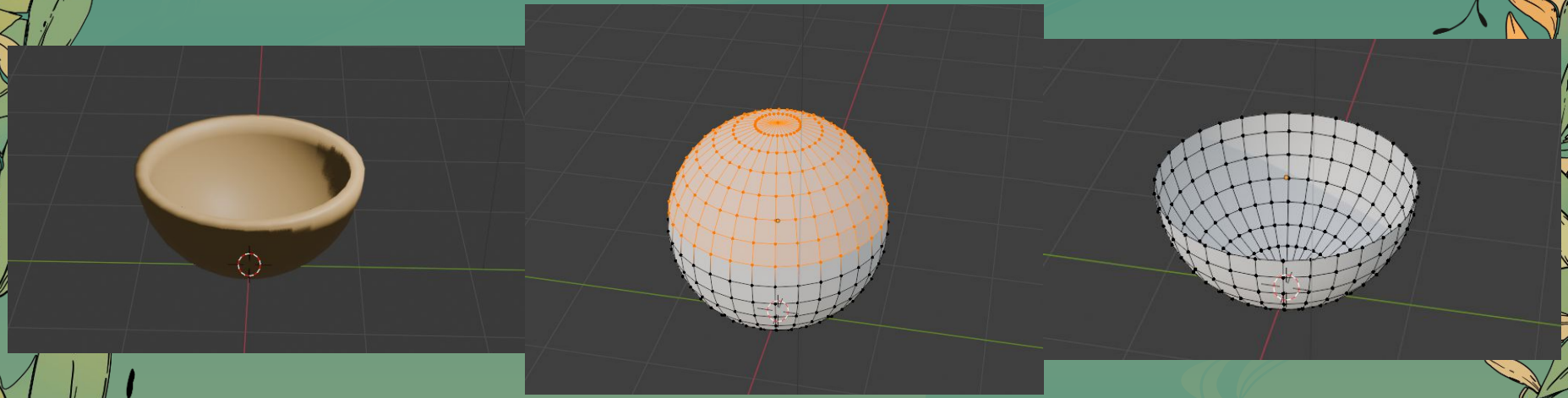
Julia Dłużniewska
24423084

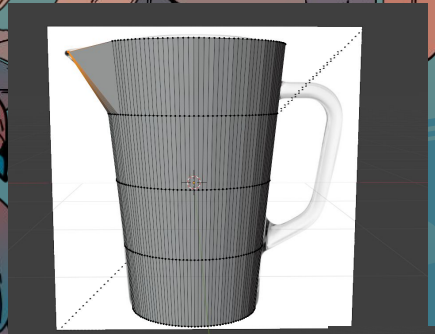
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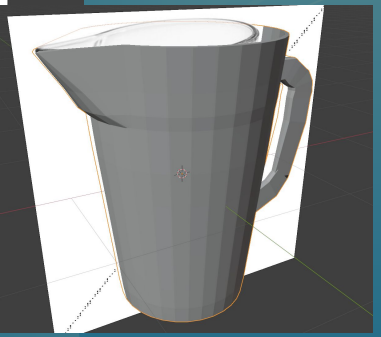
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In Class Tasks

During week 3 we designed a bowl. It was helpful to see how to solidify items and give them more dimensions.



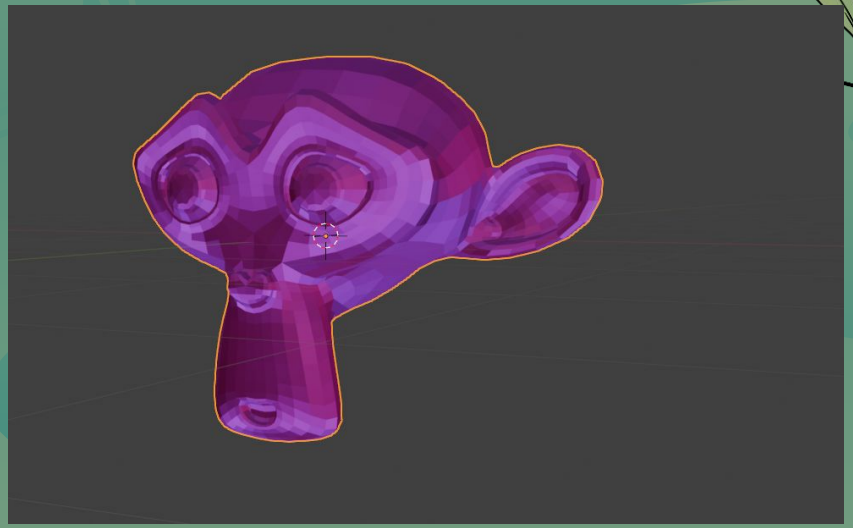




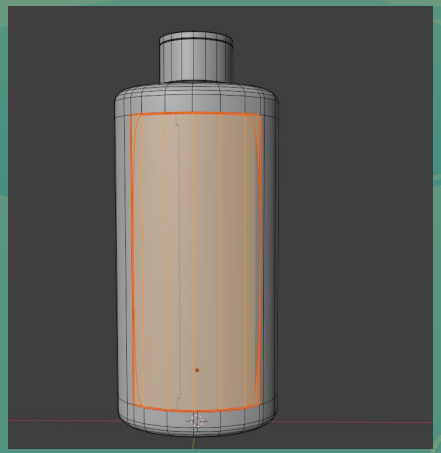


In week 4 we made a jug. This helped learning how to sculpt around an image and insert the image into the environment. It was helpful to learn how simple it is to extrude and rotate around an organic shape of the handle

During class we have also learnt how to apply materials and explored different possibilities using the software.



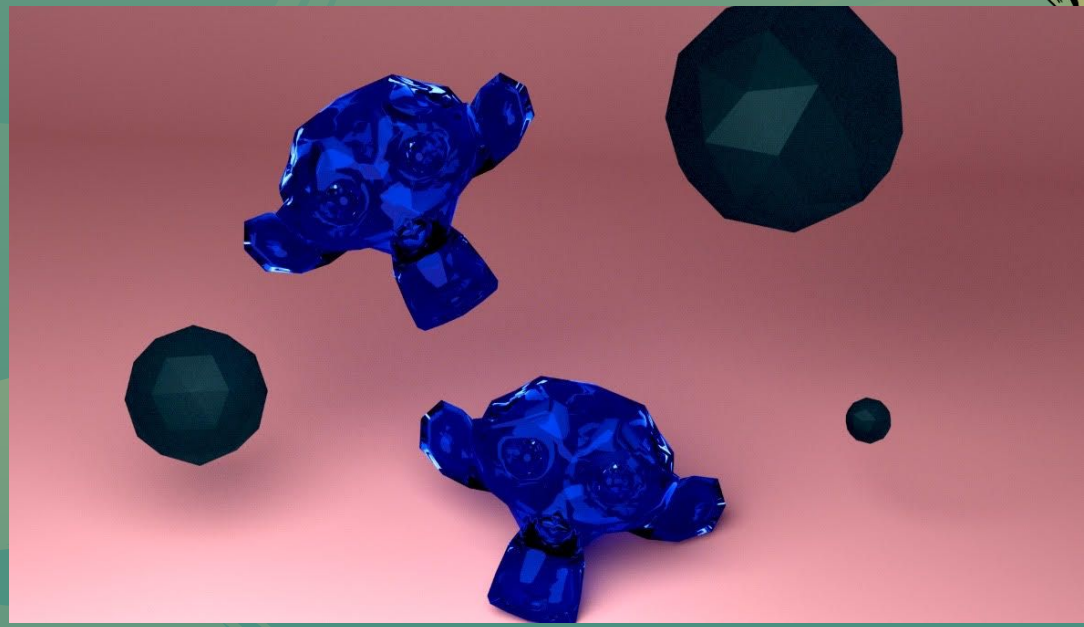
In the following class we explored UV editing. I learnt how to fit and organise the label onto the bottle and it was quote interesting to learn.





