

**Internship at R&B Creative Studio on 3D product visualization &
Graphics Design**

BY

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This report presented in Partial Fulfilment of the Requirements for this the
Degree of Bachelor of Science in Multimedia and Creative Technology

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**DAFFODIL INTERNATIONAL UNIVERSITY
DHAKA, BANGLADESH**

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APPROVAL

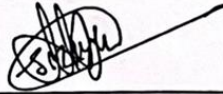
This Project titled “ Internship at R&B Creative Studio on Product Visualization & Graphics Design”, submitted by Sharia Hossain Tamanna to the Department of Multimedia and Creative Technology, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Multimedia and Creative Technology and approved as to its style and contents. The presentation has been held on 27 February, 2023.

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I, at this moment, declare that I have done this project under the supervision of MR Arif Ahmed, Associate Professor, Department of MCT Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere to award any degree or diploma.

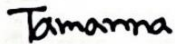
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I would like to thank my entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, I must acknowledge with due respect the constant support and patients of my parents.

ABSTRACT

As part of a structured program, an organization may provide an internship to potential employees. Through an internship, students can expand their acquisition of knowledge and theoretical abilities. The educational advisor of a student could on occasion set up internships for his students. Future professional growth in this area is strongly advised. In addition to the specialized skills in a given sector, an internship teaches students adaptable skills like teamwork, communication, and IT proficiency.

This internship's primary goal is to learn about 3D animation , 3D product visualization, texturing, rendering, professional work processes, client psychology, and how to operate in the market. Etc. And I'm getting better and better at 3D modeling.

I've learned a lot about rendering, texturing, leveling and 3D modeling. In the previous four months, I finished several 3D models. and receive positive comments from the R & B Creative studio. I now feel secure using the Autodesk 3Ds Max software to create any models.

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CHAPTER 1

INTRODUCTION

Utilizing illustrations, artwork, and renderings to visually describe your products to buyers is known as product visualization. These days, a lot of businesses accomplish this by integrating graphic product configuration software into their e-commerce websites. Customers can use this method to view a picture or depiction of the product as they complete their online orders.

For this purpose , we use several software to design our products. 3d animation is the one of best way to portray any type of product. Most of the product visualizer use 3DS MAX, MAYA, BLENDER, REALFLOW etc software for animation.

Now come to the dynamic simulation. An advanced activity that integrates environment design, operation, and control is dynamic simulation. Modeling and software technology are substantially more demanding than steady-state simulation. It can be use for creating realistic smoke, liquid object , water etc.

Moreover , A particle system is a tool being used computer graphics, motion graphics, and video games to simulate certain "vague" concepts that are otherwise very difficult to reproduce with traditional rendering methodologies. It's one kind of way which help us to create water drops, hair and many others staffs.

In my project, I use all kind of way to made my products realistic like as , I use good texture, color, reference images and so on. In reverse , for creating animation ,I use particle system, dynamic simulation, force filed, flip fluid etc. I will discuss all details in upcoming chapters.

CHAPTER 2

CASE STUDY

It was not that easy to choose a product and model it as real one . So, it was tough journey when I was doing these work. First of all , I had to study about that matter properly, also gain the proper knowledge about product visualization. Though employees of my company where I have done my internship, they were very helpful and friendly. They supports me whenever I faced any difficulties.

I watched many show reels on you tube which based on product animation. Then I took help from google. Moreover, my supervisor also give me some reference video which helped me more. In the beginning , I was very confused about what product I should for visualization . However , I find out that I have interest on cosmetic products.

Me and my colleagues list all the products . They give me all support during this project. Besides , we figure out all problems first then we come to the solution step by step. Nevertheless ,It was not so easy things to solve these problems, it took many study, reference etc.

CHAPTER 3

USED SOFTWARE DETAILS

3.1. 3DS MAX:



Figure 3.1.1: 3ds Max Logo

A professional 3D computer graphics tool for creating 3D animations, models, games, and photographs is Autodesk 3ds Max, formerly known as 3D Studio and 3D Studio Max. Autodesk Media and Entertainment is in charge of its creation and production. Modeling capabilities, a flexible plugin architecture, and a requirement for the Microsoft Windows platform are all present in this program. It is frequently employed by firms that create video games, numerous TV commercials, and architectural visualizations. Additionally, it is utilized for pre-visualization and cinematic effects. In addition to shaders (subsurface scattering & ambient occlusion), particle system, dynamic simulation, radiosity, customizable user interface, normal map generation and rendering, own scripting language and global illumination.

3.2. BLENDER:



Figure 3.2.1: Blender logo

A suite of 3D computer graphics tools called Blender is available for free and is used to make animated movies, visual effects, artwork, 3D-printed models, motion graphics, virtual reality, and, in the past, video games. 3D modeling, texturing, digital painting, raster graphics editing, fluid and smoke simulation, particle simulation, compositing sculpting, animation, rigging and skinning, match movement, UV mapping, rendering, motion graphics, soft body simulation, video editing, and, interactive 3D apps are among Blender's features.

Blender is cross-platform and functions just as well on machines running Windows, Linux, and Macs. To deliver a consistent user experience, its interface makes advantage of OpenGL. The list of supported platforms includes the ones that the development team has regularly examined to confirm compatibility in detail.

3.3. REALFLOW:



Figure 3.3.1: Realflow loge

RealFlow is a dynamics simulation and fluid program created by Next Limit Technologies in Madrid, Spain, for the 3D and visual effects industries. In addition to other 3D applications, this standalone application can be used to simulate fluids, water surfaces, fluid-solid interactions, rigid bodies, soft bodies, and meshes. For creating the RealFlow program and its contribution to the creation of motion pictures, Next Limit Technologies received a Technical Achievement Award from the Academy of Motion Picture Arts and Sciences in 2008. Future Limit Technologies declared the arrival of RealFlow Component for Cinema 4D in 2015.

Simulations based on particles are used in RealFlow technology. Point-based nodes (daemons) that may perform a variety of activities, such as imitate gravity or reproduce the tornado-like motion, can have a variety of effects on these particles. RealFlow is capable of simulating interactions and collisions between soft and stiff bodies. Users can create custom tools to enhance RealFlow's functionality by adding control over the majority of the workflow's components, such as batch runs, events, daemons, waves, and fluids, thanks to the presence of Python scripting and C++ plug-ins.

3.4. ADOBE PREMIERE PRO:



Figure 3.4.1: Adobe Premiere Pro

Adobe Premiere Pro is a non-linear, timeline-based video editing program (NLE) created by Adobe Inc. and distributed as a part of the Adobe Creative Cloud licensing scheme. Adobe Premiere Pro, which debuted in 2003, is the upgraded version of Adobe Premiere (first launched in 1991). While its sibling, Adobe Premiere Elements, is oriented at the consumer market, it is focused on professional video editing.

3.5. ADOBE ILLUSTRATOR:



Figure 3.5.1: Adobe Illustrator

The vector graphics editor and design tool Adobe Illustrator was created and is sold by Adobe Inc. Adobe Illustrator's creation started in 1985 and was initially intended for the Apple Macintosh. Illustrator CC was released concurrently with Creative Cloud (Adobe's transition to a monthly or annual subscription service provided over the Internet). The 25th iteration of the product series, Illustrator 2022, was made available on October 26, 2021. According to PC Magazine's evaluation, Adobe Illustrator is the finest tool for manipulating vector graphics in 2021.

3.6. ADOBE PHOTOSHOP:



Figure 3.6.1: Adobe Photoshop

Raster graphics editor Adobe Photoshop was created and released by Adobe Inc. for Windows and macOS. Thomas and John Knoll originally came up with the idea in 1987. Since then, the program has grown to be the most popular tool for creating professional-quality digital art, particularly when modifying raster graphics. Although Adobe forbids it, the term "photoshop" is frequently used informally as a verb (e.g., "photoshopping," and "photoshop contest", "to photoshop an image,").

Photoshop enables masks, alpha compositing, and many color models in addition to being able to edit and compose raster pictures on numerous layers. To accommodate these functionalities, Photoshop employs its own PSD and PSB file formats. Photoshop has limited capabilities for editing or rendering text, vector graphics (particularly using clipping path for the latter), 3D graphics, and video in addition to raster images. Plug-ins, applications created and released separately from Photoshop that run inside of it and provide new or improved features, can expand its functionality.

CHAPTER 4

WORKFLOW OF PROJECT

First of all, I choose cosmetic items to modeling and product visualization. It's a long process. In every animation , I have to work on both post & pre production. It was not that easy. At the beginning , I made layouts , then scripts , do research about their color , environment, lights, render system.

After making layouts I tried to made my products according to the reference images. On the other hand , I tried to include something new in every model.

