



School of Information Technologies
Faculty of Engineering & IT

ASSIGNMENT/PROJECT COVERSHEET - INDIVIDUAL ASSESSMENT

Unit of Study: INFO5415
Assignment name: Assignment 2 Multimedia Production
Implementation and Delivery
Tutorial time: Thursday 8-9PM
Tutor name: Yichao Hao

DECLARATION

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Signed

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Date 27/10/2021

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B. Project Introduction

CASE U is a cell phone case customisation service brand. This project aims to provide a multimedia production implementation and delivery to the CASE U brand for promotion and then attracting more and more users. The whole project includes the following multimedia aspects: Brand logo, advertisement poster, image banner, 3D virtual main character, 3D CASE U factory scenes, 3D animations, and the advertisement videos. To gather all the multimedia production, a website is also built, so that all the multimedia production can be viewed from the official website.

a. Design Style

For the design idea of the project, I mainly used the 3D cartoon style for all the 3D modelling and animation production and 3D typography design style in the graphic production. In recent years, the flat design is not as popular as when it was first introduced. The designers tend to add some shadows to their designs in order to present the layers. Pure flat design is less common nowadays. Thus, the project chooses to combine them together using my own understanding to create a unique design style which is using lines shapes to present 3D objects without so much light and shadow and use 3D cartoon style modelling to present 3D objects and scenes. The design style will be aligned among logo, poster, banner and website UI design. Figure 1 presents the sample images of 3D cartoon design and 3D typography design.



Figure 1 Sample image of 3D cartoon design and 3D typography design

b. Storyboard

The storyboard in figure 2 presents a scenario that a target audience of the project is attracted by our multimedia production and becomes a customer of CASE U service. At the start, his mobile phone case was broken, and he wants to buy a new one. However, the mobile phone cases in the current market are too boring and tends to be similar for him. When he has a trouble of choosing an appropriate phone case, a poster of CASE U appears and then he was attracted by the poster. He directly visited our official website and watched our introduction video and banner image. Finally, he designed a customized phone case in CASE U website and happily received it after few days. The whole storyboard illustrates the full process of how our multimedia production helps promoting and attracting the potential users.

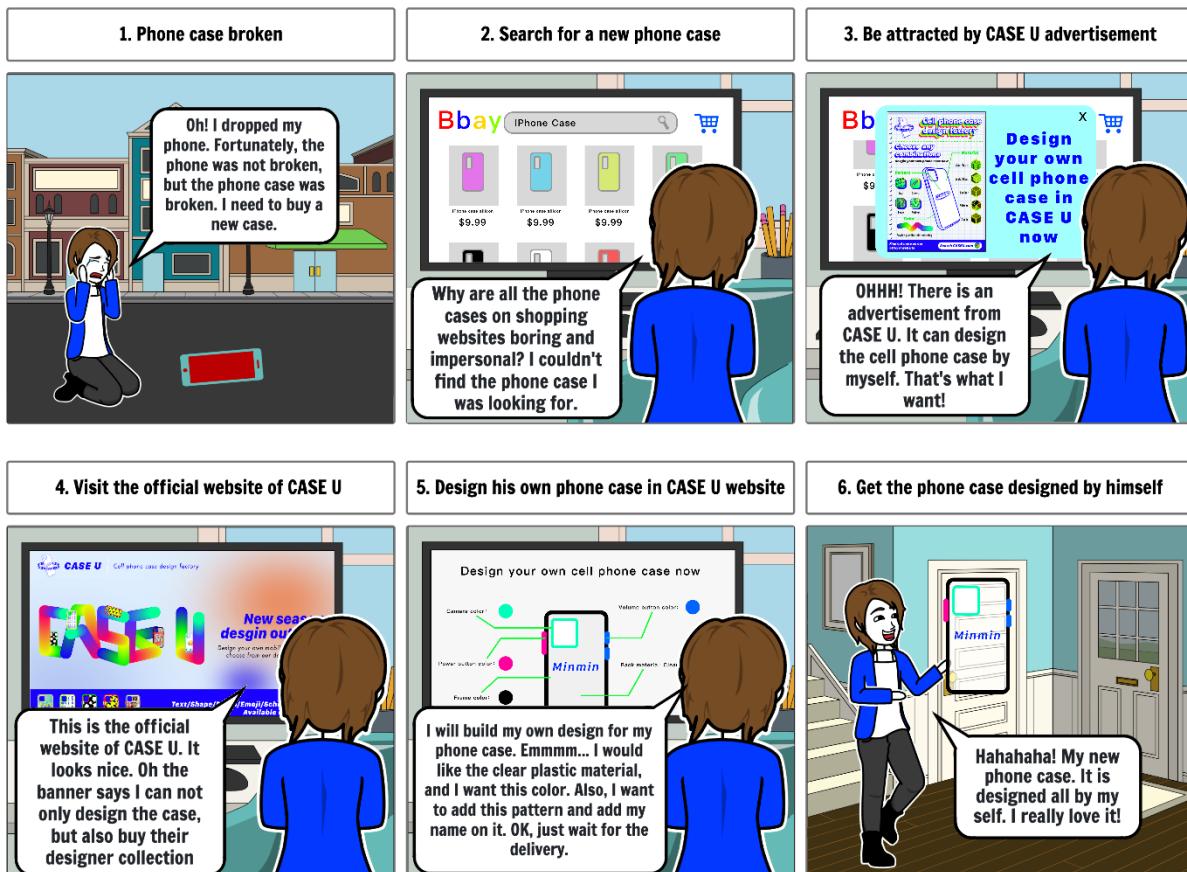


Figure 2 Storyboard

C. Image Processing

a. Personalized Logo

I designed the logo followed the 3D cartoon design style of the project. It includes three variations: normal logo, abbreviated logo, and a 3D logo. The different logos will be used in their appropriate multimedia production aspect with the same objective which is to make the audience notice our brand and have a brand image in in their mind.

The normal and abbreviated logo are created using Adobe Illustration and I drew it manually. The normal one can be used in some big posters, and websites. The abbreviated logo can be used on some small objects such as the side frame of the mobile case. Both two logos used the same main theme color "#1A00FF", which is also the main theme color for all design in the project. All of the text in the logo are Futura font style which is also the main font style of the project. I first used the brand name and a circle with gradient stroke to create the abbreviated logo. Then, I used a reference image of a real phone case at the specific angle, and the pen tool to create curves as the wireframe of the mobile phone case. Next, I added the abbreviated logo as the back pattern of the

phone case. For the circle with brand name, I used the 3D protrusion and bevel function in Adobe Illustration and add texture to it (Figure 3). Therefore, the target audience can see the layer hierarchy in 3D, but it's not so skeuomorphic which will make the logo retro and not modern enough. Every target audience who look at the normal logo can intuitively and directly get the information that the band "CASE U" provides the service of phone case. Apart from the 2D image, I also designed a 3D version of the logo, and it will be applied to the 3D modelling and animation production. The process of building it will be explained in the 3D modelling part.



Figure 3 3D protrusion and bevel and its texture



Figure 4 Normal Logo



Figure 5 Abbreviated Logo



Figure 6 3D logo

b. Banner Image

I designed three banner images for the project which will be presented in the banner gallery at the homepage of the CASE U website. All the three banners are created by Adobe Illustrator.

I developed extra capabilities in the image processing aspect when creating those the 3D typography style images. The first useful tools I learnt is the blend tool. It allows you to create an irregular and smooth shape. I can get any shape I want by just specify the shape of the two ends. The color will also be blend through the blend path. It is also useful to create a shape with 3D illustration, such as the figure 8. I used this tool in the first banner image. The clipping masks is also a useful tool, when creating the 3D typography design. Figure 9 presents an example of masks created for the mobile phone case and the letter "E". The mask is an irregular shape I created using the pen tool and it represents the area I want to present of the object under the clipping mask. Thus, I can remove the part of the case are in front of the letter, and now the phone case seems to be between the two strokes with depth. The sense of depth is essential for creating an 3D illustration.



Figure 7 Blend tool

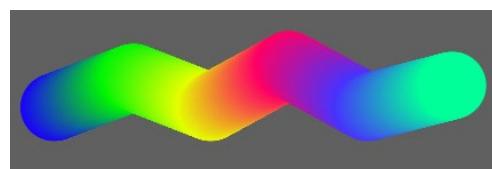


Figure 8 Blend result



Figure 9 Clipping Masks



Figure 10 Banner 1

For the last two banner image, I used the image render result of 3D model using Blender and made the secondary design in the Adobe Illustration, so that the design style can be closer to the 3D cartoon style. The procedure of creating those 3D modelling can be found in the following part. I also used the clipping masks to illustrate the 3D layers when I am processing the rendered images. I discovered the artist effect list and chose the plastic packaging effect for the main title of the third banner image since the it can be aligned with the 3D cartoon image style. I also adjusted the RGB color of the background image to be brighter.