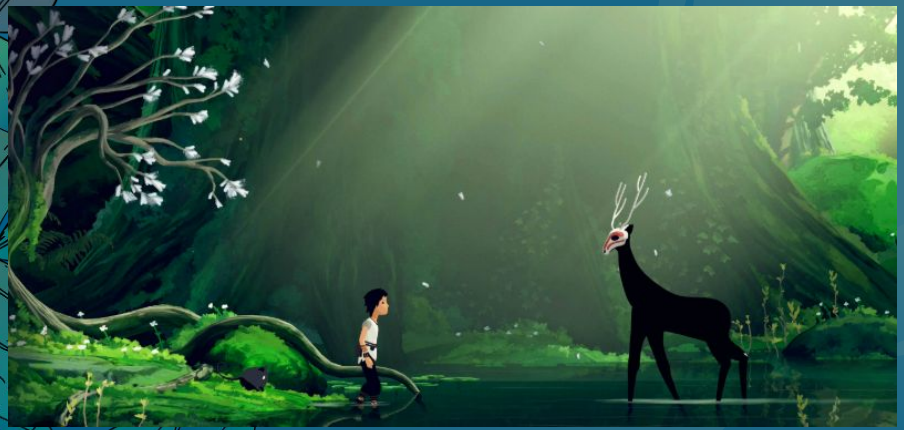


This task consisted of learning how to render an object. I learnt how to use the different engines such as Cycles and EEVEE. It was interesting to learn about the different lighting and camera angles and also how influential the background could be



Aesthetic Study





A lot of Studio Ghibli's work is very colourful and nature themed. They consist of hand drawn or painted background that have a soft and delicate form.

The main comforting factor of their designs are the soft and organic forms that correspond to the general theme of nature and the relationships between the human characters and the fantastic creatures and characters.

As seen in the images, the curves and structures look approachable and calming. The scenes represent a flowing and welcoming form natural to the style of the company.



Even when a scene shows a more industrial or rougher setting, thanks to the soft colours and the natural structure of the trees or the clothes flowing in the wind, the viewer still feels comfortable.

The company is well known for hand drawn and pastel/watercolour themes. Following these natural forms the company establishes that even scenes or designs that would be seen as intimidating have a now magical and friendly feel.

I feel like the muted and earthy tones also add a lot to the recognisability of the company.

Aesthetic Analysis of Studio Ghibli

- **Form Language** : Soft, rounded, approachable curves and friendly and inviting.
- **Color + Finish** : Muted pastels, earthy tones, glass inspired finishes.
- **Textures** : Matte, woodgrain
- **Mood** : Whimsical, nostalgic, calming and makes tech feel human and magical.

Design Criteria for Peripheral :

·Rounded organic forms.

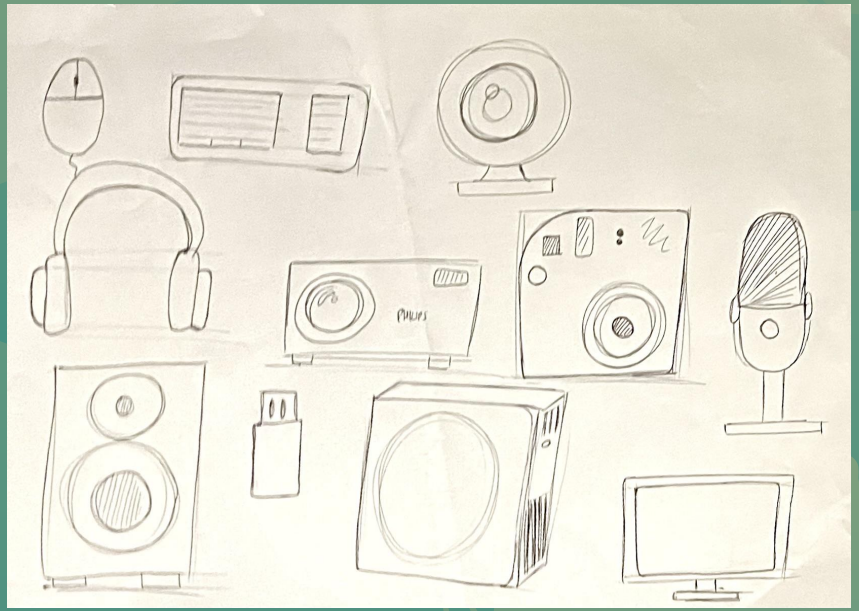
•Gentle color palette (pastel blues, greens, autumnal browns).

•Incorporate nature inspired motifs (leaves,flowing lines).

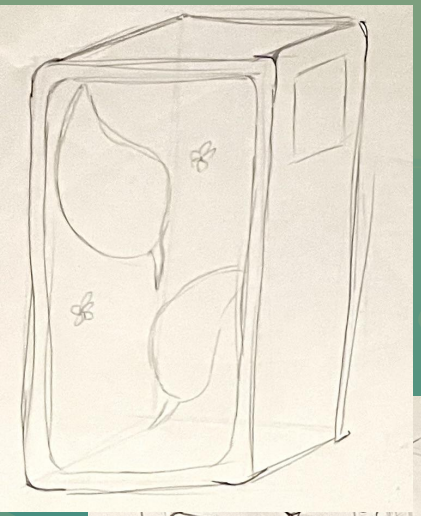
•Sustainable or eco textured finishes (fabric, bamboo, recycled plastic, glass).