After all of these pre production work I started to work on post production. In post production , I design the models , give them proper texture and color, camera setting, lighting, simulations, particle system , animation, rendering process ,editing process, sound etc.

Now I will explain all of my works step by step in upcoming chapters. I will try to explain all steps in details.

4.1.1: PERFUME :

MODELS:

At first I took a reference image from google , which help me to making perfume model. Mainly ,I use blender for modelling this product .

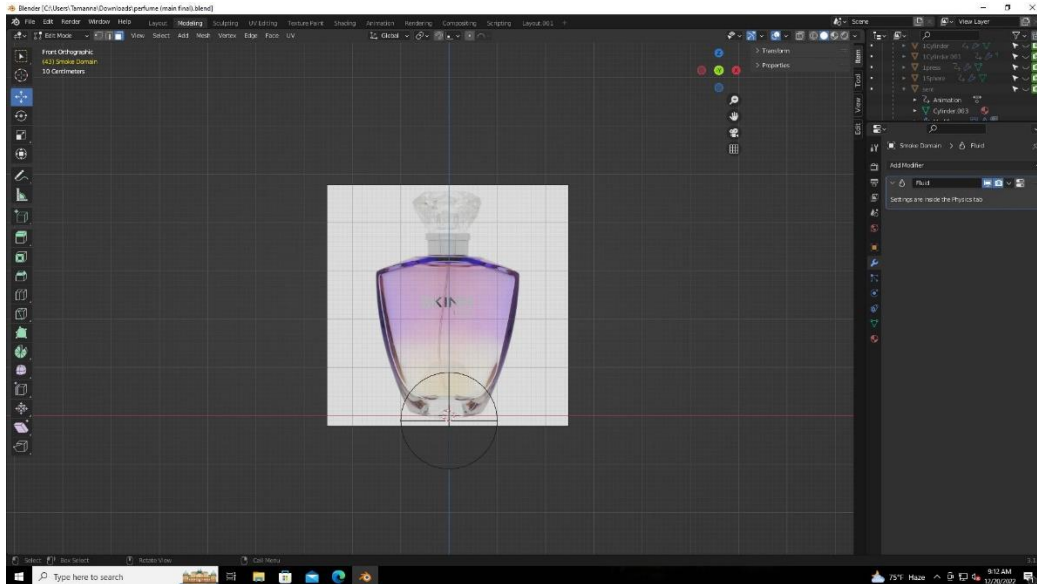


Figure 4.1.1: Perfume reference

I took a cube 1st then change object mood into edit mood. In edit mood, I exclude the edges of cube then use scale tool to give it proper shape. After making appropriate shape I use subdivision modifier to smooth my model, then also convert it into shade smooth. One of the difficult situations I faced when I was doing texture work. It was too tough to make real glass texture as like perfume bottle. Besides, I use solidify modifier for making it thinner.

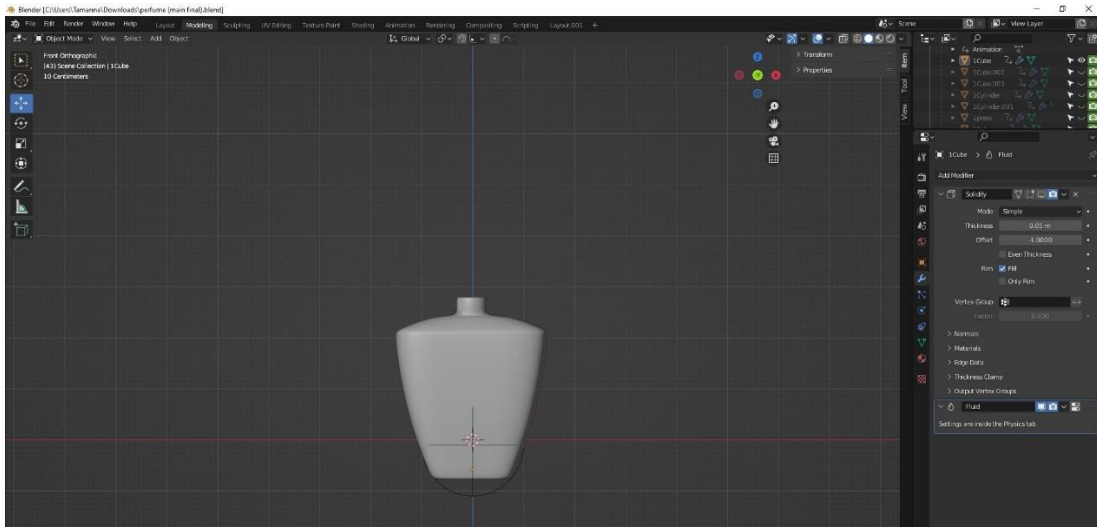


Figure 4.1.2 : Perfume bottol

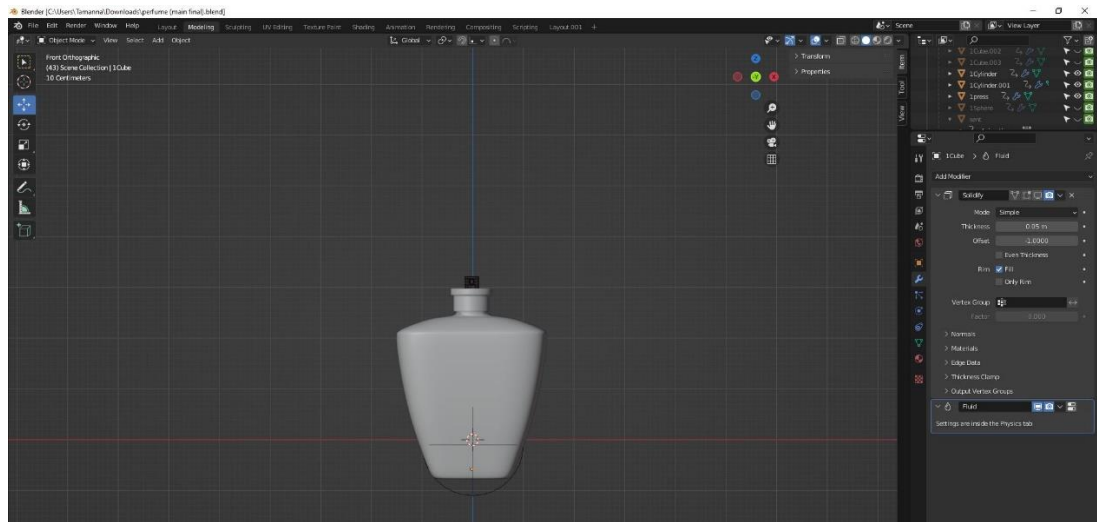


Figure 4.1.3 : Perfume cap

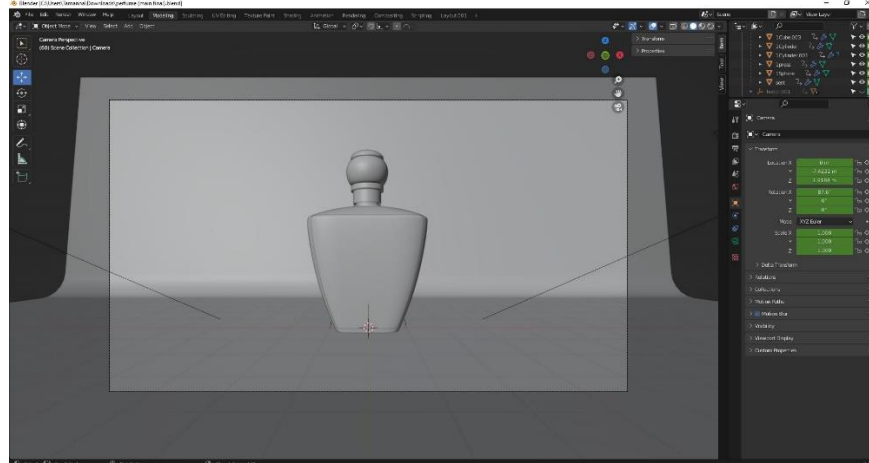


Figure 4.1.5 : Perfume & plane

As a floor, I took a plane object under the perfume bottle. Then I exclude it in z axis and choose 1 verticals to bevel. After bevel the vertical I moved to object mood and make it shade smooth.

Now come to the camera setting. Most significant part of animations. I took a camera and set it in y axis and rotate it according to my need.