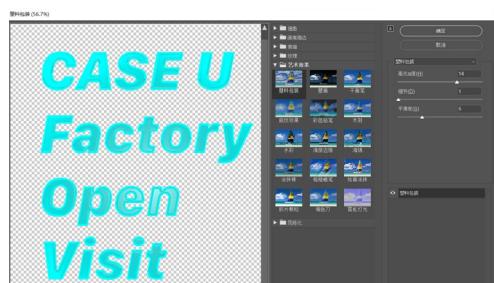


Figure 11 Artist effect

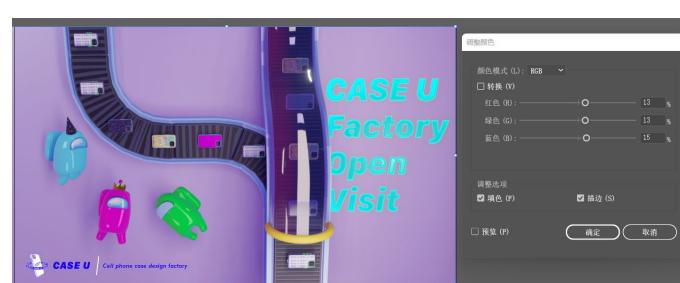


Figure 12 Adjust Color

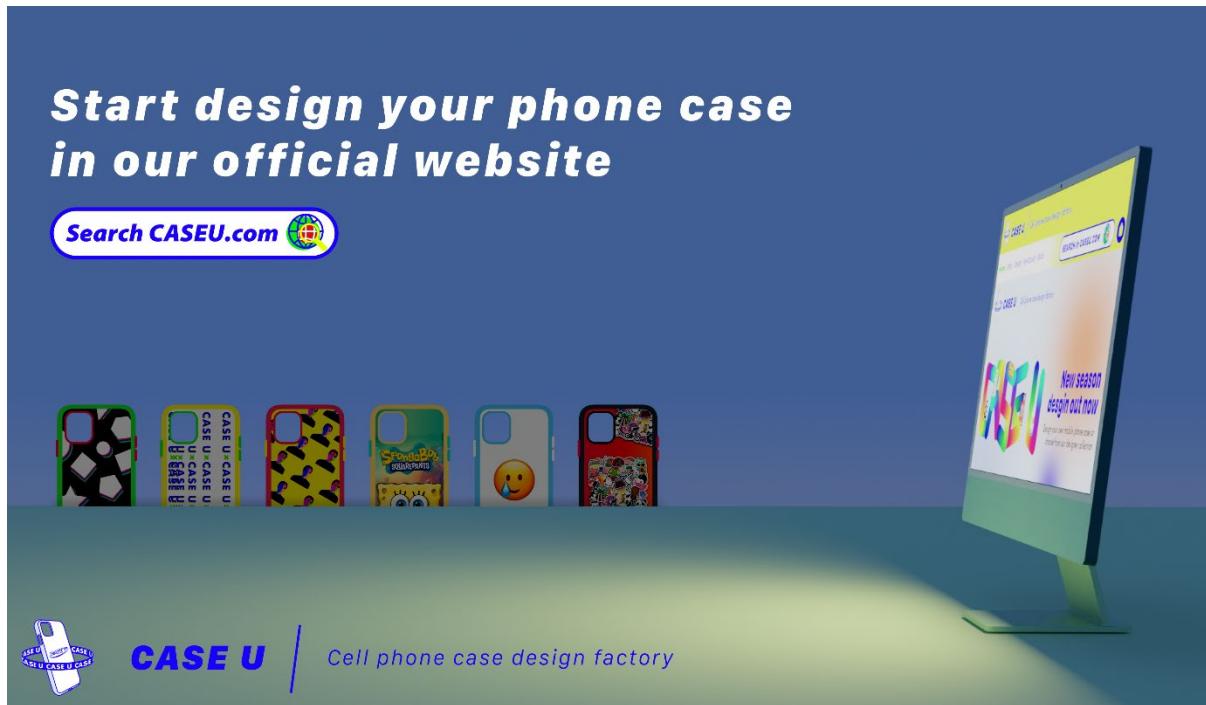


Figure 13 Banner 2

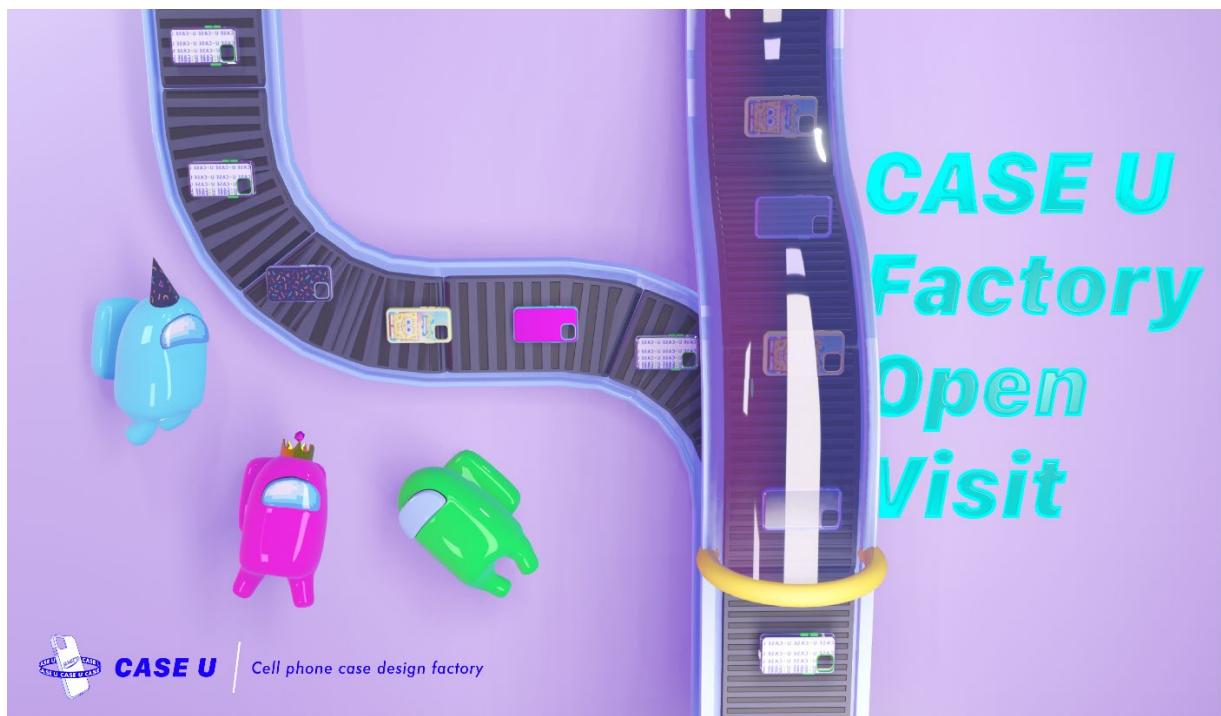


Figure 14 Banner 3

c. Poster

The poster is also designed based on the 3D cartoon design style. Rather than processing some photographs, creating a vector image would be more suitable for the 3D cartoon style. The poster

best reveals the design style of the whole project. I put the logo of CASE U at the left top corner of the poster, which is clear and easy to find. For the poster title, I added several duplicated borders to it with different secondary theme color, so that the title can have a stronger 3D effect which is aligned with the 3D case in the logo. For the background, I created a notebook page grid using lines and use shadow to present layers. It seems like there is a heap of posters. In the body of the poster, I used the phone case in the mobile phone to illustrate the main content and process of the phone case customization service. The target audience can develop a clear insight of what is CASE U and what service we provided. I used the proximity design principle, since I categorized the different material and patterns and put them into groups. The layout can be clearer and easier to read. At the button of the poster, I add the slogan to attract the target audience visiting the official website, which is important to achieve the project goal.

In this poster, I also discovered some useful image processing methods using Adobe Illustrator. When I want to create a search logo, I first found an image of the earth, but the resolution of that jpg image is not good enough, and I cannot change the color or add any effect on it. The figure 15 illustrates that the contour of the shape is not smooth with many pixels. Therefore, I used the image tracing tool to transform the image from a bit map image to a vector image. Since the original image is just a wireframe with one color, I choose the black and white mode and I used the expend tool to separate the two colors, so that I can remove the background and only leave the earth logo as a path rather than a bitmap image. This method is useful when we only found some source images with low resolution, and we can always transform it to a lossless vector image.



Figure 15 Bitmap image



Figure 16 Image Tracing Tool

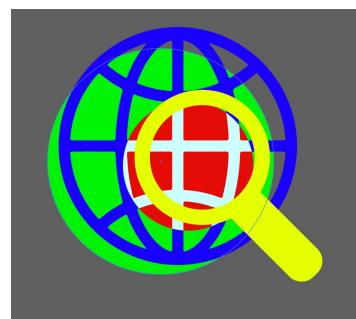


Figure 17 Final result of the search logo

Cell phone case
design factory

Choose any
combinations

Design your own phone case now

Pattern

- Text
- Sketch
- Photo
- Stickers

Color

Provide plentiful color matching

Material

- Clear Plastic
- Metal Glass
- Leather
- Silicone
- Suede

Find out more on our official website

Search CASEU.com

Figure 18 Poster

D. Web Design

Based on the poster and banner image, I designed an official website for CASE U. The design style is compatible with the multimedia productions since all the multimedia productions will be presented on the website. I used Wix as the design tool for the website interface design, and here is the website link: <https://huangminzhihuangmi4.wixsite.com/caseu>

The top title bar includes the brand logo, brand name, and our slogan “Cell phone case design factory”. Those three items are reused in all of the graphic design in this project with the same layout, so that the audience can develop an impressive and intuitive brand image of CASE U in their mind, and the design for the brand is consistent among different types of multimedia design. I used the same theme color of the blue and green to create the navigation bar. The background of the navigation bar is an image with gradient color from white to green. Therefore, the navigation bar can be differentiated from the title bar, while at the same time it can integrate the two bars into one section without a sense of separation. I also reused the search bar in the poster in the navigation bar, so that the audience can be more familiar with the design and its functionality. The top bar will stay static among different pages within the website. I also gathered all the graphic and video multimedia production to present on the website. The banner image is placed at the home page and it will automatically change among the three banners. An advertisement video and some case products will also be presented on the homepage.



Figure 19 Title Bar & Navigation Bar

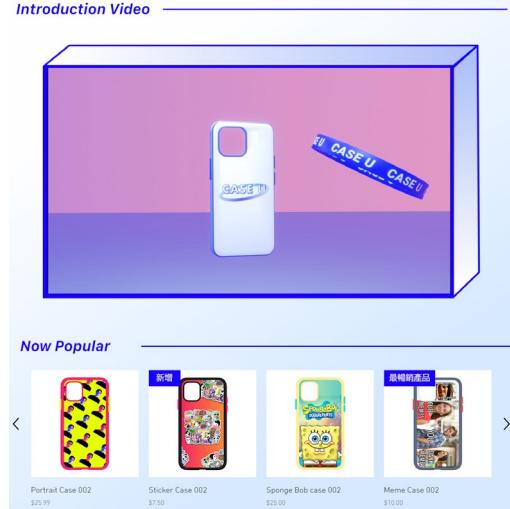


Figure 20 Homepage

I also created a design page which aims to introduce the mobile phone case customisation service and provide a link to it. At the start, there is a title of “Cell Phone Case Customization Service” with a video background. Then, I add a CASE U factory introduction video which is the final video of my 3D modelling and animation. To better explain how the service work, I add the poster to it with some

word description. After the user watched those multimedia productions, they can click the “Design your phone case button” to start our service.



Figure 21 Design Page Title

This figure contains two parts of the CASE U website. On the left, there is a section titled "CASE U Factory Video" featuring a 3D rendering of a yellow cartoon character standing in a factory setting. Below this is a link "Visit CASE U Factory Now". On the right, there is a section titled "How it works" which includes a list of icons and the text "Cell phone case design factory". The right side also contains several sections describing customization options: "Case Material", "Back Pattern", "Middle Frame", "Inside Color", "Camera Color", and "Engraved Service". Each section includes a small icon and a brief description of the service offered.

Figure 22 Design Page Video

Figure 23 Design Page Description

E. 3D Modelling

For creating the promotion video of CASE U, I created two 3D scenes and used the two scenes to render and output two videos. The first scene is created for an advertisement of the CASE U website, and the second video aims to introduce the mobile phone case customisation service for the customer.

a. 3D Modelling Result of Two Related Scenes

i. The First Scene

The first scene mainly includes a screen showing our website, a text of “Search CASE U.com”, and a 3D version of our logo. The purpose of creating this scene is to render an advertisement video for our official website, and present our logo in an interesting 3D form.