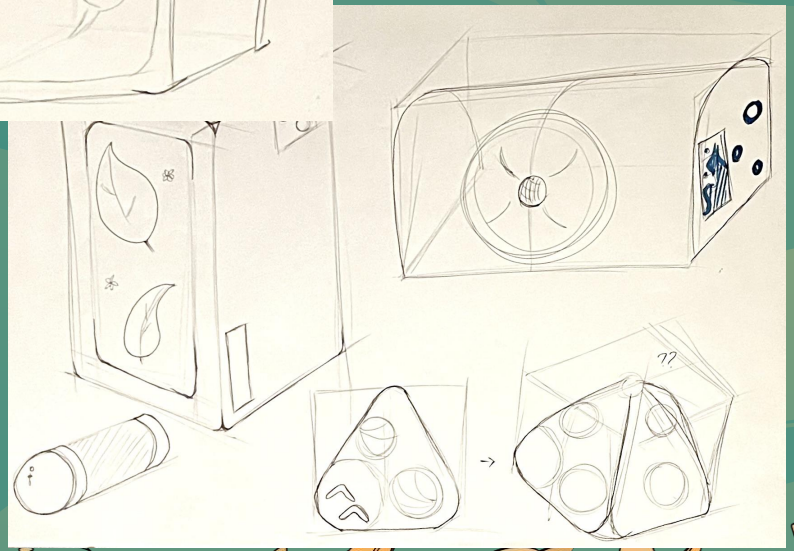
•Emphasize comfort, familiarity, and emotional connection.

Ideation and Development



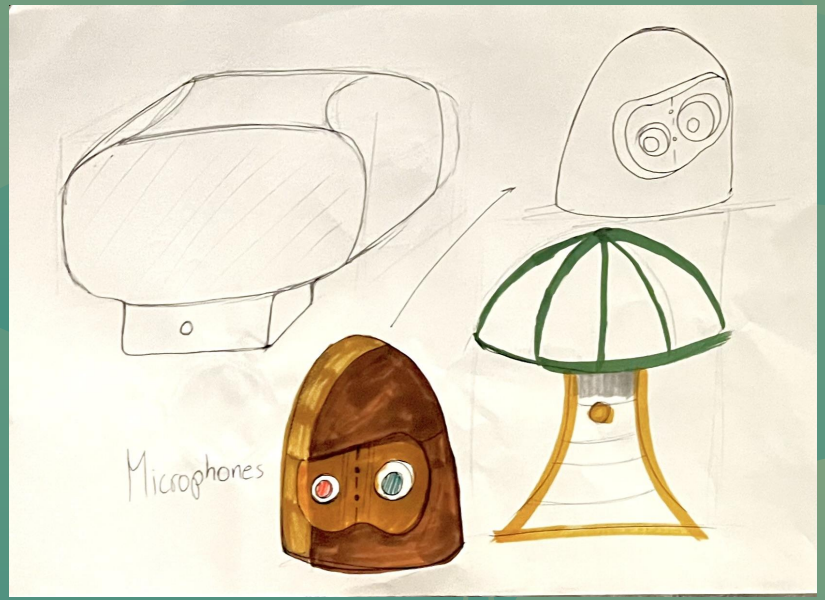
First I mapped out a couple peripheral examples.
I mainly wanted to see which item has the most interesting yet simplest form which i could manipulate using the design criteria I developed.





Here I explored ideas of a speaker. There were many opportunities for organic forms and soft colours. The bottom design was developed in the similarly shaped above and I considered it for the final design.

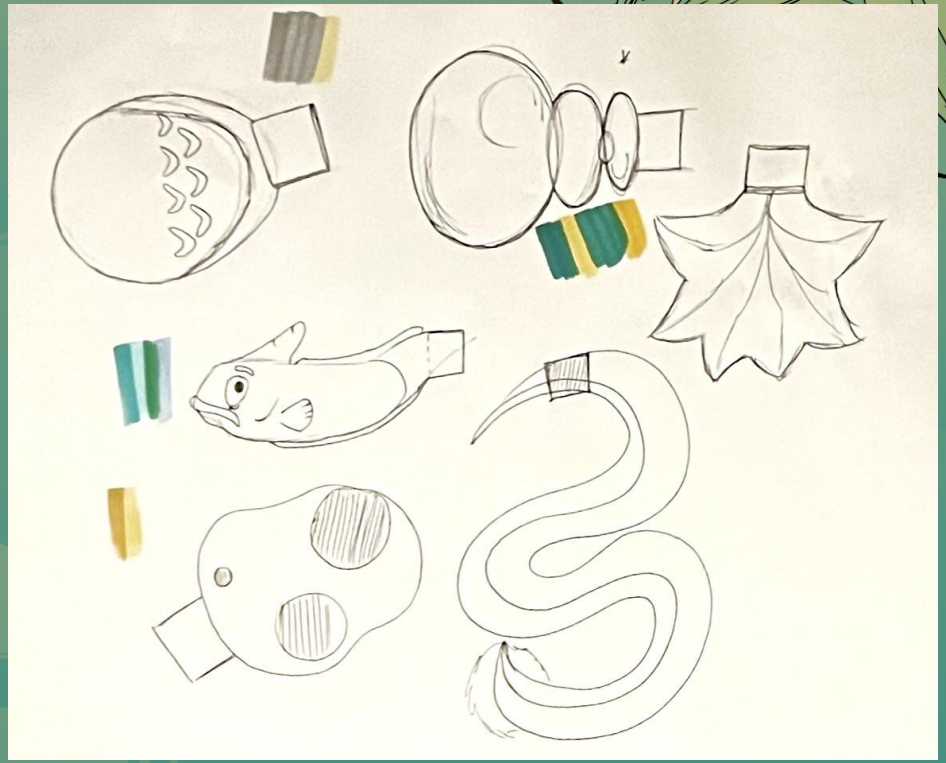
I did notice the shape being too blunt but the leaf motif would fit in well.

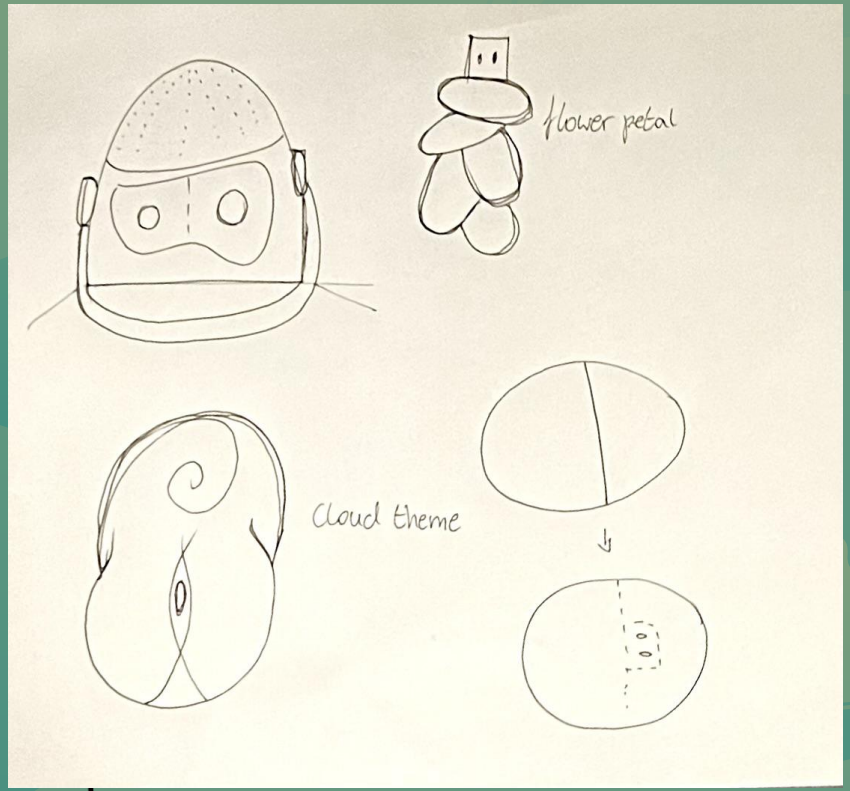


Here are a couple ideas for a microphone. I really liked the gumdrop shape of the bottom one. I had a rusty material yet a friendly shape and warm colours.