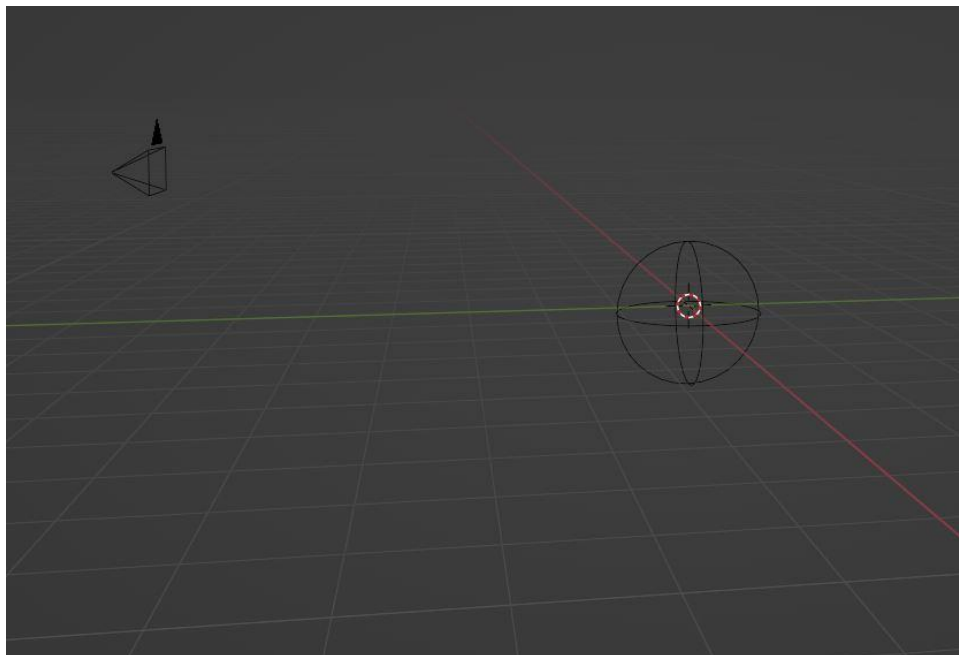


Figure 4.1.6: camera

Then , I took 2 area lights and 1 spot light. I increase area light size in x and y axis which are 1.98 cm and 6.98 cm. I also increase the light power in 800 wt. On the other side , in second area light I did not changed its size and its power is only 300 wt. Both lights are important for the animation. It creates the realistic environment. Thirdly, I used a spot light in y axis and rise the size and also increase the power. Basically , I used it for the animation purpose.

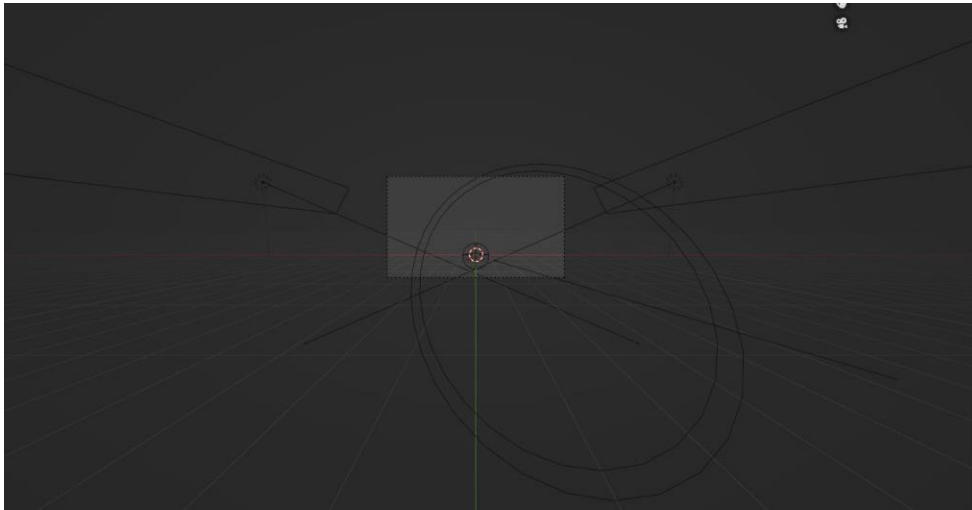


Figure 4.1.7: Tri light setting

Texture can make a model real. For this perfume, I choose glass material. Glass material making process was not that easy thing. At first , I took a node shade ,which contains white color as base color. Specular increased in 0.5, sheen tint increased in 0,5, transmission increased in 1 for glass affect and alpha decreased in 0.773. Next part is liquid effect making in inner side. Therefore , I took another cube for giving liquid texture. Then I select some faces and press shift + D for duplicate that portions and press P for separate that object. I used this portion for leveling the model.

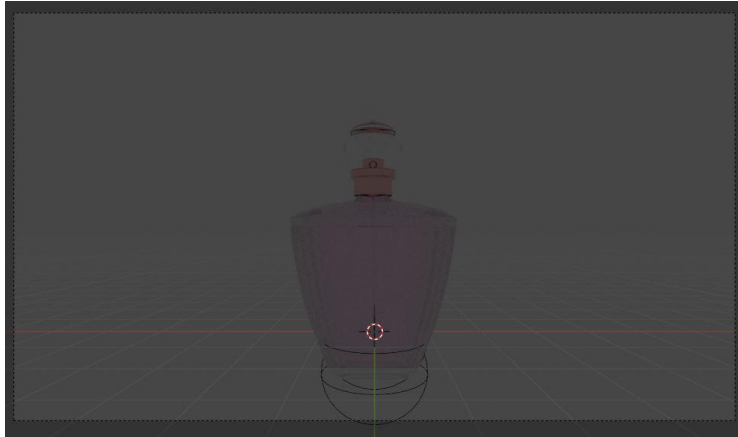


Figure 4.1.8: Perfume after texture

For logo design and leveling , I used adobe illustrator, for logo color I used black, yellow, white , used pen tool for design the logo. After that, I took this AI file into adobe Photoshop , modify the hue saturation ,brightness, colors and save it as PNG file.

Further process, I took the image and open with UV MAP . Firstly , choose the full object by press U and click unwrap. Then size the faces according to my need. After that , I moved to material , choose a material which base color was white, took Image map , choose the image which I made for leveling, convert repeat to extend and joined it to base color and also I joined alpha to principle BSDF alpha. For making more realistic, I used bump , increased the strength to 5 then joined bump normal to BSDF normal.

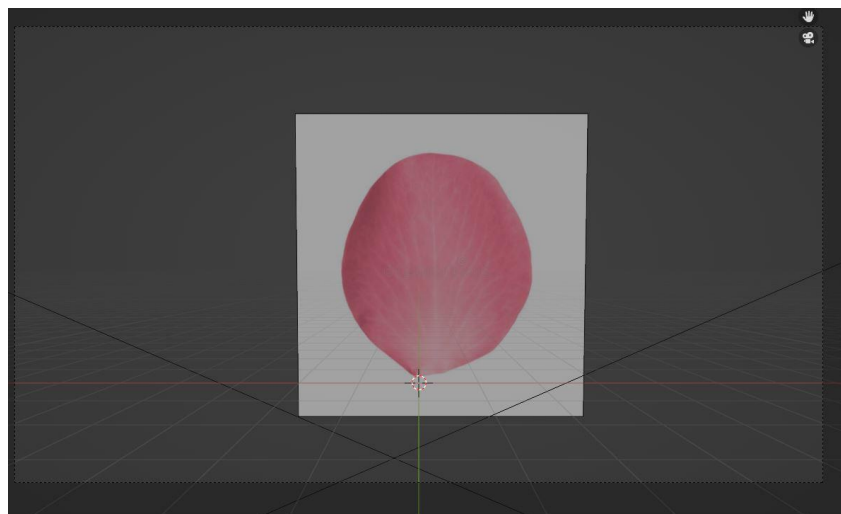


Figure 4.1.9: Petal reference

Secondly , I model a flower petal for creating particle system. I took a flower petal from google as a reference image. Then I took a circle and convert it into edit mood. Moreover , I modify the circle and give it shape like the reference. Subdivision modifier also applied for the smoothness of that petal.