Figure 24 First Scene - Computer Model

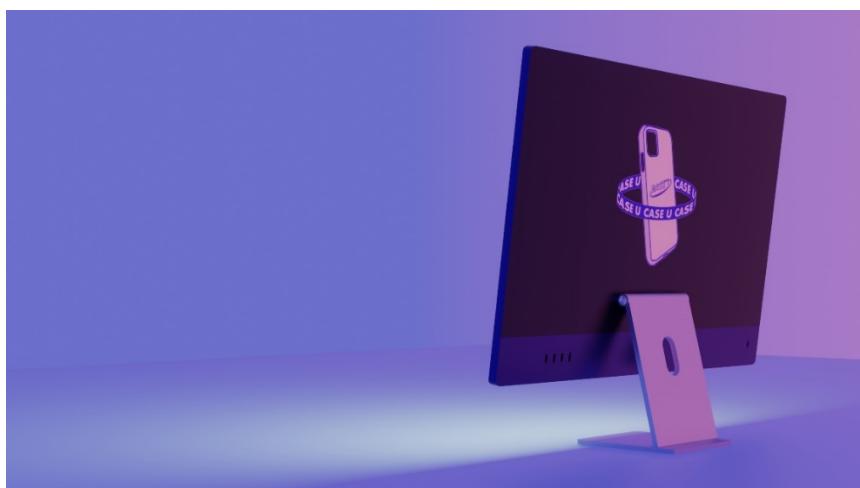


Figure 25 First Scene - Computer Model Back Side

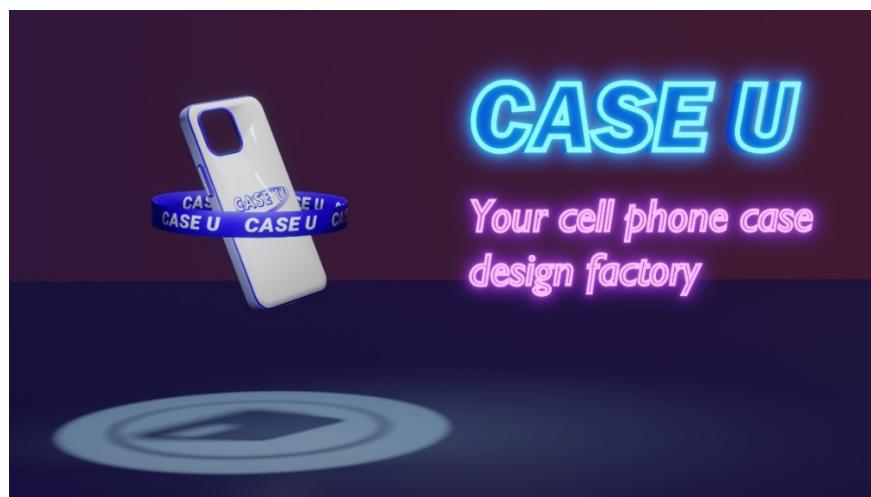


Figure 26 First Scene - 3D Logo model

ii. The Second Scene

The second scene I created is a 3D cartoon factory of the brand CASE U. It mainly includes some machines, two conveyor belts, a spiral slide, some buildings with stairs, a magic door, some pipes, a light board of our brand name and a 3D logo. I created this scene for the purpose of creating a video of 3D factory to introduce the mobile phone case customisation service to the target audience. Unlike the traditional product advertisement, I want to utilize the 3D modelling method and animations to create a new form of it.

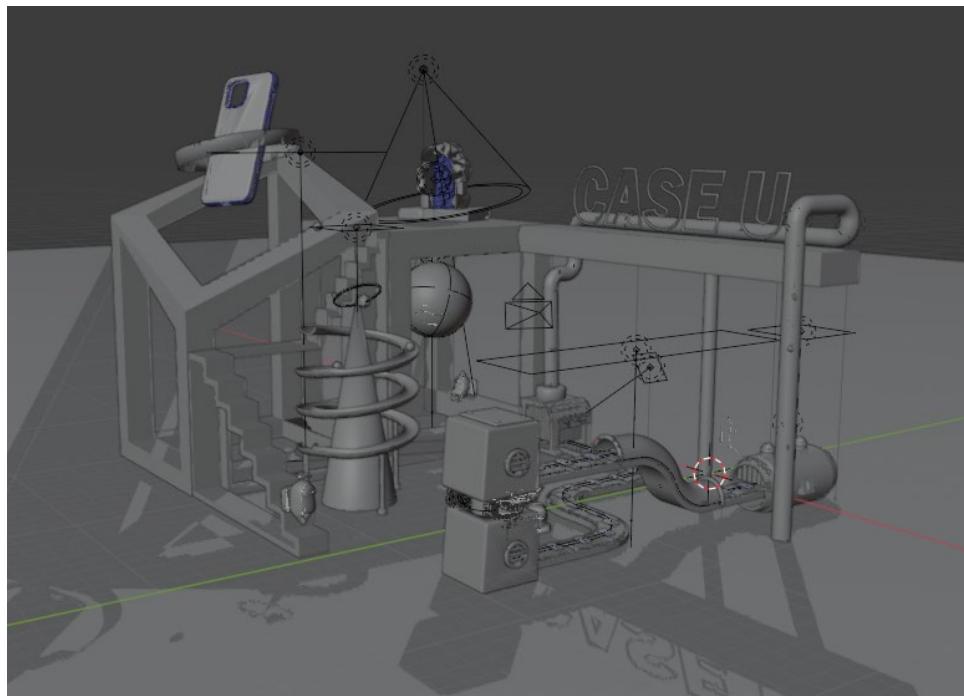


Figure 24 CASE U Factory Modelling without Material



Figure 25 CASE U Factory Front Side



Figure 26 CASE U Factory Right side

b. 3D logo modelling

In order to create some animations on the brand logo, and have some different views, a 3D version of the normal logo is needed. I used the normal logo I created for CASE U as the reference image and created a cube for the basic shape. There are three useful modifiers to use which are Bevel modifier, Boolean modifier and the Solidify modifier. The bevel modifier allows me to get a rounded angle and the smoother shape of the cube (Figure 27). I also used the bevel modifier on the power and volume button. To get the charging hole and camera hole, I applied Boolean modifier on the main body (Figure 28). To make the case more realistic with some thickness, I applied the solidify modifier to it. I also created the texture image for the brand banner and the back pattern. I used the extrude region tool to get a bulge around the camera hole to better protect the camera (Figure 29). The name circle around the case is created by the circle and used extrude tool. I created the texture filling with the brand name and applied it to both sides. The final 3D model of the brand logo is shown in figure 30.

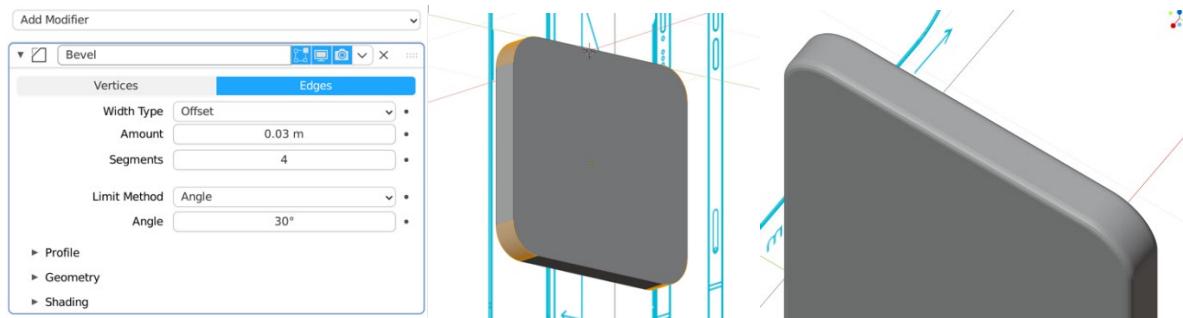


Figure 27 Bevel Modifier

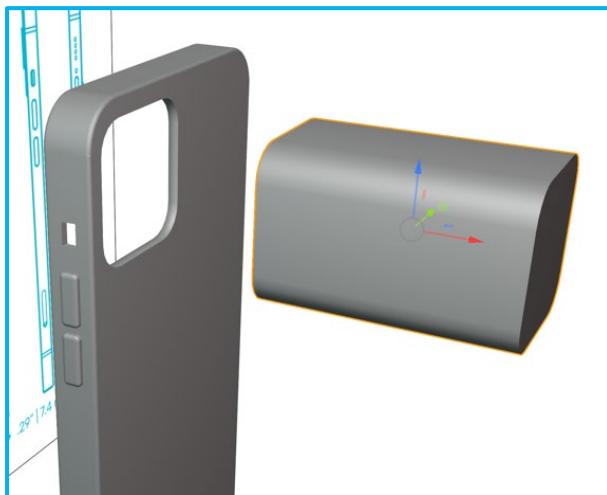


Figure 28 Boolean Modifier

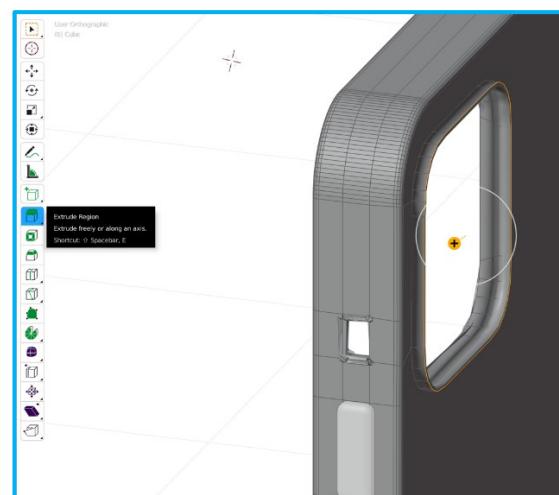


Figure 29 Extrude tool

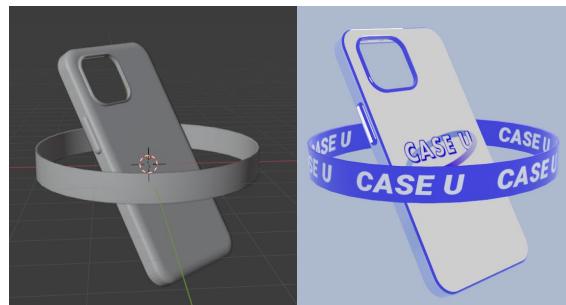


Figure 30 Final 3D model

c. iMac Modelling

In order to create a screen to present the website in the video, I chose to create a 3D model of iMac 2020. I also used a three-view image of iMac as the reference image and created a cube as the basic shape (Figure 31). I used the loop cut tool to get more resolutions on the cube so that I can have more details when connecting the stand (Figure 32). Bevel and Boolean modifier are also used to get rounded shape and holes (Figure 33 & 34). Finally, I added a screenshot of the website as the texture of screen, and applied the logo of CASE U to the