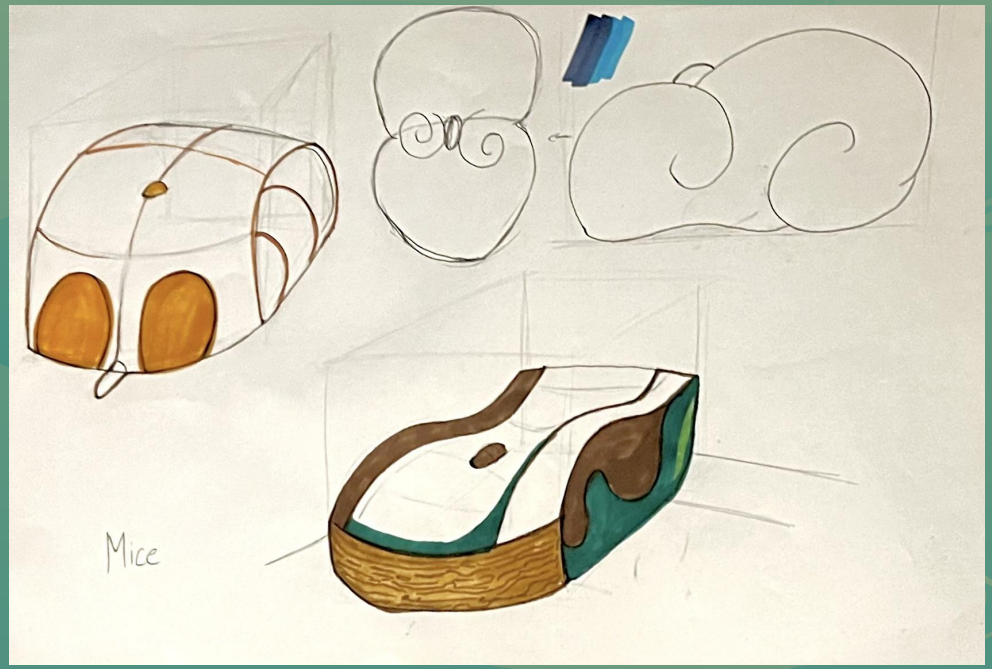
The USBs had very interesting shapes. Due to the shape of the body of the USB not having a practical function it was easy to come up with a lot of ideas.

I specifically liked the middle top design. It had a glass material , round and approachable shapes and great glossy colours popping out.





I had some final ideas come along while finishing up the sketches. There were some developments and shapes that came along the way which ended up helping me decide which item I wanted to design the most.



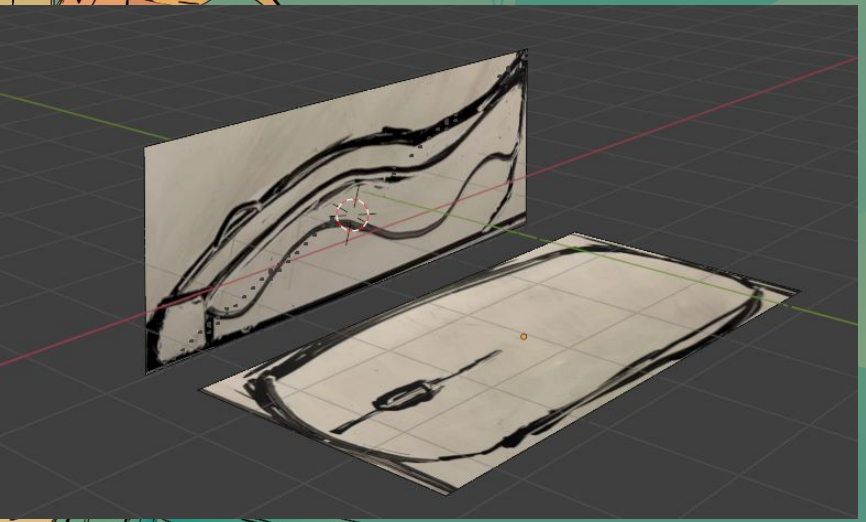
I really enjoyed the variety of possibilities with the mice. I liked the flowy shape of the mouse on top right. The cloud shape would have looked interesting with watercolour or glassy material.

The bottom idea fit my criteria well due to the shape, wooden elements and a potential for soft watercolour patterns.

This is the final peripheral i chose. It fit the criteria very well and had a lot of interesting shapes and features.

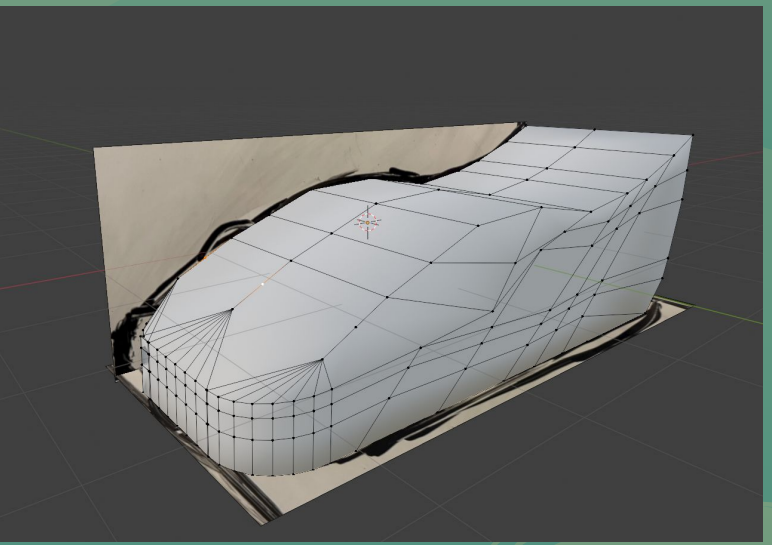


Blender Workflow



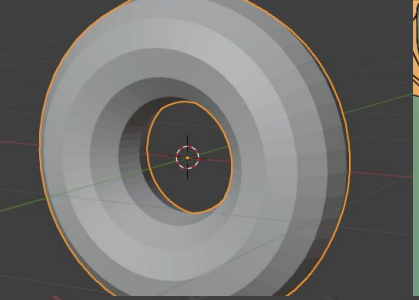
I started by inserting two views of the mouse that would help me navigate general shape and curves. I have then added a plane and started wrapping it around the side plane in order to get the correct shape.