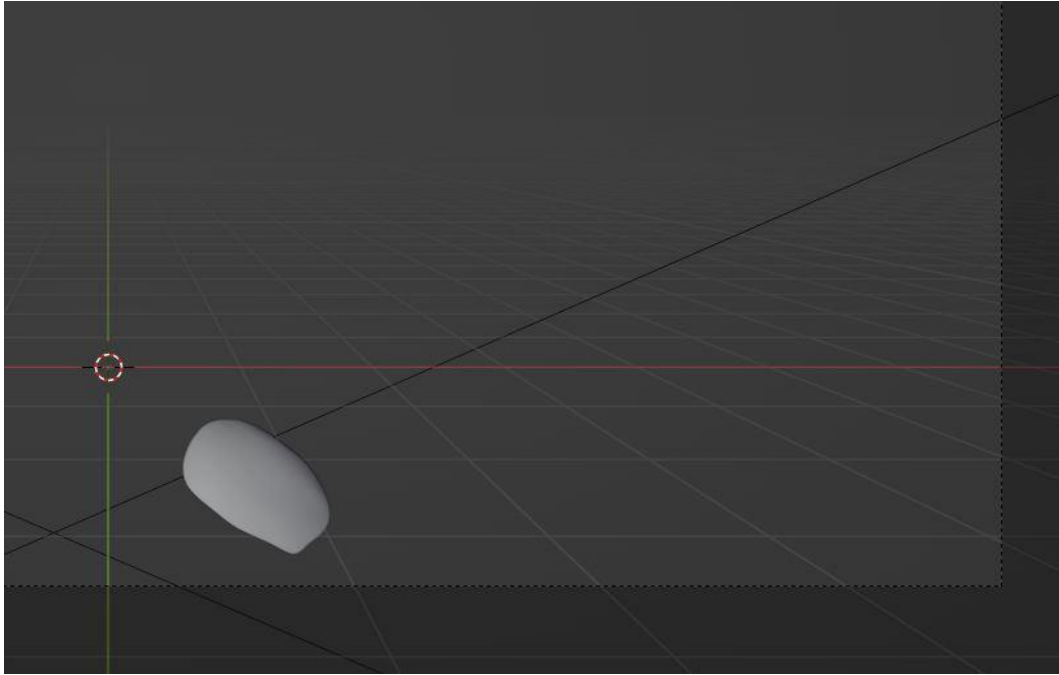


Figure 4.1.10: Petal

Furthermore, come to the texture part, for giving it realistic texture, I used principle BSDF , Image map, and RGB curve. In image map I used reference image , linked it into BSDF base color, image map alpha with the BSDF alpha and for color correction used RGB curves.

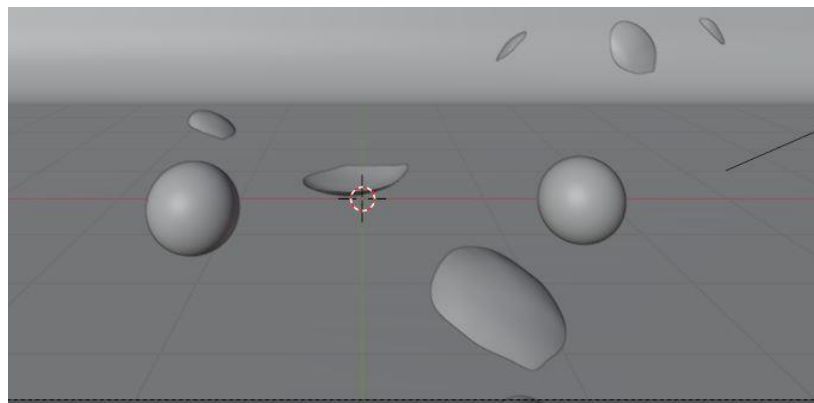


Figure 4.1.11: pearl

I designed a mirror for decoration purpose. I took a cylinder , convert it into edit mode, exclude in $-z$ axis to create a mirror shape . I also used subdivision modifier for smoothness.

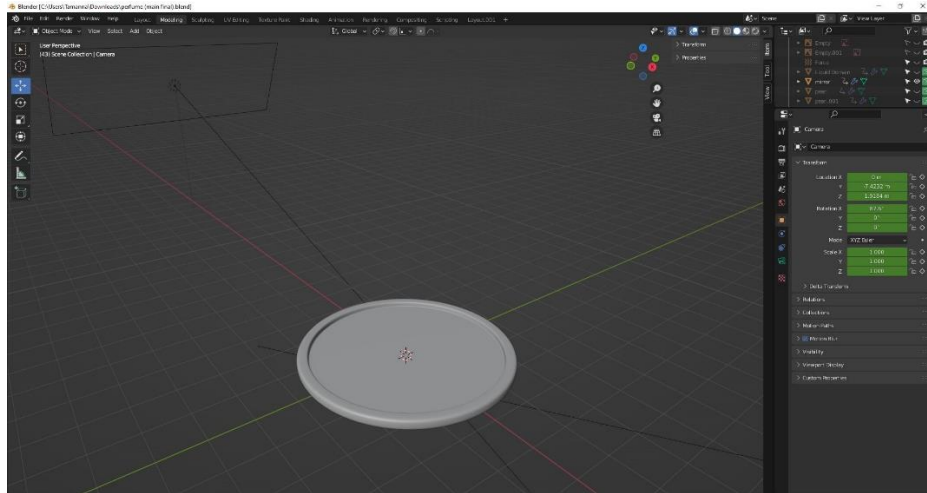


Figure 4.1.12 : Mirror

Mirror texture included two type of material shades. One was rose gold metal shade, second was mirror glass shade. For rose gold shade , I took BSDF node , increase material into 1 , increase Specular and roughness also. In base color I used baby pink color , that's why its reflect the rose gold color nicely. Next one, for glass texture again I used BSDF then Specular increased in 0.5, sheen tint increased in 0,5, transmission increased in 1 for glass affect and alpha in 1.

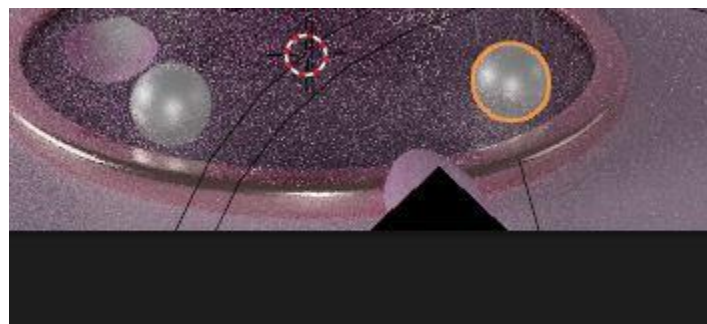


Figure 4.1.13 : Pearl , mirror, petal render output

Pearl model was also used for decoration purpose. Sphere was taken for making pearl , subdivision modifier was applied, also convert it into shade smooth.

For texture , BSDF principle was taken first , metallic increased in 1, specular increased in 0.150 , roughness in 0.450, sheen in 0.250, sheen tint in 1, clear coat in 1, clear coat roughness in 0.100.

Then took a mixed shader and increased factor in 0,800. Color ramp, Hue saturation, noise texture, mapping, texture coordinator also used for this pearl texture.

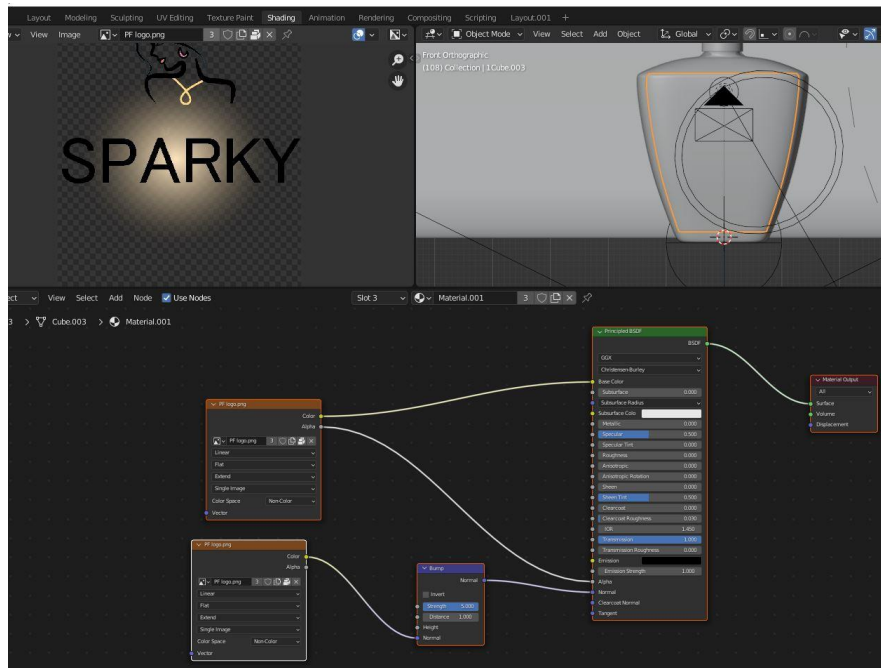


Figure 4.1.14 : level design

ANIMATION PART:

- First of all , I start the intro by falling a flower petal, the flower petal fall in z axis , for falling the petal I used 1 to 25 key frames.