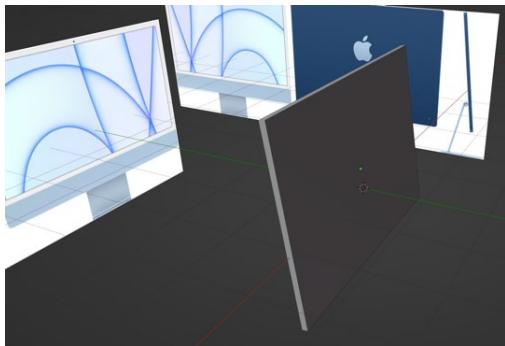


Figure 31 Basic Shape

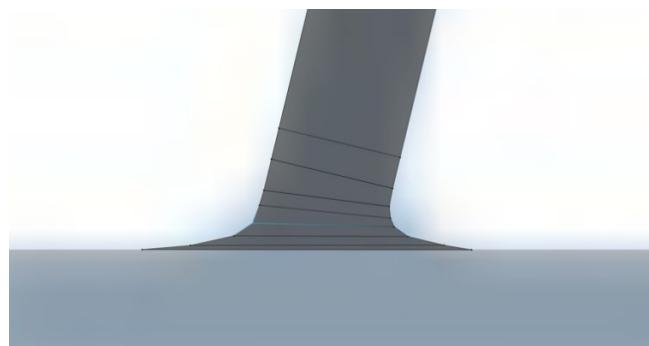


Figure 32 Loop cut tool

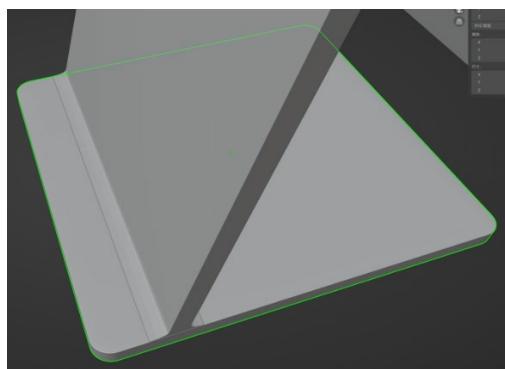


Figure 33 Bevel Modifier

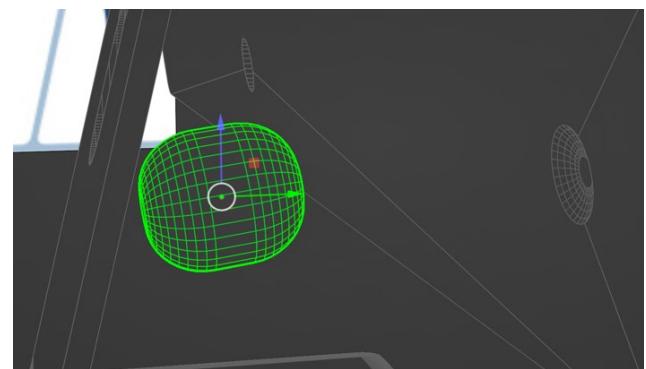


Figure 34 Boolean Tool

d. Main Characters Modelling

My design idea for this set of 3D model is a 3D cartoon factory. I created the workers inside it first. I built the character inspired from the game Among us. I used the shape of the game character in Among us. I still used a cube as the basic shape of the body, and another cube for its bag. To form the body shape, I used some modifiers to the cube such as bevel and subdivision surface modifier to get a smoother shape for the characters. I used the extrude tool to create its legs and glasses. I also added some decorations to the different characters and used different materials to differentiate them, such as the crown, halo, or hat. I chose a zero-roughness material with high reflection as their main body which made them look like a porcelain doll which made them funnier and cuter. For the material of their glasses, I chose to use the pixel style for the color. I used different materials at different faces of the glasses to achieve the pixel style (Figure 36).

After the 3D modelling of the main character, I developed the new skills of modelling the rounded and irregular shape using the subdivision surface modifier and the smooth shading. I also developed a new skill of quickly select the faces when I assign the different materials: After I chose a connected set of faces, I can just press “Control” and “+” to select the outside faces around your selection.

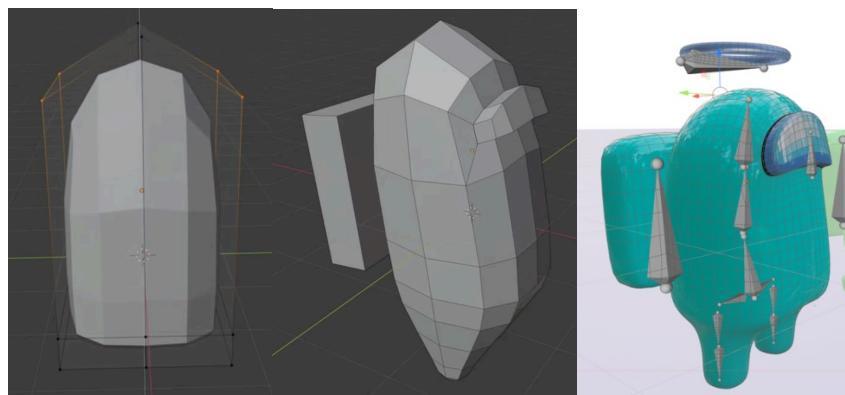


Figure 35 3D modelling of the Character

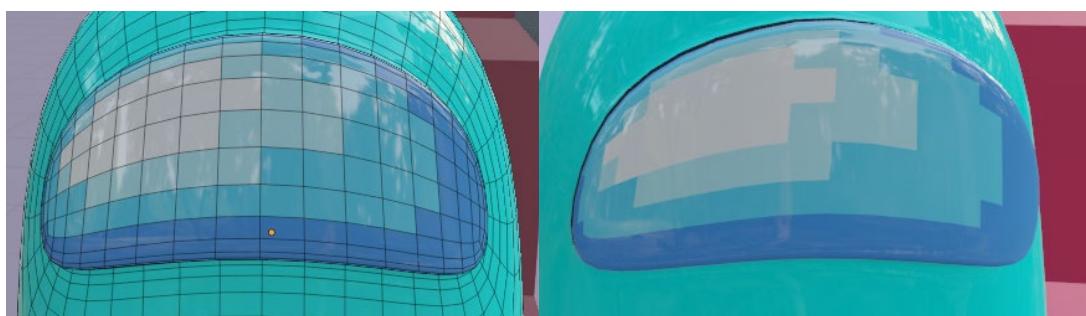


Figure 36 Glass material of the Main Character

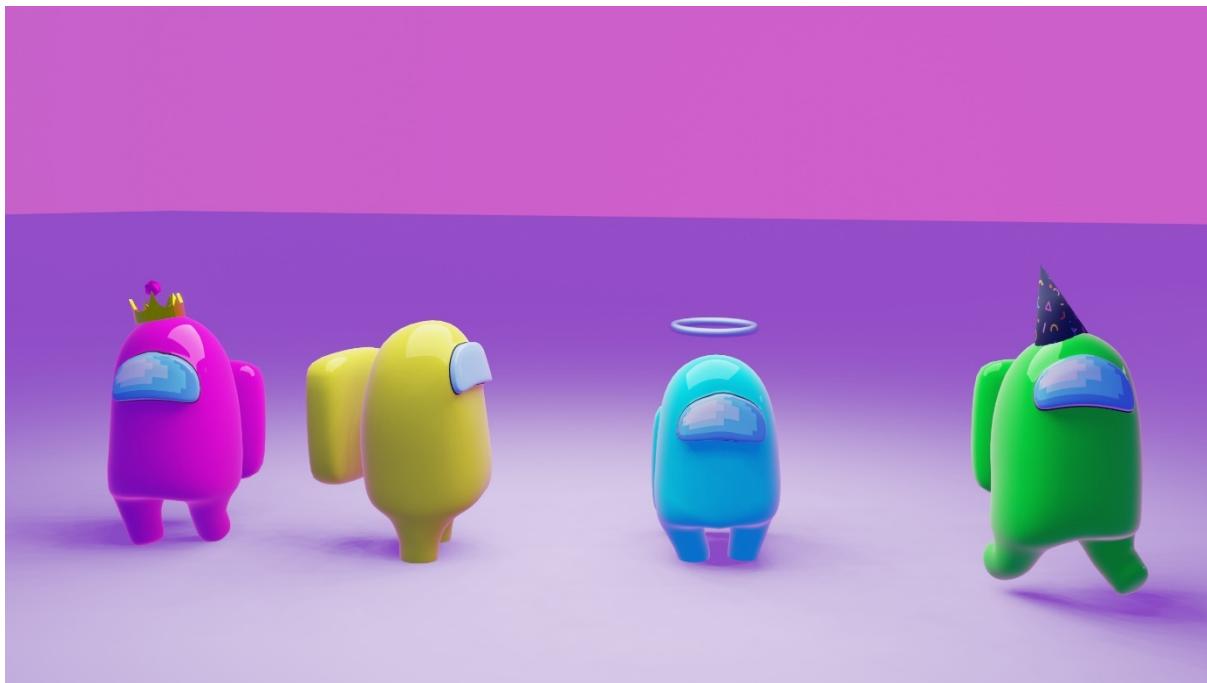


Figure 37 Final result of the Main character

e. 3D Factory Modelling

i. Machines

I created the machine first using the cube and cylinder and used the bevel modifier to get the smoother angle to fit the design style. I also used Boolean modifier to get some holes such as the windows, or doors. To get a various visual effect for the machines, I used different materials on them, so that some parts will be like glasses with reflection and some parts seems more like medal. The various material will make the scene more vivid and interesting.

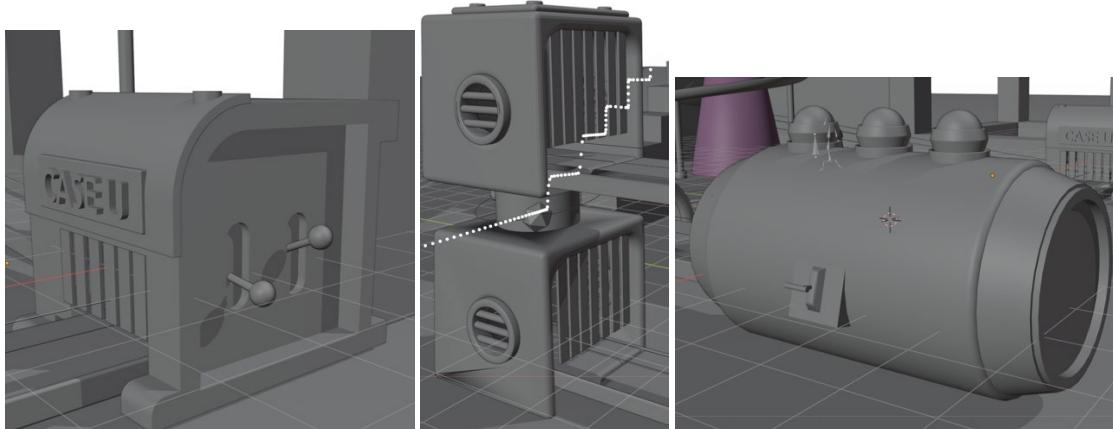


Figure 37 Modelling of the Machines



Figure 38 Final result of the Machines

ii. Spiral slide modelling

For the spiral slide, I created a circle first and used the screw modifier to create a spring-like round tube without any fill. To get the shape of the spiral slide, I chose the middle line of the round tube using shift and alt with left click, and separated it by the two lines, so that I cut half of the round tube. After I got the basic shape of spiral slide, I used the solidify and bevel modifier to make it more realistic.

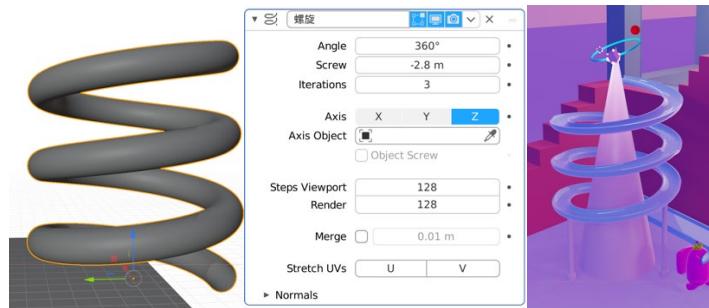


Figure 39 Spiral Slide Modelling

iii. Conveyor belt modelling

Then, I am trying to create the conveyor belt base. I create a curve first which is the path I want the conveyor belt to go through (Figure 40), and I used bevel modifier to the vertices to make it smoother. Then, I created a basic shape of the conveyor belt base using a cube and extrude tool (Figure 41). I cut it by several times using the loop cut tool since there would be some rounded angle they need to go through. Then, I applied the array shape first to create a multiple duplicate within an array for the basic shape and applied the curve modifier to make the array list follow the shape of the curve. Finally, I applied the two modifiers and convert them to a mesh. I used the bevel modifier to get a smoother angle. I used the same method to create another conveyor belt base.