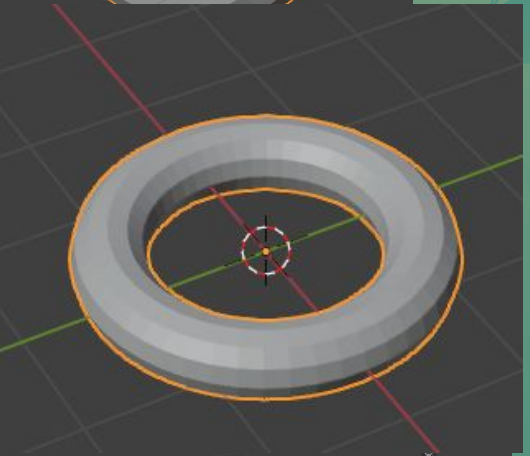
Scaling the images to match the plane was a challenge at first as I wasn't sure how much space to leave around the plane.

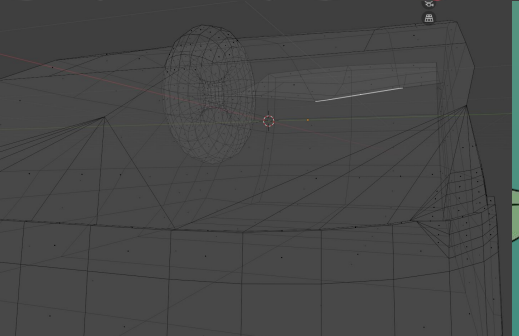


After spending a while dragging and scaling the vertices, I have extruded the plane and received this effect.

I continued to grab the vertices on the plane using the top view to get the front panel which then i beveled and extruded so the front panel would appear more prominent.

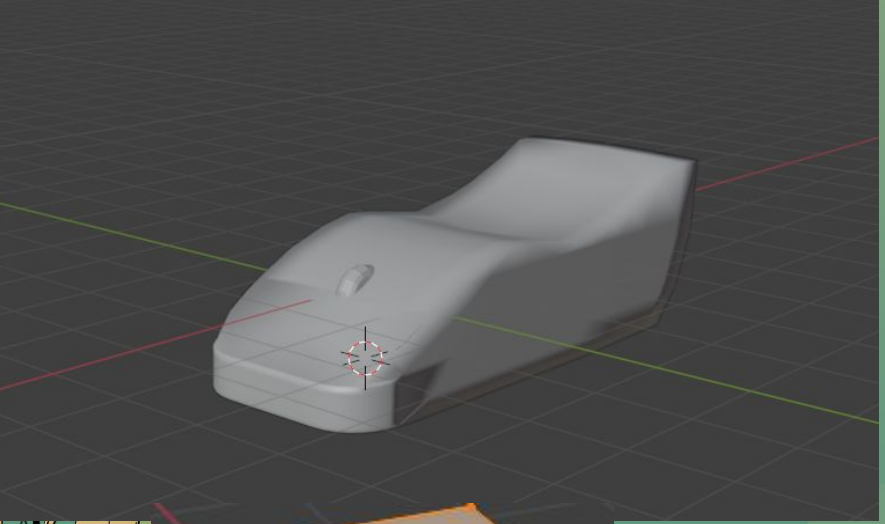




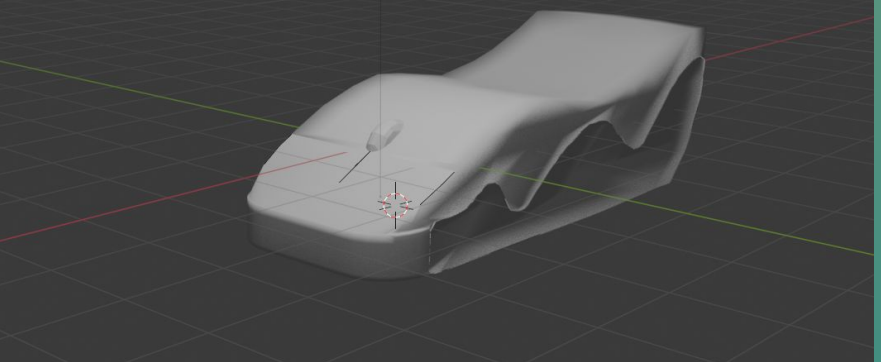


The next step involved adding the mouse wheel. I decided to mesh the torus shape and rotate it 90 degrees around the y axis. I have then resized it and adjusted it to the desired shape.

Next, I moved it and centered it in the middle of the mouse, using the x-ray view to help me map out the exact positioning. Following that step i merged and joint the surrounding surfaces and deleted any internal geometry that would cause issues later on. A helpful tool i learnt to use in this process was the knife tool which helped me cut the edges at the right side.