Figure 4.1.15 : ani part 1

- After falling the petal , in 26 frames in used particle system which creates more similar petals and spread all over . From 26 to 63 frames used for this animation. In particle system , I used emitter, set the number in 50 ,lifetime 36,in source emit from set in faces, distribution in jittered, check in random order and even distribution , jittering amount in 1. Check in the rotation , orientation axics in velocity , randomize in 0.193, phase in 0.052, randomize phas 0.417. Besides, change the physics in fluid , buoyancy in 0.490 and damp in 0.151 which belongs to forces. Gravity convert into 0 and render object choose the petals , scale it according to my need.



Figure 4.1.16 : ani part 2

- Finishing the petal part , I started the smoke sequence. In smoke sequence, I took a sphere and a cube .I used sphere as smoke object by convert it into smoke by quick smoke effect. Then I used cube as smoke domain , which control the smoke size. I used 43 to 78 key frames for smoke animation. Fluid was used in smoke object converting into inflow. Density increased in 1, surface emission 1.13,check in the initial velocity. In smoke domain convert it into gas, increased the resolution in 128. After all of these , bake the all frames.



Figure 4.1.17 : ani part 3

- Fluid Morphing is used for liquid simulation. It convert the perfume into liquid water. In time scale set it into 0.5, check in the use adaptive and liquid , simulation into flip and check in the mesh. I used 80 to 170 key frames for fluid morphing. Lastly , bake the all key frames.



Figure 4.1.18 : ani part 4



Figure 4.1.19 : ani part 4.1

- Turn the perfume bottle , open up the cap. I used press to particle system .For particle system , sphere used as particles. Set the object name as sent. I used this part for particle system. 171 to 178 was used in movement of perfume and 179 to 245 key frames. Texture has given to the particles , I used pink water color to the particles.



Figure 4.1.20 : ani part 5



Figure 4.1.21 : ani part 5.1

- Spot light and camera were used for next animation sequence, 246 to 300 key frames were used for this . I used a spot light to create reflection on the mirror, then camera for movement . camera movement showed in z axis. It flow in x axis.



Figure 4.1.22 : ani part 6



Figure 4.1.23 : ani part 6.1

- By using shift+D , I duplicate the perfume 2 times. Now it's the time for last animation sequence , which is about position. I moved one perfume in x axis and other one moved in -x axis. It took 301 to 374 key frames.



Figure 4.1.23 : ani part 7

RENDER & EDITING:

- I used cycle mode for render , sample was not maximum more then 500. Resolution was good enough on the other hand I check in the denoiser for remove all noise from the video. Then I select fflim ,choose a folder for render video. After that, render took almost 6 hours. End of this render , I got mkv file , which I converted into mp4 file in video converter.
- Lastly , I used premiere pro for editing the video and add sound. In editing purpose, I used many effects to display the video beautifully. I slowed the video somewhere then reverse the video in middle. After that I made some color correction. Then I used a smooth sound which was suitable for my animation video.

4.1.2: FACE SERUM :

MODELS:

At the beginning, I took a reference image from website , I used it for making serum model.

First of all, I took a cylinder , size it by scale tool according to my need , cut it into several edges by loop cut, apply the subdivision modifier for smoothness.

Next part is cap, again I used a cylinder , then convert into edit mood, select the faces in z axis and delete it by press X. Besides, make a hole on the top ,after that apply solidify for make thinner and subdivision surface modifier.

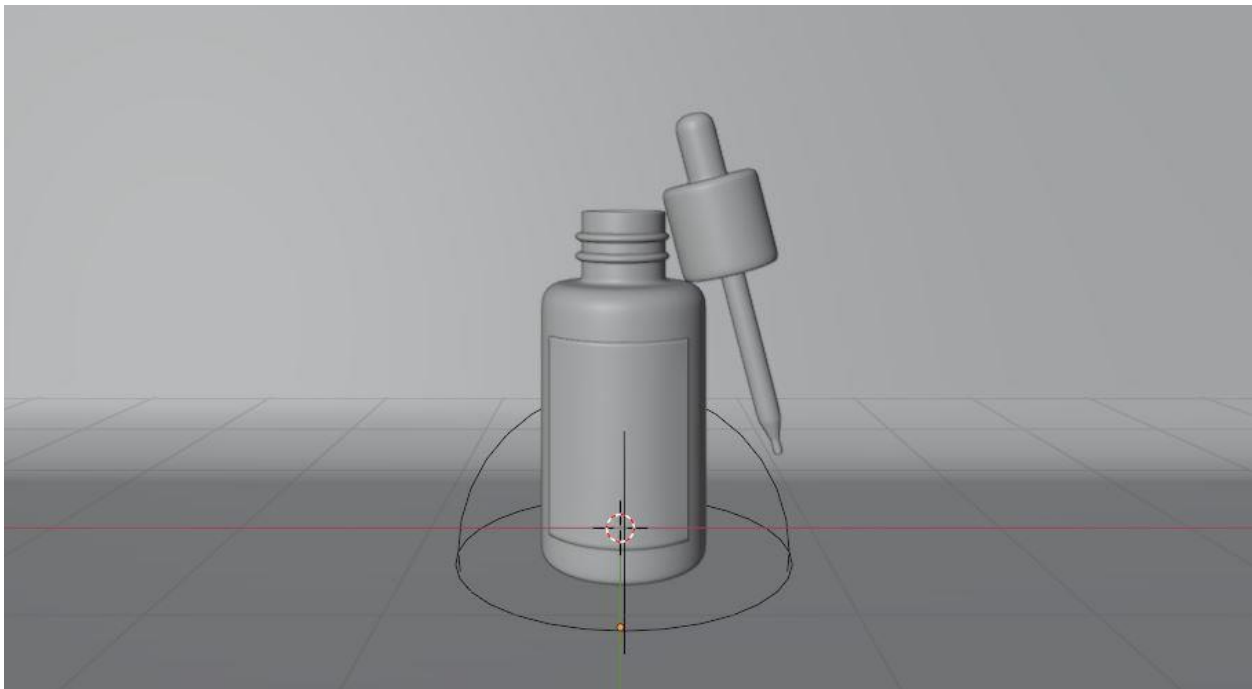


Figure 5.1.1 : serum bottol

Press tube is the top part of the serum bottle, another cylinder was used for this press tube and moved to the edit section , select the edges to make a curve shape , convert it into shade smooth, and subdivision modifier will be also applied.

Then , tube is another part of press tube , I created this by cylinder. I took this cylinder and convert it into edit mode. I increased edges and modify it as a tube.



Figure 5.1.2 : serum tube

By pressing shift + D , I have copy the bottle for making liquid serum. I removed the faces of z axis to modify the shape. Then came to the texture part. I used principle BSDF, as a base color I took white color, increased the metallic in 0.068,specular in 1, and sheen tint in 0.500. I made it as like white serum liquid.

One cylinder was taken for making cap of serum. I modify it in edit mood and applied subdivision surface. For the texture , increased the metallic into 1, specular in 0.500. roughness in 0.200.

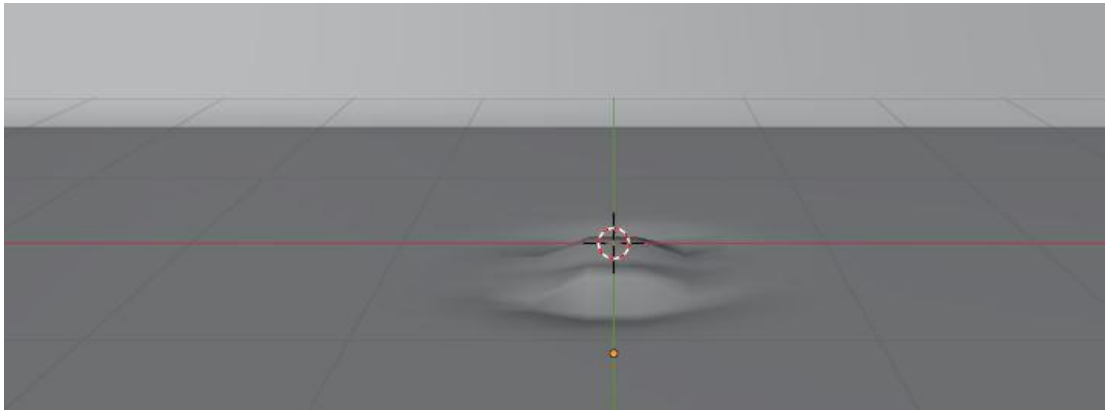


Figure 5.1.3 : water surface

Last but not the least, for the leveling of bottle I copied some faces. I pressed Ctrl P and click on separate by object. After that , It become a separate object. In transformation option, creased was increased in 1 and make it vertically and horizontally straight.