Figure 40 Product Line

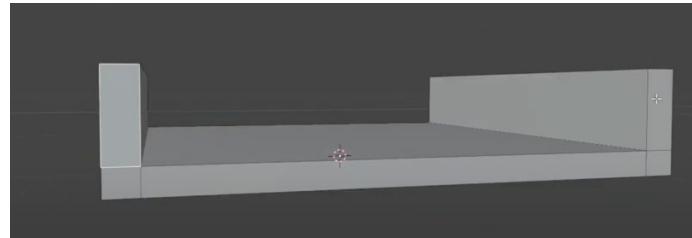


Figure 41 Basic Shape of the Conveyor Belt Base

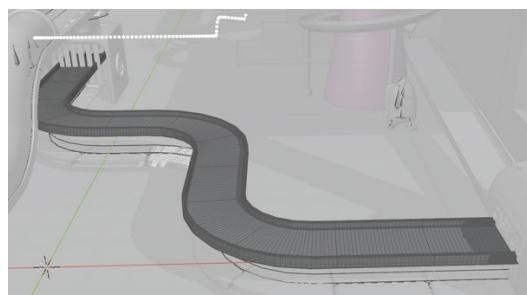


Figure 42 Final shape of Conveyor Belt Base

For the conveyor belt itself, I used the similar method. I first create a rounded circle curve (Figure 43) and a plane. I used loop cut to cut the plane several times and add the array and curve modifier to it (Figure 45), so that I can get the circle follow the conveyor belt line (Figure 44). Then, I convert them into curve and separate them together. Next, I create a plane and apply the same method to each curve, so that I can get the conveyor belt itself, and I can just move the plane forward to get the conveyor belt animated. I also add the texture to the belt and add the bump effects to get a more realistic effect.

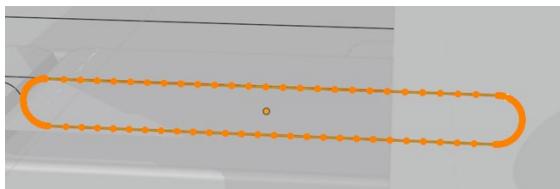


Figure 43 Circle

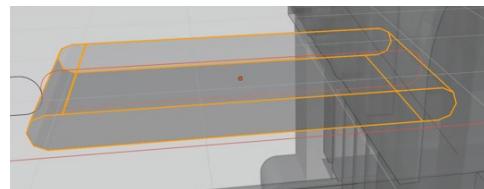


Figure 44 Conveyor Belt

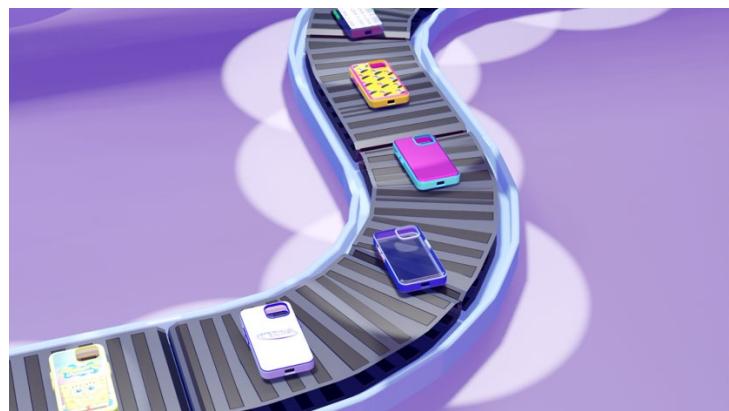
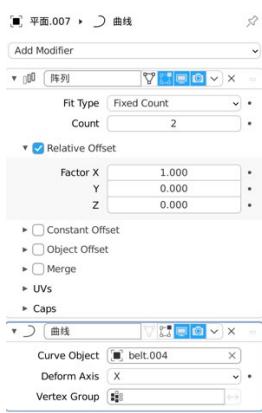


Figure 45 Array and Circle Modifier

Figure 46 Final Result of Conveyor Belt

iv. Buildings and Stairs Modelling

For the two buildings, I also used cube to create them. I used the insert faces tool to create a smaller face to each side of the cube and deleted them to get a cube only with frame. Then, I applied solidify modifier to them to get a stronger frame.

I used the cube to create the stairs. I applied the bevel modifier to one edge and chose the profile type to be steps rather than super ellipse. I used the same method to only get its frame.

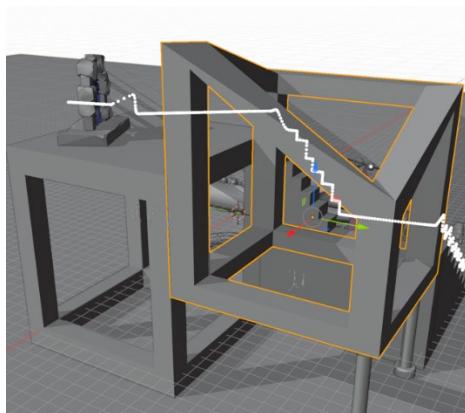


Figure 47 Buildings Model

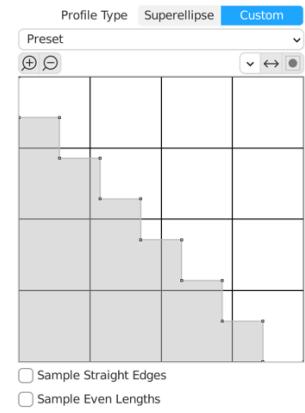


Figure 48 Bevel Modifier for Stairs

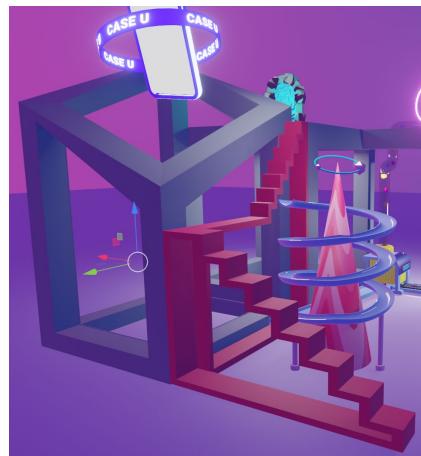


Figure 49 Final Result of Buildings and Stairs

v. Magic Door modelling

For the magic door, I also used the bevel modifier for each vertex randomly to get a more natural effect. For the magic face, I used the displace modifier and add build-in wood texture on it (Figure 50).

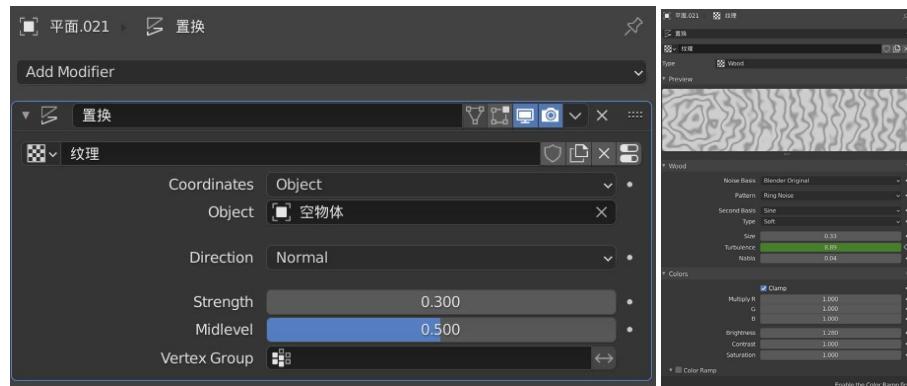


Figure 50 Displace Modifier and Wood Texture

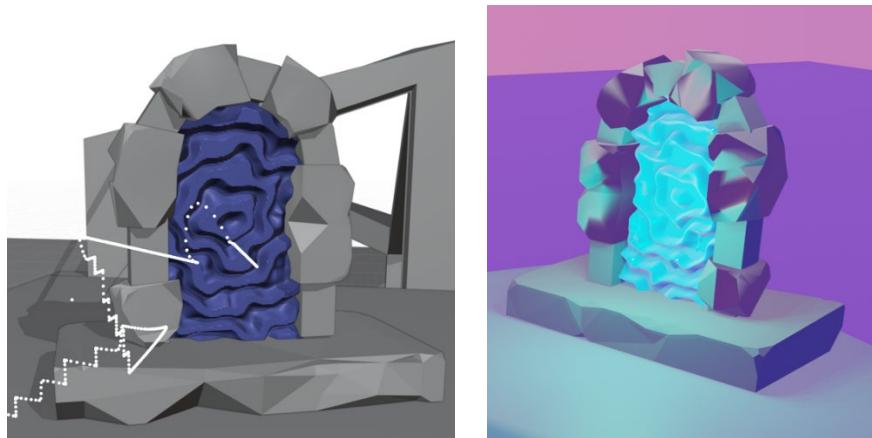


Figure 51 Final Result of Magic Door

vi. Transparent Pipe

I created a line for the path of the pipe and used Bevel modifier to create rounded corner of it. Then I used the similar methods to create the transparent pipes using curve modifier and solidify modifier.

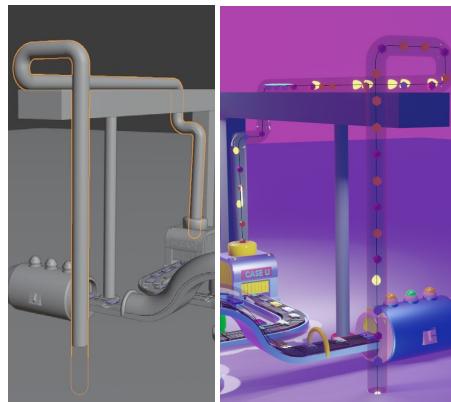


Figure 52 Final Result of Transparent Pipe

vii. World Environment:

For the world environment, I used a gradient color as the sky color.

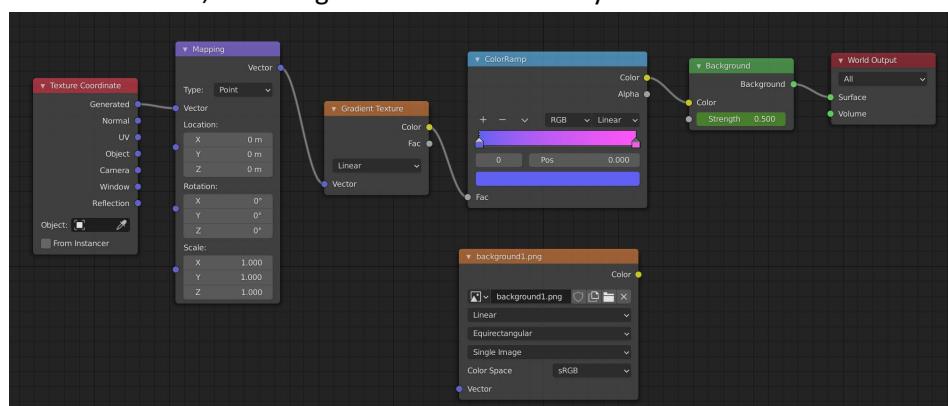


Figure 53 Environment Nodes in the Shading View

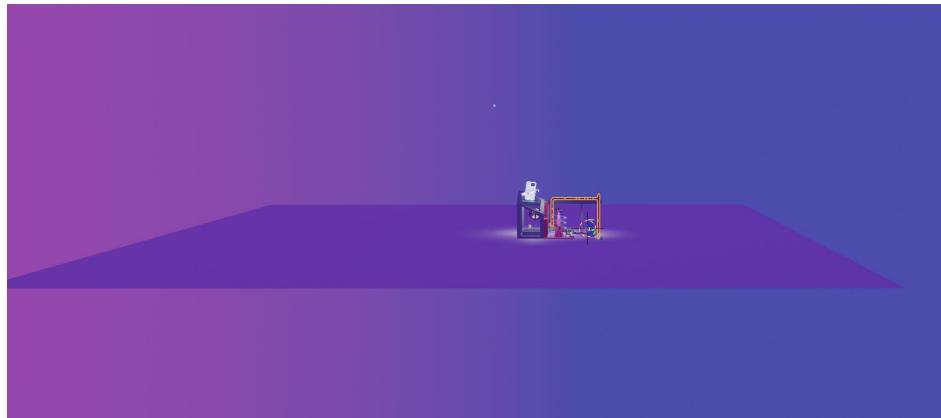


Figure 54 Final Result of the World Environment

f. Material

- i. I mostly used the principled BSDF as the material and just changed its base color, roughness, metallic, anisotropic for different faces.
- ii. For the cap of the conveyor belt and the transparent balls, I used the mix of transparent BSDF material and the Glossy BSDF material. The factor is 0.167 so that there would be more realistic shining of the object.