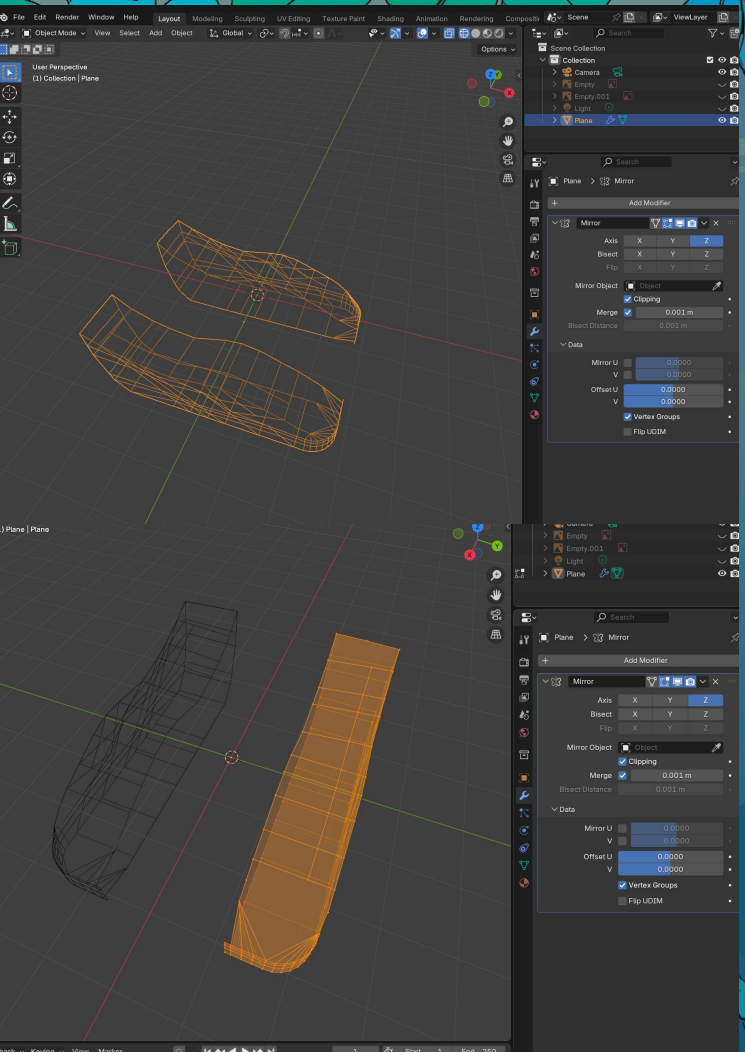






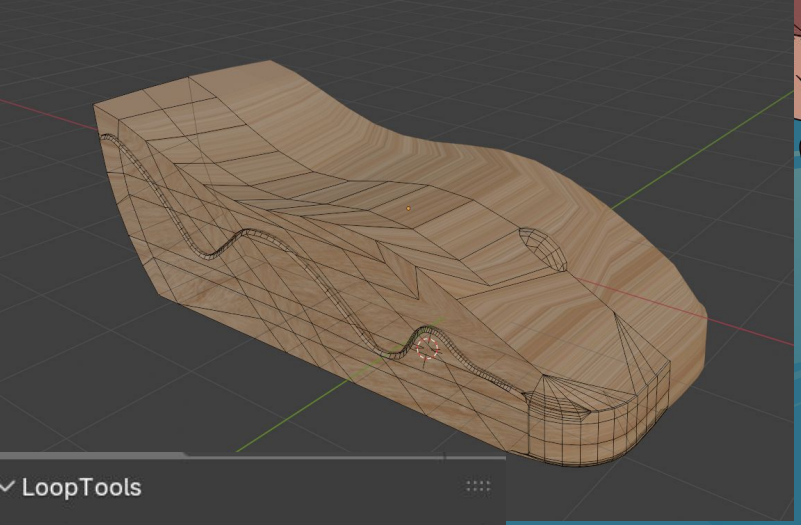
The first image shows how the mouse looked up to this point. I noticed it looked too plain to fit the studio ghibli aesthetic and decided to add a curve. At first I struggled finding the correct method as I wanted the curve to be very organic and even slightly unplanned. Hence I used the knife tool to cut out the side of the mouse.

With a lot of patience I got the desired shape and extruded the cut so it appears more prominent.



The other side of the mouse ended up causing quite the challenge as simply duplicating the curve wasn't enough to recreate the exact flow. I decided to delete the half without the curve and mirror the mouse so both sides are symmetrical and even.

This step ended up being very helpful and was another learning curve that enhanced the final result.



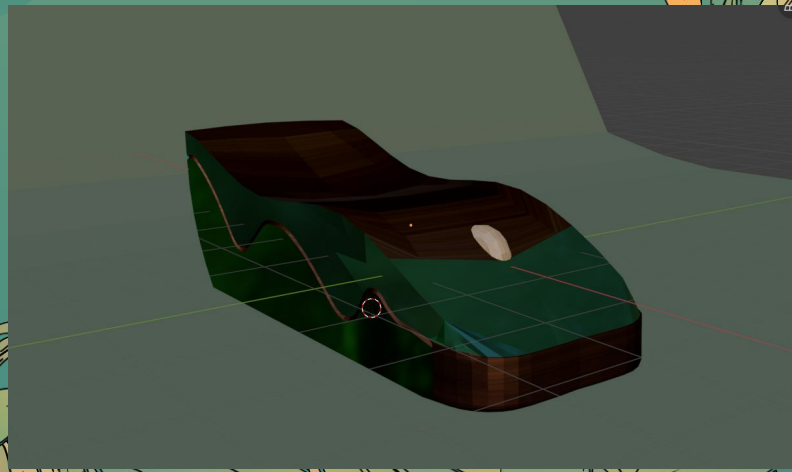
This step involved editing the curve so it showed up in the 3D printed model. I decided that the extrusion needs to appear inwards and the sides need to be beveled so it appears intentional.

The loop tools ended up being extremely helpful and after selecting each vertices and edge carefully I ended up with the above model.

The final step involved picking the correct materials for the render. I decided I really wanted to include a wooden material and glass elements to fit the mystic forest mood of so many studio ghibli films. I admired the glass finish as it let through just the right amount of light to mimic the effect of light scattering through trees.

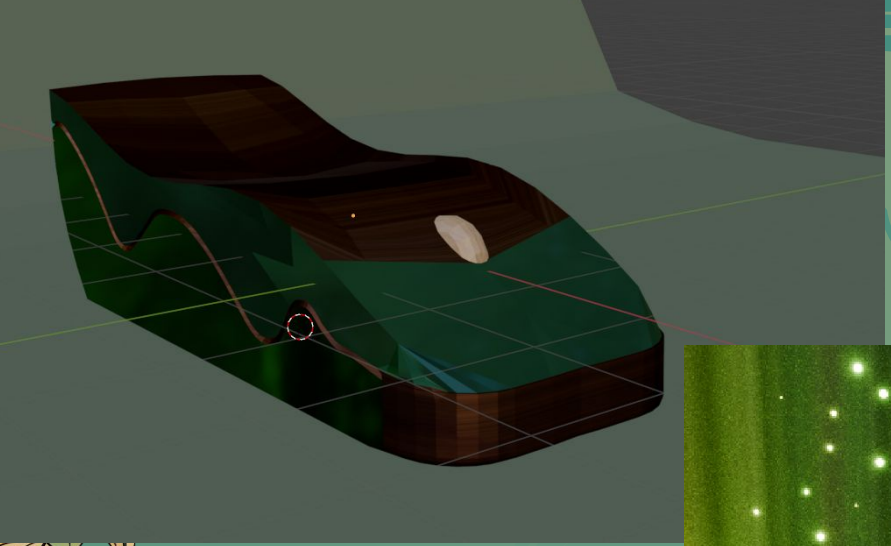
Another consideration was amber resin material. It seemed like a good idea at first however it seemed to overpower the whole design