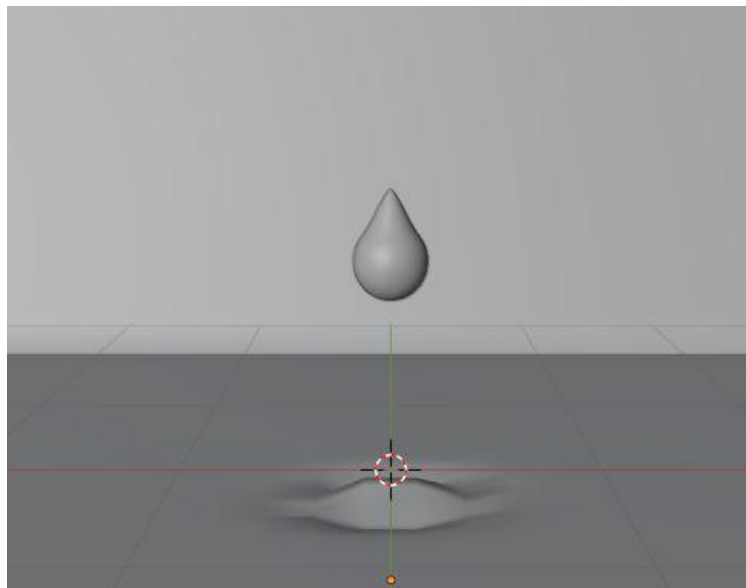


Figure 5.1.4 : water surface

Now came to the texture , firstly I design the level in adobe illustrator then edit it on photoshop. I took principle BSDF and base color was pink, I also took a image map ,in image map I insert the image which I edited in illustrator. Link up the alpha and color from image map to BSDF base color and alpha and also use the bump ,increased the strength in 5 and connected to normal in BDSF.

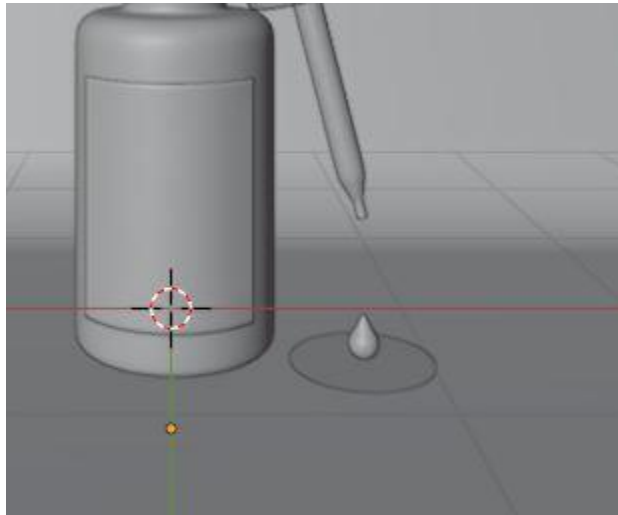


Figure 5.1.5 : circle ,drop

Torus used for serum design. I took two torus and convert in into shade smooth. Same texture was used in torus which I used in serum bottle.

Sphere was taken for making water drop. Converted the sphere in edit mood and modify it. Then use shade smooth and applied subdivision surface modifier. In texture , I used BDSF , sky blue color as base, subsurface IOR in 1.4 , specular in 1, transmission in 1, and alpha in 0.540.

I used another sphere for serum drop , I modify it similar way as water drop. For texture , I used same texture which I use in tube and press tube.

Circle was taken for liquid effect. First of all I took circle and increased the vertex points, convert it into edit mood , press ctrl F and fill it up, shade smooth was also applied. Used the same texture as the serum drop.

For floor, I took a plane object under the serum bottle. Then I exclude it in z axis and choose 1 verticals to bevel. After bevel the vertical I moved to object mood and make it shade smooth. In texture I used BSDF and yellow color as base color.

Now come to the camera setting. Most significant part of animations. I took a camera and set it in y axis and rotate it according to my need.

Then , I took 2 area lights. I increase area light size in x and y axis which are 1.98 cm and 6.98 cm. I also increase the light power in 800 wt. On the other side , in second area light I did not changed its size and its power is only 300 wt. Both lights are important for the animation. It creates the realistic environment.

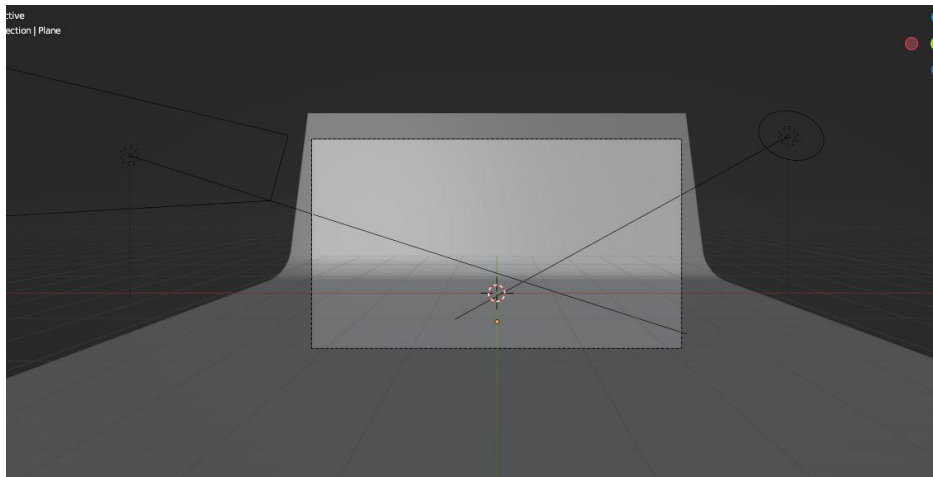


Figure 5.1.6 : light & surface

ANIMATION PART:

- Water drop falling is the first part of the animation. I took plane as water surface . For making water surface, firstly, dynamic paint was used, key frame started from 1 and ended in 70, dynamic type was canvas. Scale influence increased in 1 and also radius in 1.



Figure 5.1.7 : ani part 1

- Water drop animation started from 1 and finished it on 26 frames. Dynamic paint type was brush, alpha increased in 1 and wetness increased in 1. Check in the absolute alpha section.
- After that , bottle was fall into the water again. Key frames were started 40 and end up in 65 frames. I will reverse this frames after render. Render button animation was created from 65 to 70 key frames. In 71 frames ,I turned off the render button and make this animation.



Figure 5.1.8 : ani part 2

- I took another sphere for particle system. In particle system , the number of particles is 3000 , lifetime is 7, lifetime randomness is 1,jittering amount is 1. 72 to 102 key frames were used for this animation. Check in the rotation button, randomize in 0.118,phase is 0.047. then I used the fluid. Select the type flow in fluid, flow type is smoke, flow behavior, check in the use flow , sampling sub steps is 2, density is 10,000 , make the flow source to particle system, check in the set size , size is 3.95, check in the initial velocity, amount of source is 0.5.



Figure 5.1.9 : ani part 3

- Now, a cube is used for fluid domain. The domain type is gas, resolution division is 64, time scale is 1, cfl number 4, key frames are 71 to 102 and last of bake all of this. Smoke texture is white and pink.
- During this smoke session, another important thing is happening. I rotate the serum bottle from 80 to 102 key frames in z axis at 360 degree.



Figure 5.1.10 : ani part 4

- In 102 frame , I have change the location of cap, tube , press tube , and tube 01 in different axis. Now come to the last part , a drop of serum is fall down, this seen is animated in 102 to 125 key frames. Lastly , the drop is transform in plain circle in the surface.



Figure 5.1.11 : ani part 5

RENDER & EDITING:

- I used cycle mode for render , sample was not maximum more then 500. Resolution was good enough on the other hand I check in the denoiser for remove all noise from the video. Then I select fflim ,choose a folder for render video. After that, render took almost 6 hours. End of this render , I got mkv file , which I converted into mp4 file in video converter.
- Lastly , I used premiere pro for editing the video and add sound. In editing purpose, I used many effects to display the video beautifully. I slowed the video somewhere then reverse the video in middle. After that I made some color correction. Then I used a smooth sound which was suitable for my animation video.

4.1.3: BODY WASH :

MODELS:

To commence with the models, firstly I create a bottle by using a cylinder. After taking the cylinder I scale it according to my need, convert it into edit mood. In edit mood , I modify the edges of the bottle , bevel the upper and lower portion. Then I went back to the object mood and apply subdivision modifier and shade smooth. As a result , this bottle become smooth in texture.