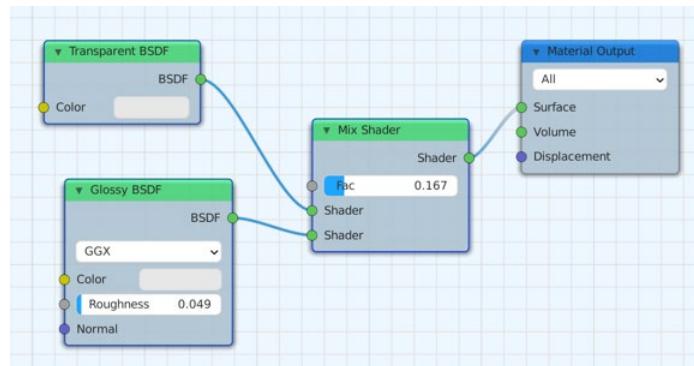


Figure 55 Mixed Shading Node of the Transparent Material

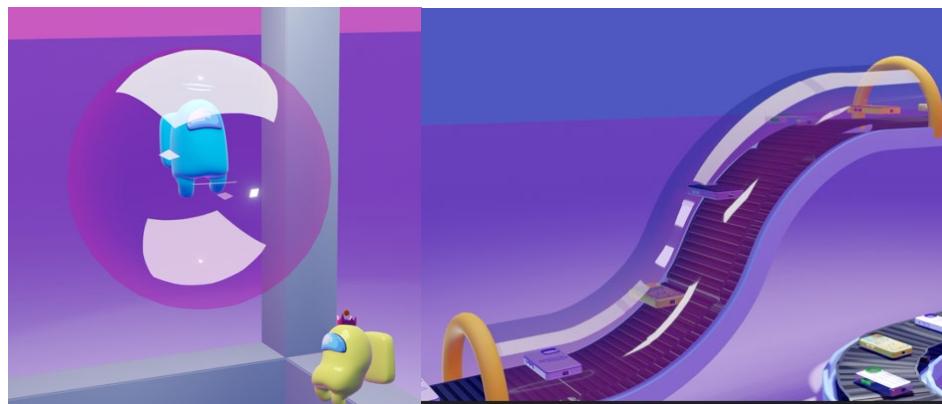


Figure 56 Applications of the Transparent Material

- iii. Also, I used the emission material for the light and the 3D logo and mixed with the principled volume in order to get some animations on the light. In order to get a more realistic effect on the text light, I opened the Bloom effect in the render properties tab.

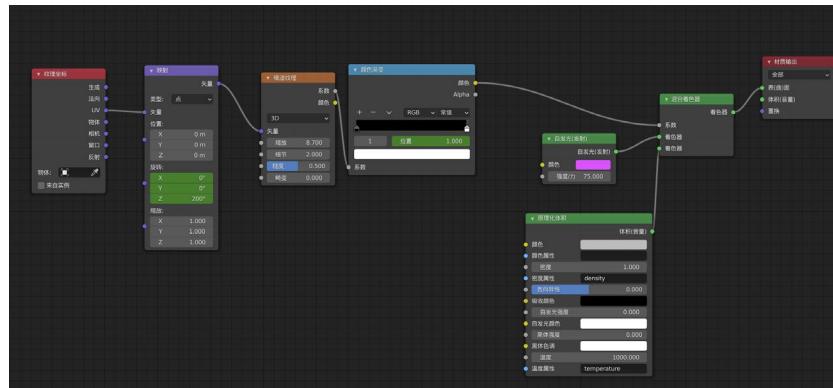


Figure 57 Mixed Shading Node of Emission Material

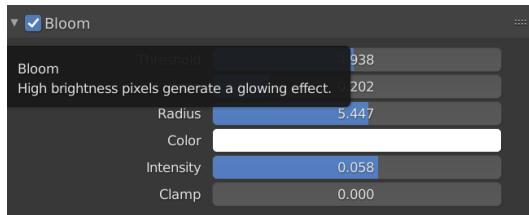


Figure 58 Bloom in Rendering Setting

F. 3D animation

a. Animation Design Idea

For the animation part of the first scene, I tried to achieve a fast and rhythmic animation based on a background music with drums, and then use the animated camera to achieve a one-shoot and long shoot animation. I also added some special animations to present the product characteristics of the mobile phone case. The final result is a short and fast advertisement video.

When it comes to the second scene, I want to make a more lifestyle and natural animation of all the characters and objects within the 3D cartoon factory. Therefore, I almost animated all of the objects in the scene such as the halo decoration, the moving diamonds in the transparent pipe, the magic door, the 3D logo, the transparent ball, and the dropping balls. When there are more and more animated objects in this scene, the audience will feel more and more that our scene is real and immersive. At the same time, I added animations to all of the characters in the scene.

b. Character Animation

I created the bones for each character and connected with the body shape. For different decorations, I made different bones for better animation of them. I separated the character

animation into the pose part and the moving part. I make animations on the bones for their poses and made animation on their body shape for their moving. Through animating the main characters, I learnt how to create and applied a set of bones to the body shape. I also learnt that I could save the different pose states using the pose library, so that I can animate the body just by changing the different pose states in the pose library.



Figure 59 Bones of Each Character

For the pose part, I create several poses and saved them into the pose library (Figure 60). For example, the walking animation, I created 5 poses in consequences: static, right, right mid, left and left mid (Figure 61). For the jump animation, I also created 4 different poses (Figure 62). When I iterating the different poses in the pose library with a specific time frame, I can make the character animated as in reality.

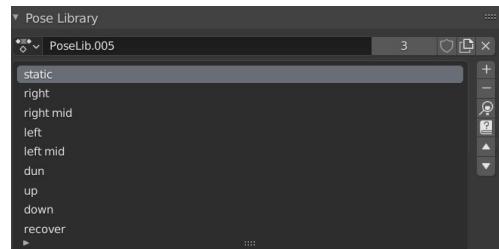


Figure 60 Pose Library

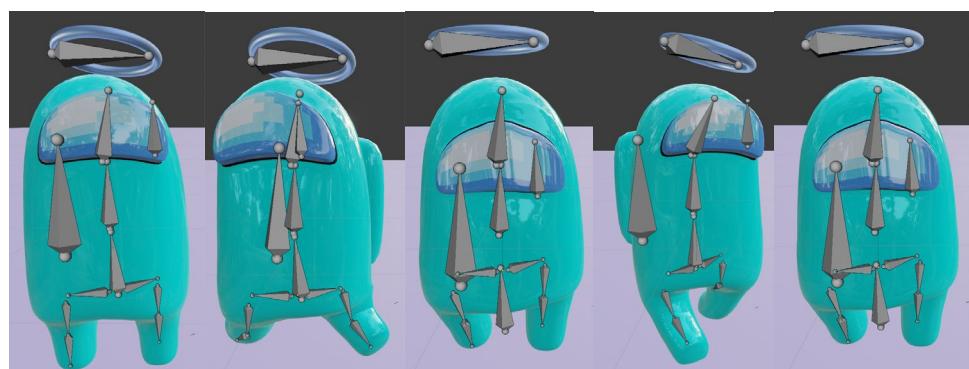


Figure 61 Five Poses for Walking



Figure 62 Four Poses for Jump

For the body moving animation, I created multiple key frames in the timeline and make sure that the moving speed is aligned to the pose speed. For example, I made one of the character first jump at the magic door, and then walk in front of the stairs. Then, it goes downstairs with animations. Here is an example of the key frames of that character.

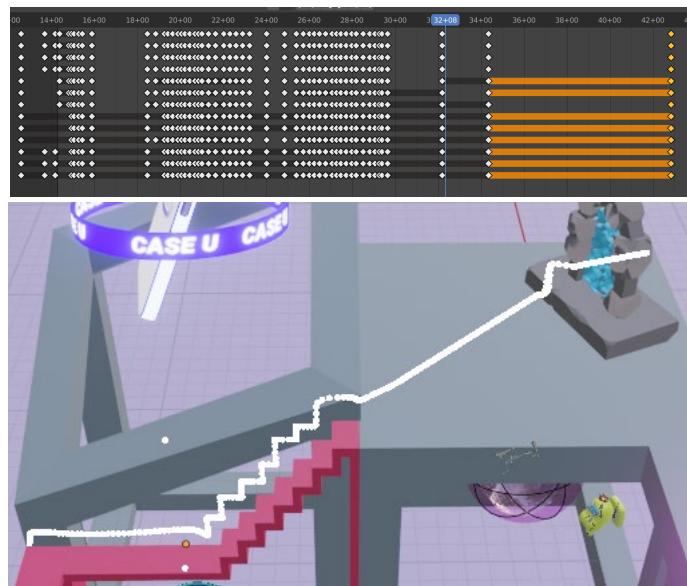


Figure 63 Example Timeline and the Moving Trajectory of One Character

For the character in the transparent ball, I parent the character and the ball first, so that the character will not go outside the ball. Then, I just animate the position of the ball and the pose of the bones of the character. Thus, the character can follow the ball moving and have its gesture inside the ball. I also set the extrapolation mode of that channel to be cyclic, so that it can be animated forever.

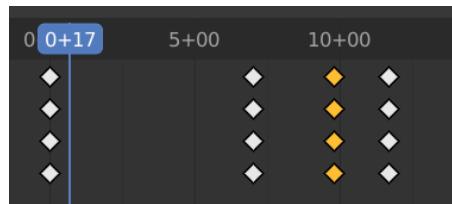


Figure 64 Timeline of the bones of the Character inside the Ball

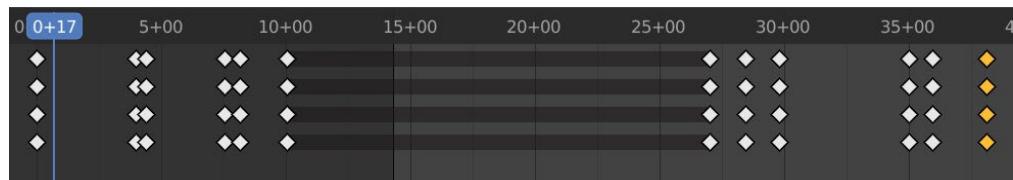


Figure 65 Timeline of Ball

c. Object animation

i. Rigid Body Animation

I created some balls for falling through the spiral slide. I added the rigid body to them and set them to be active object, so that I can get a more realistic view for the falling animation. I also add rigid body to the spiral slide and the conveyor belt and set them as passive object, so that they can collide with the balls. I add the key frame to the dynamic option in the rigid body property of the balls, so that I can control the timing they are falling and add some layback on them.