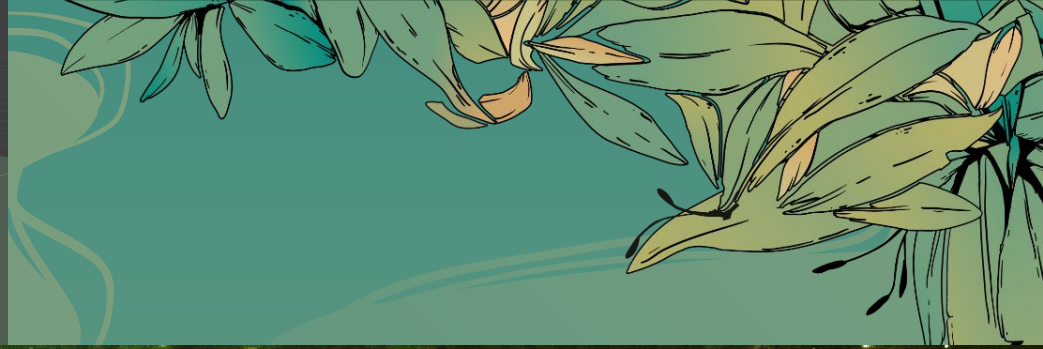




Final Model and Rendering

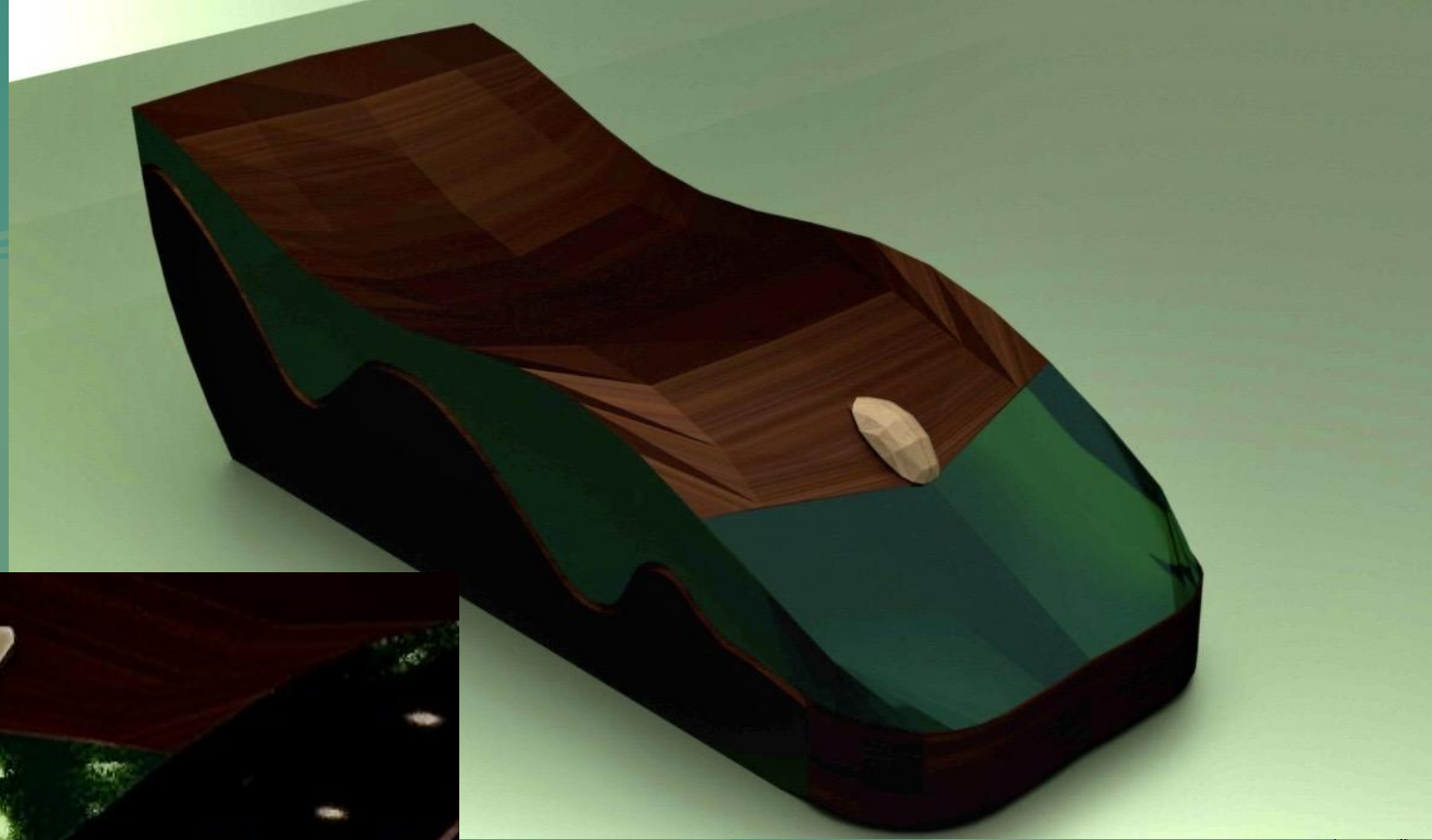


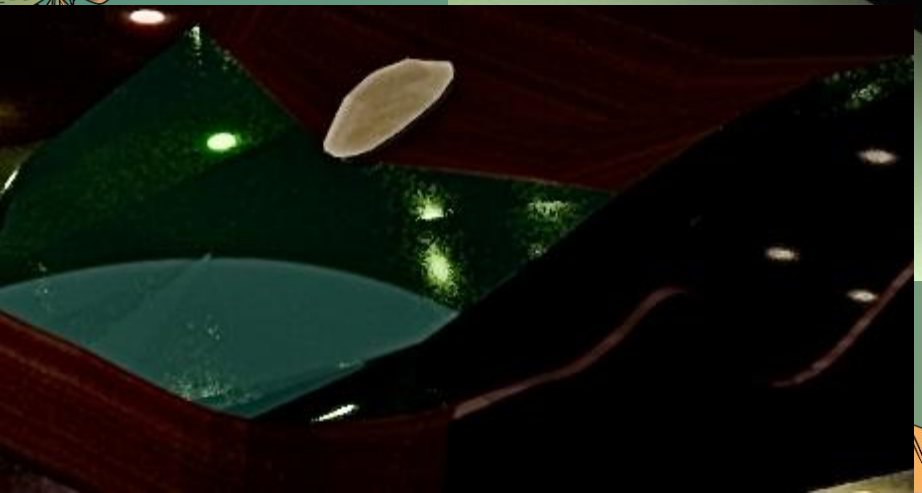












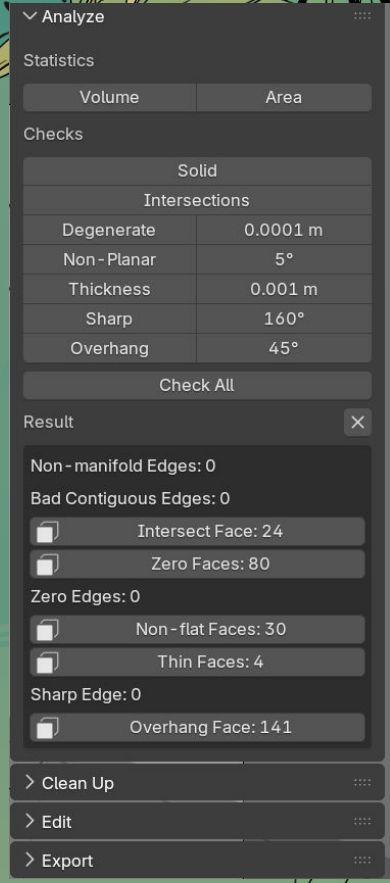
3D print evaluation

After checking the model and analysing the final model, I checked for no manifold edges and made sure everything was ready to be printed. I imported the model in slicer and rescaled it so it comes out correctly.