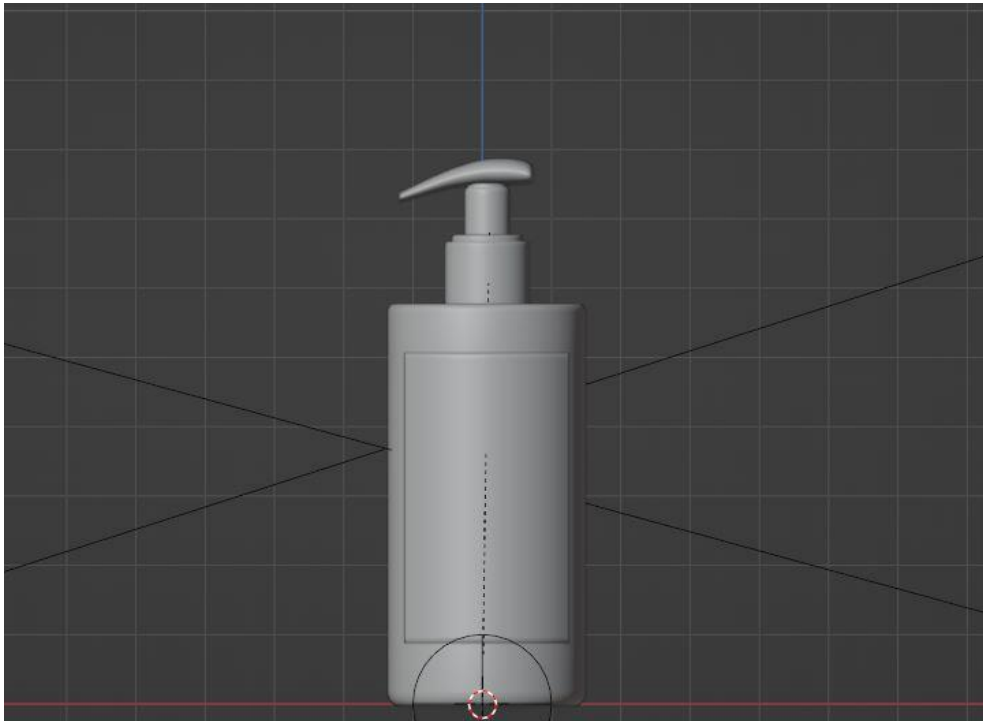


Figure 6.1.1 : body wash bottle

After that , Its time for texture. In texture, I use principle BSDF, light yellow color used as base color, specular increase in 1, sheen tint in 0.500. It became glass material.

Another cylinder used for cap . I take it on edit mood, deleted the faces of upper and lower portion , choose the upper vertex by pressing Alt and select, exclude the select part according to my need, use the loop cuts and bevel too , coming back to the object mood and apply the subdivision surface and smooth the shade.

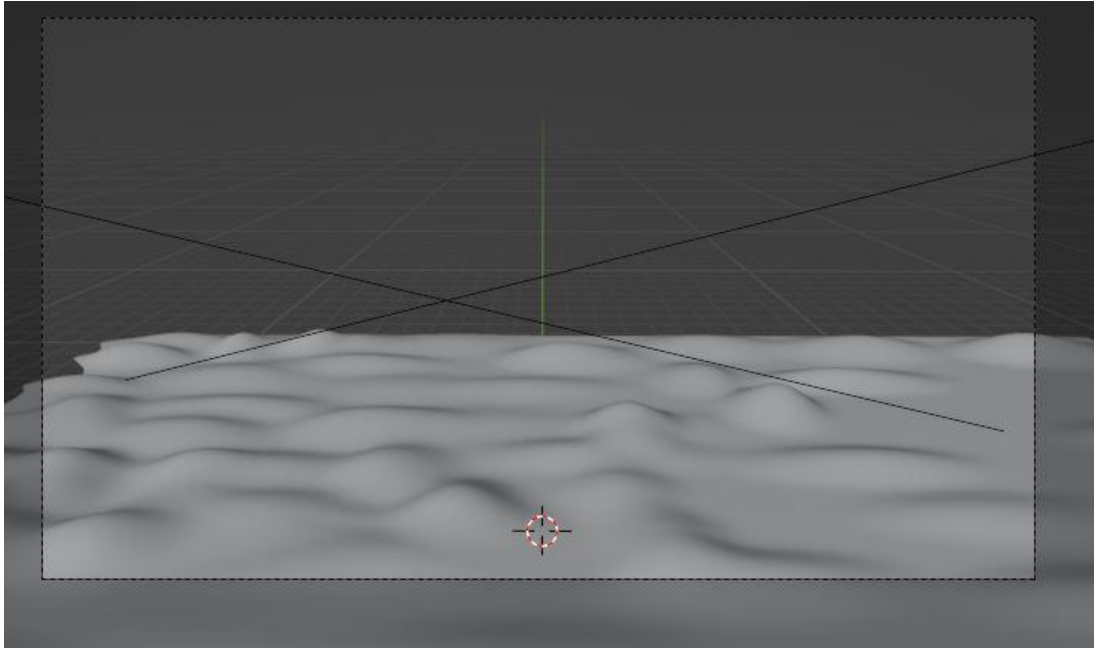


Figure 6.1.2 : foam surface

Moreover , I have to texture this bottle . In texture, I use principle BSDF, black color used as base color, specular increase in 1, sheen tint in 0.500. It became glass material.

Now , I create the press model in higher portion. For this, I take a cube , then apply subdivision surface, convert it into edit mood , select the edges and drag it by exclude option , move in x , y, z axis according to need , after that select the edges and scale it for getting the perfect size. Shade it smooth again for better texture.

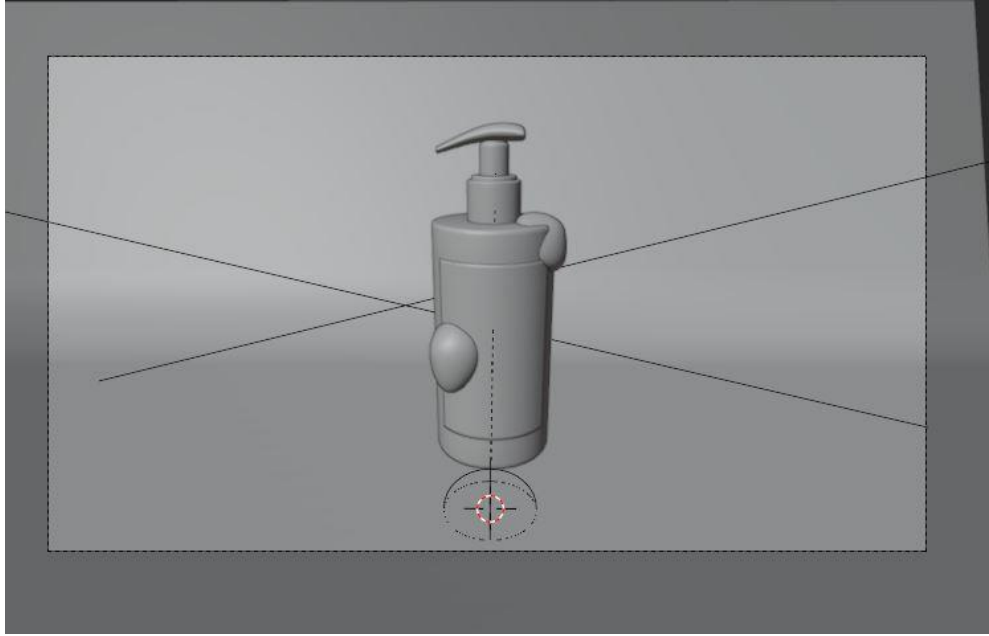


Figure 6.1.3 : foam

Besides , I have to texture this bottle . In texture, I use principle BSDF, black color used as base color, specular increase in 1, sheen tint in 0.500. It became glass material.

It's time for leveling the bottle. I have create a sticker for body wash in illustrator and photoshop. I take reference image from google. Then design it as the reference by using square shape, pen tool , text tool ,back ground color etc. I use photoshop for edit this image , increase brightness, correction the color. After all of this , I press Shift +D to copy some edges of the bottle and press ctrl p then separate it. In transform option , I increase the crease in 1.

Furthermore, let's start the texture . For texture, again I use principle BSDF, as a base color white color is used, I take a image map then insert the image which I have created, take a bump effect to make this more realistic.