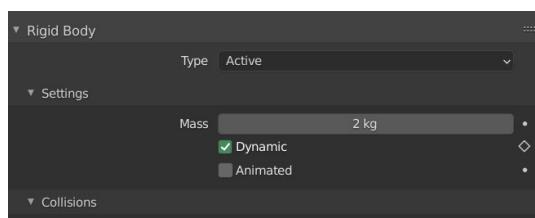


Figure 66 Rigid Body Settings



Figure 67 Balls Falling Result

ii. Magic Door Animation

I created an empty object only with the axis, and applied it to the coordinates in the displace modifier, so that I can change the place of the displacement of the texture. I add key frames to the

rotation of the empty object to get a rotation animation on the plane. I also animated some properties in the displace modifier and the texture settings to get a more vivid animation.

iii. Product Line Animation

For the conveyor belt rotation animation, I set all the conveyor belts to a parent, and animate the x-axis (Figure 68), so that the plane can be rotated through the circle I set. Since I separated the circles, the conveyor belt can rotate individually and since I parent them together, they will rotate at the same speed. In order to make the conveyor belt moving forever, I learnt how to set the channel to be cyclic. I set the extrapolation mode of the x location channer to be cyclic (Figure 70), so that it can be animated forever.

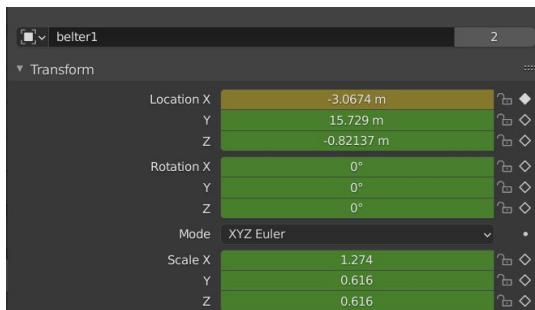


Figure 68 Conveyor Belt Transform

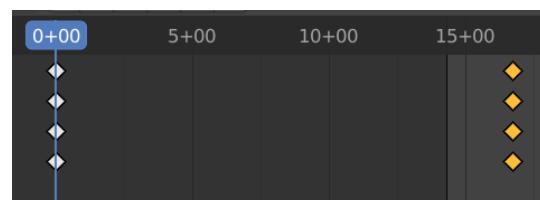


Figure 69 Timeline of the Parent of Conveyor Belt

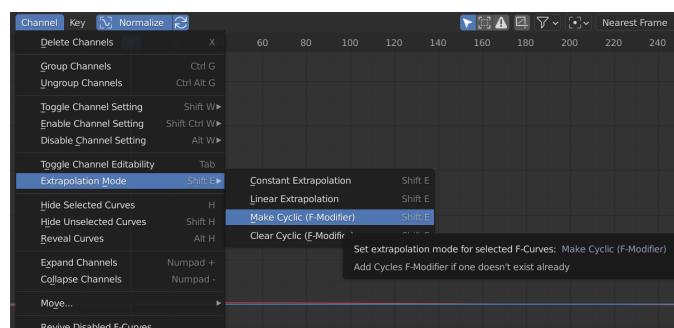


Figure 70 Make Cyclic

For the product animation, I create a straight line first and called product distribution line, and subdivided it into 20 subsets, so that I got a line with 20 vertices (Figure 72). Then, I add a curve modifier to it and make it follow the path of the conveyor belt I created before (Figure 73). Then, I can just animate the x-axis of the product distribution line by making the product go ahead and follow the production line. Next, I need to append the product to the vertices of the product distribution line. I first duplicated the case I created for the logo, and applied different materials and textures on them (Figure 71). Then, I created a geometry node to the product distribution line (Figure 74), and create a node instance for the line. Next, I set the node instance to the collection of the phone cases. To get a random order of the cases, I set the random seed as 8.



Figure 71 A Set of 3D Cases

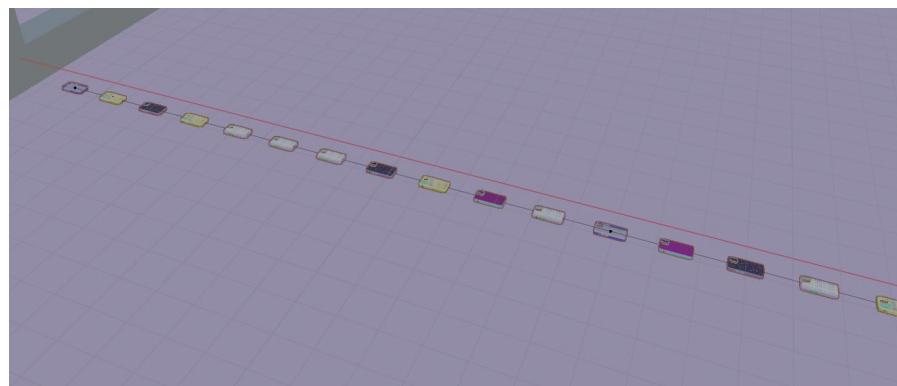


Figure 72 Product Distribution Line with Cases as Node Instancing

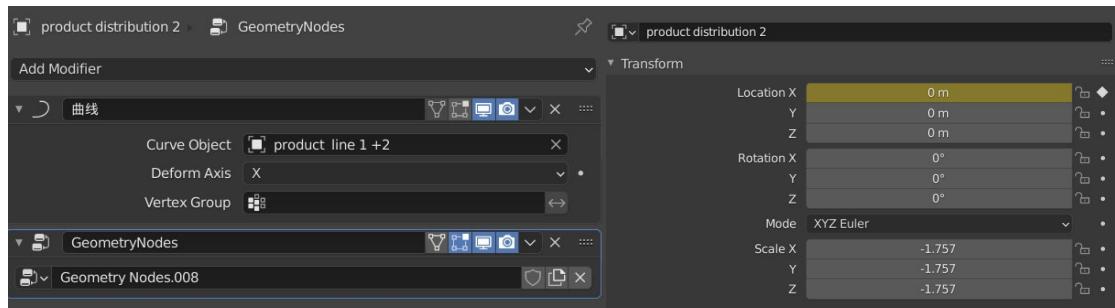


Figure 73 Curve Modifier and Transform of the Line

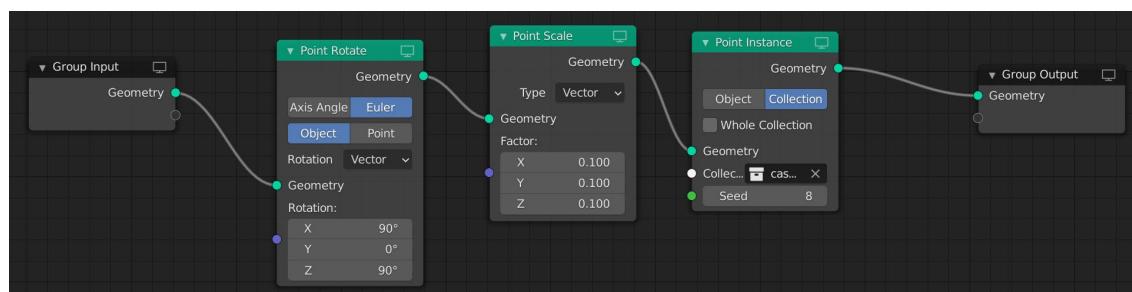


Figure 74 Geometry Node

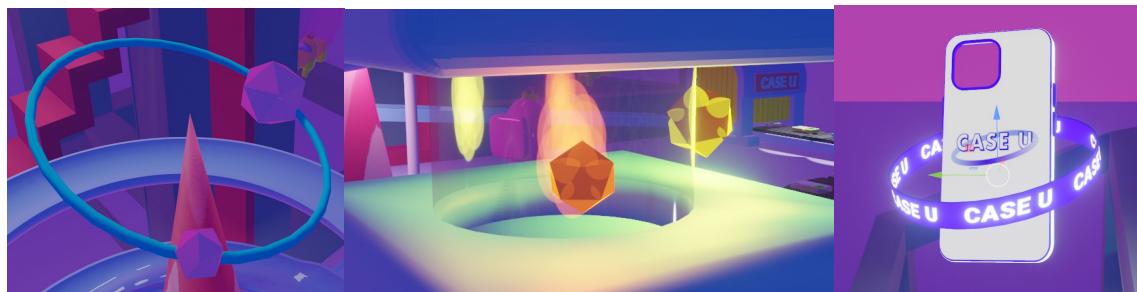
iv. Pipeline Animation

I used the same methods as the product animation to create the pipeline animation, so that the diamonds can be pass through the pipeline. I also add a light to the collection, so that the pipe line can be light up with animation.

*Figure 75 Diamonds in the Pipeline*

v. Other Object Animation

To make the whole environment to be more interesting and vivid, I also added some animations to some little objects for example the rotating logo, the halo and diamonds. I set the different rotation speed of the brand banner and the case to have a different visual effect.

*Figure 76 Other Object Animations*

vi. Text Animation:

In order to make the light board of the brand name more like a neon light, I added animation to the material of this text, so that the whole light board will have a more realistic vision of voltage instability. I first separated the 5 letters and minimized the UV map of the text material in the UV

editing view, so that when I change the material, each letter can be changed individually. Then, I add key frames to the position of the colorRamp and the rotation property in the mapping node.

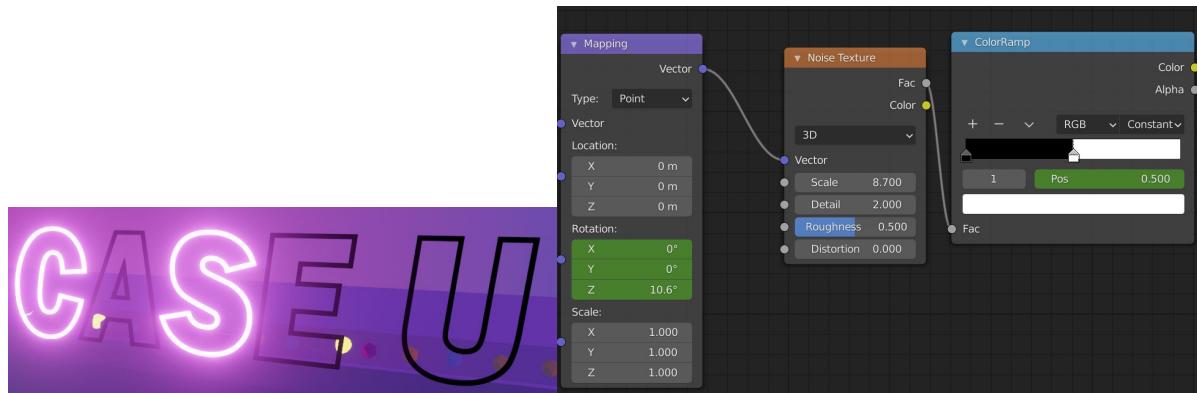


Figure 77 Text Animations

vii. Light Animation

I also animated the strength of each light since at the start of the animation, the environment should be dark and then gradually light up. I created an area light and placed it at the bottom of the spiral slide at first, and then goes up to have the engine start effect (Figure 80).