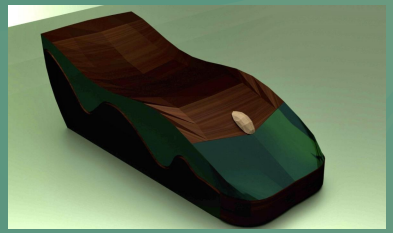
After the printing was complete I realised it came out quite bumpy as the shading smooth modifier skewed the appearance of the model however , the 3D model still gave me the needed experience of viewing my model in real life and seeing out with could potentially interact with the intended surrounding.

In the future I would be more careful when preparing the model and I would possibly round the front panel a little bit more.

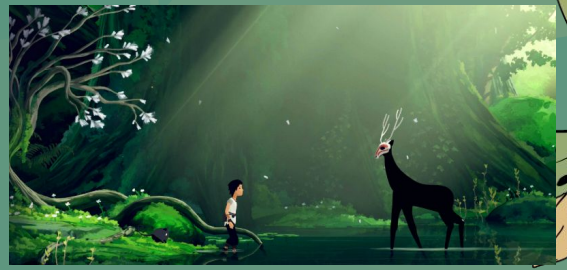




Design Criteria Evaluation



•Rounded organic forms.
•Gentle color palette (pastel blues, greens, autumnal browns).
•Incorporate nature inspired motifs (leaves,flowing lines).
•Sustainable or eco textured finishes (fabric, bamboo, recycled plastic, glass).
•Emphasize comfort, familiarity, and emotional connection.



After critically analysing the model I made and the design criteria I developed, I believed my model has a slightly harsher colour palette than intended. However my model has a natural and comfortable flow and is made out of sustainable material. I tried mimicking the shape of a leaf with the general shape and the overall form is organic and comfortable.

Reflection

I really enjoyed this project and I am happy with how it developed from the first sketches to the final model. Exploring my design criteria was fun and I think I followed them quite well. The rounded shapes and nature inspired ideas showed up clearly in my work and helped me stay consistent as I made decisions. Moving through the Blender process was challenging at times but I felt like I handled each step with patience and a growing sense of confidence.

I also learned a lot about the technical side of modelling. Working with reference images shaping the form and dealing with curves taught me how important small adjustments can be. Although I am pleased with the overall result I do believe my 3D model could have been stronger. Seeing the printed version made me notice a few places where the geometry needed to be cleaner and where the smoothing affected the final shape more than I expected. It showed me that careful preparation is key before moving into printing.

Overall I feel proud of the work I produced. I enjoyed the creative side the technical learning and the chance to turn an idea into something real. This project gave me a better understanding of digital modelling and it makes me more confident about improving my models in future projects.

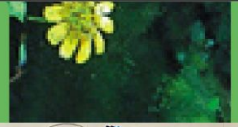
PROJECT 1:STUDIO GHIBLI COMPUTER MOUSE

Project Brief: Design and produce a computer peripheral based on an already established design brand

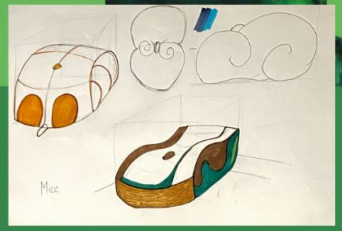
Chosen Brand: Studio Ghibli

Aesthetic Design Criteria:

- **Form Language:** Soft, rounded, approachable curves and friendly and inviting.
- **Colour & Finish:** Muted pastels, earthy tones, glass-inspired finishes,
- **Textures:** Woodgrain, natural and organic
- **Mood:** Whimsical, nostalgic, calming and makes tech feel human and magical.
- Natural motifs such as leaves, flowy lines, etc

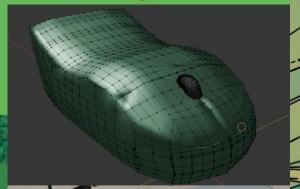


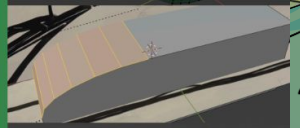
Sketches

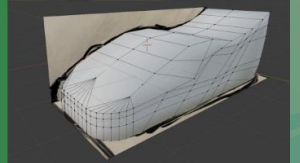


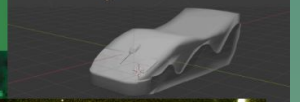


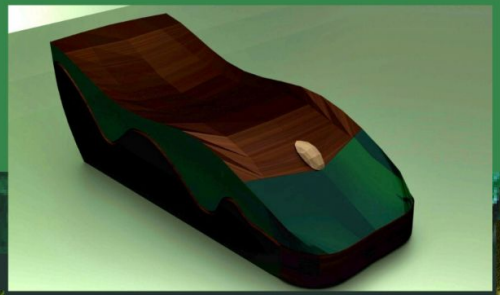
Modelling Process











Rendering





Brand Examples

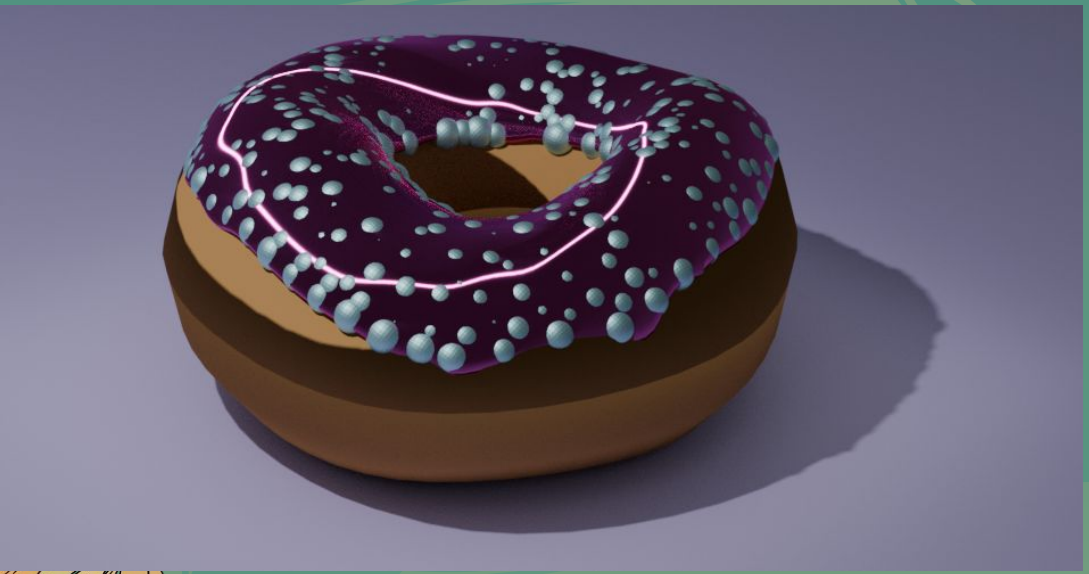






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PD4063 - Digital Modelling and Design

Other projects



The class was recommended to follow the donut tutorial as it showed many new methods of editing the form of our future projects. It was very helpful to learn all the new techniques shown in the tutorial.