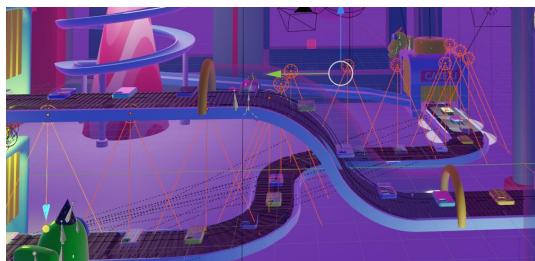


Figure 78 Spotlights

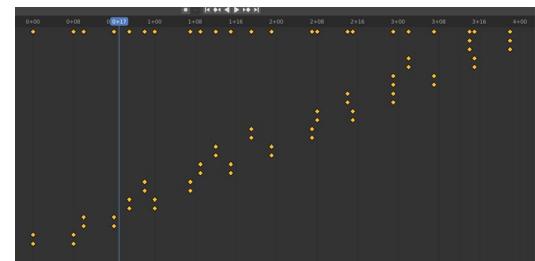


Figure 79 Timeline of the spotlights

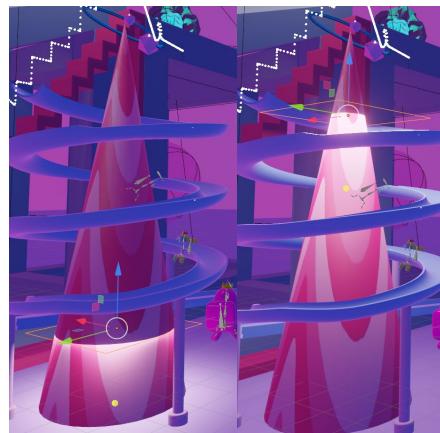


Figure 80 Example 2 of Light Animation

d. Environment Animation

I animate the strength of the background, so that the environment is dark at first, and then light up.

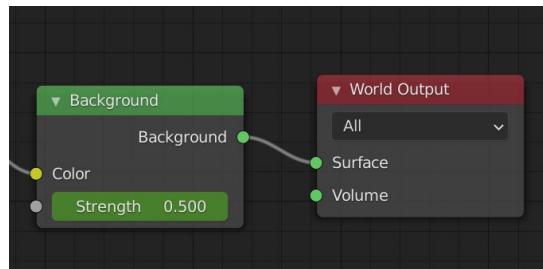


Figure 81 Shading Node of the Environment Background

e. Camera Animation

I animated the position, rotation and the focal length of the camera to get the animated view of the animation.

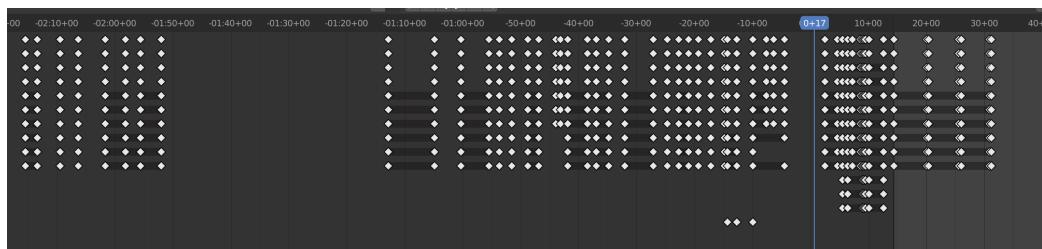


Figure 82 Timeline of Camera

G. Video Compositing and Audio Processing

After I rendered the animation of the two scenes, it output a few video clips. Using these video clips, I created two advertisement videos for promoting the CASE U brand and its service and can be presented on the official website.

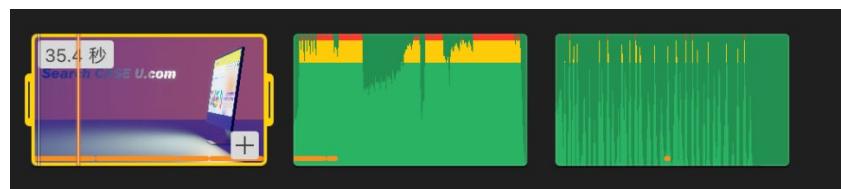


Figure 83 Video Clips Output for Scene 1

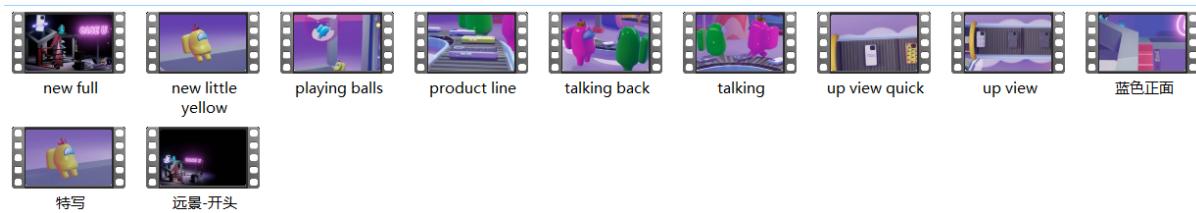


Figure 84 Video Clips Output for Scene 2

The link for Video 1: https://drive.google.com/file/d/1P_cRv_y_U-OrUrBHK4EEXsepuCPyo_bQ/view?usp=sharing

The link for Video 2:

<https://drive.google.com/file/d/1gEluN5k4nXI3L3rVT6efJd7qcx9WnlyW/view?usp=sharing>

a. Main Procedures for video 1

1. The first video is an advertisement video for my assignment which mainly used the animation created by blender. I rendered the animations as a long shoot video from Blender and output as avi format. Then, I imported it into iMovie.
2. I searched the internet and found an appropriate background music for this video and applied to it. I also searched an “Object dropped” sound effect for my video since there is an animation of object dropping.
3. I cut the background music into two parts. I applied a fade out effect at the end of the background music. The first part of the background music is played at the start, before the case is dropped. The second part of the BGM is placed at the end after the camera comes closer to the dropped phone case.
4. I added the “Object dropped” sound effect at the time the case collides with the ground. To make the sound effect clearer, I increased the volume of it by 200%.

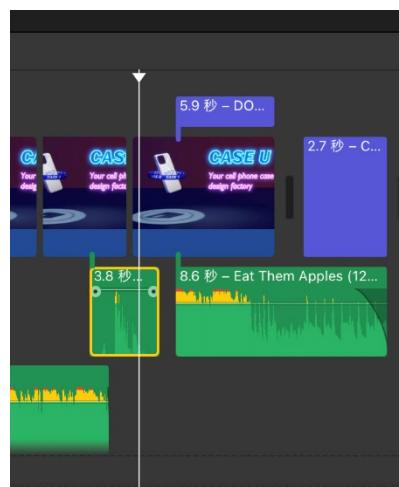


Figure 85 Object dropped sound effect

5. I added two subtitles at the end of the video. One overlay with the screen and one is just with a black background.
6. Finally, I output the video in mp4 format.



Figure 86 Main Frame 1 & 2 of Video 1



Figure 87 Main Frame 3 & 4 of Video 1



Figure 88 Main Frame 5 & 6 of Video 1

b. Main steps for video 2

1. I rendered 12 video clips of the animation I created in Blender and output them as avi file. Then, I imported them to iMovie.
2. I found some background music and sound effects such as the animal talking sources from the animal crossing game.
3. In blender, I rendered a main story line for the video which is the longest one. I add that video clip

to the timeline at first. Then, during the main timeline, I can add more different views to it and extend the content of the video. I just drag them onto the main timeline and choose which video clip I want to keep. I used the cut tool to break the main story line and add other video clips into it. I also added some transition effects between two video clips.

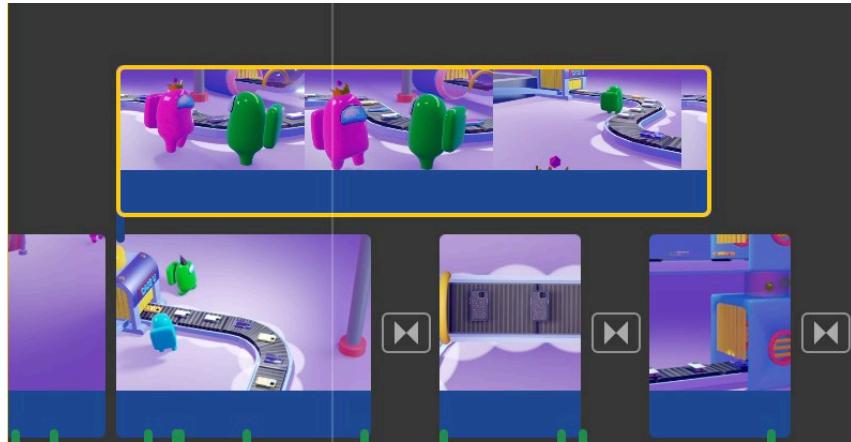


Figure 89 Transition Effects in the Timeline

4. After I get the initial frame of the video and the story line, then I started to add the introduction voice to the video. I wrote a script to be the background introduction of my video, and I used the free AI speech generator to create the voice. I cut the whole speech audio and separate them by sentences using the cut tool. For each sentence, I removed the blank audio and put them into the appropriate place in the timeline.

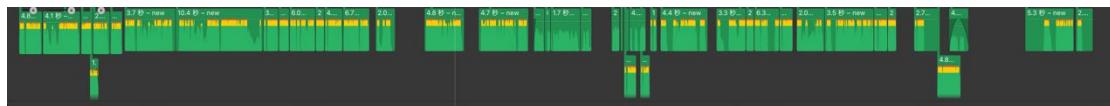


Figure 90 Timeline for the Introduction Voice

5. I also added some sound effects such as the scientific style sound effect at the start when the light is on. When the little blue character appears from the magic door, I added a space warping sound effect, and applied the fade-in and out effect on it to create a more immersive sound effect. Also, when a ball drops down to the spiral slider, I added a dropping sound effect to it.



Figure 91 Two Examples of Sound Effects

6. I added some background music which all comes from the embedded sound library of iMovie, and I cut it to fit the story and scene.



Figure 92 Timeline for Background Music

7. Since iMovie doesn't support the subtitle auto generation function, I used the CapCut for Mac to add the subtitles. I import the final video and use the AI subtitle generator function to add the subtitles. I correct some recognition errors of some subtitles and changed the font style to the main font style of the project and its color.

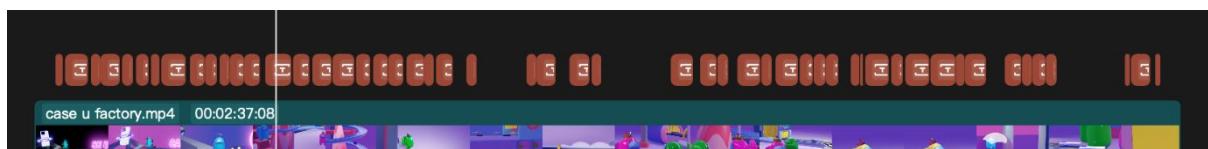


Figure 93 Timeline for Subtitles

8. Finally, I output the video in mp4 file format.



Figure 94 Main Frame 1 & 2 of Video 2



Figure 95 Main Frame 3 & 4 of Video 2



Figure 96 Main Frame 5 & 6 of Video 2



Figure 97 Main Frame 7 & 8 of Video 2



Figure 98 Main Frame 9 & 10 of Video 2

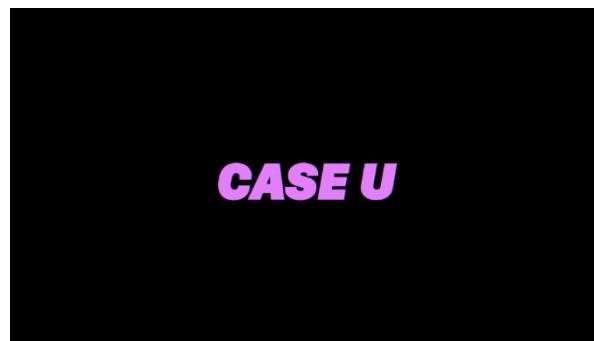


Figure 99 Main Frame 11 of Video 2