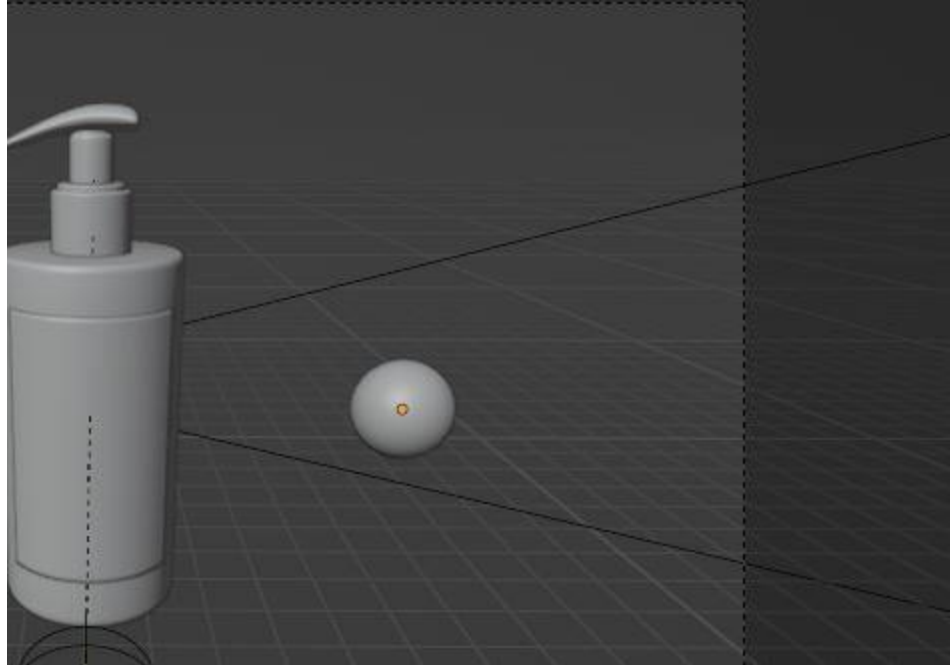


Figure 6.1.4 : bubbles

I take sphere for making soap bubbles. Firstly , convert the sphere into edit mood , then select edges to modify the shape, again come to the object mood , apply the subdivision surface, lastly shade smooth is applied.

For texture, I use a BSDF , white color as base color , take a hue saturation factor in 1, noise texture map also, transparent BSDF color white, layer weight map, mix shader use to connect all shade then make link with material output.

After that, it's time for foam making process . I take two spheres for this foam effect. Convert the sphere into edit mood, by the proportional tool modify the sphere as soap foam, apply the subdivision surface modifier and increase the viewpoint in 4, then go to the object mood again and apply shade smooth.

Moreover for texture, I use a BSDF , white color as base color , then take the image map and insert a picture of foam which I downloaded from goggle, also take bump map and increase the strength.

Furthermore, I make a foam surface too , I make it by the help of plane , proportional tool , subdivision modifier , shade smooth . lastly I apply the same texture which I apply on the foam.

At the end , I take another sphere for soap drop effect. I modify it through the edit mood, then I started to redesign the edges of the sphere. After all of this, I used some modifier and convert it into shade smooth.

ANIMATION PART:

- At the beginning , I create the bubbles animation. For this animation , I took 1 to 70 key frames for this. In this animation process I use particle system. Firstly , I take a sphere which modify into a bubbles. Number of bubbles are 50 , lifetime 150, velocity convert into -1, scale down the size of bubbles according to my need, check in the rotation button. From the key frame 1 bubbles started to flow in all around the environment.



Figure 6.1.5 : ani part 1

- I work on material alpha and create animation on it . in 71 frame I decrease the alpha in 0 and 95 frame I increase the alpha in 1. By all of the key frames , color opacity is animated.
- Moreover, camera movement is animated from 96 to 130 frames. I animate the focal length of camera , scaling up and down in x and y axis. Firstly , camera stay in lower y axis then slowly move it on higher part and decrease the focal length then showing the full product model.



Figure 6.1.6 : ani part 2



Figure 6.1.7 : ani part 2.1

- By shift + D command , I copy the body wash and create two new bodywash. From 131 to 220 frames are uses for this animation. One of the model move in x axis and another model comes out from -x axis, which animated in these keyframes.



Figure 6.1.8 : ani part 3

- Besides , foam surface animate between 221 and 250 keyframes. This foam plane move to x axis to -x axis.



Figure 6.1.9 : ani part 4

- After that , I use particle system, sphere is modify as water drop . In particle system I choose water drop as object , scale it according to my need, check in the rotation button, number of drops are 80 . I take body wash bottle and cap for particle. Increase velocity , gravity in 1. From 251 to 320 key frames are used for this animation.



Figure 6.1.10 : ani part 5

- Lastly ,I will animate the cap to fall the soap. The cap is going down to -z axis then coming up to z axis.In the meantime, the soap drop is falling in z axis. Total animation have been done between 321 and 400 keyframes.

RENDER & EDITING:

- I used cycle mode for render , sample was not maximum more then 50. Resolution was good enough on the other hand I check in the denoiser for remove all noise from the video. Then I select F flim ,choose a folder for render video. After that, render took almost 6 hours. End of this render , I got mkv file , which I converted into mp4 file in video converter.
- Lastly , I used premiere pro for editing the video and add sound. In editing purpose, I used many effects to display the video beautifully.After that I made some color correction. Then I used a smooth sound which was suitable for my animation video.

4.1.4: CREAM :

MODELS:

First of all, I take a reference image from goggle. Then import it into blender interface. After that , I take a cylinder for this model, convert this cylinder into edit mood. Select the edges and exclude it, use the proportional tool to design it. After that , I use surface subdivision to increase edges and make it smooth and I also applied smooth for final output.



Figure 7.1.1 : cream

Moreover , I make the cap by using another cylinder. Choose edges and exclude it in y axis then make it smooth by using subdivision surface.

I am using plane for making a surface , took a plane then convert it into edit mood. Select edges and exclude it in z axis after that use bevel for modify it as like a cap.

Now its time for texture , I use peach color for this cream body. Firstly , use a principle BSDF then took peach color as base color, Specular increase in 1, sheen tint increased in 0.9, roughness in 0 due to smooth texture and alpha in 1.

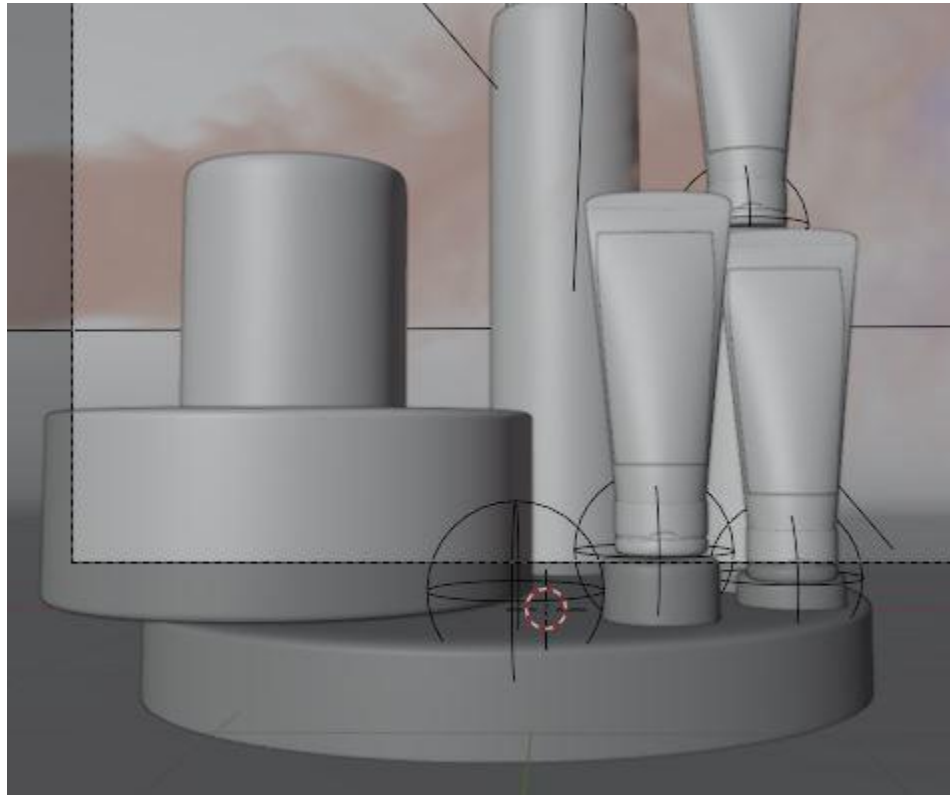


Figure 7.1.2 : cylinder

Next part is cap texture , for this I also BSDF then took brown color as base color , specular in 0.8 , roughness in 0.5 because of matte texture.

For lighting I use 3 area light . increase area light size in x and y axis which are 1.98 cm and 6.98 cm. I also increase the light power in 1000 wt. On the other side , in second area light I did not changed its size and its power is only 800 wt. 3rd light installed in z axis in same size and power is 1000 wt. Both lights are important for the animation.

All lights color is white due to focus the product.

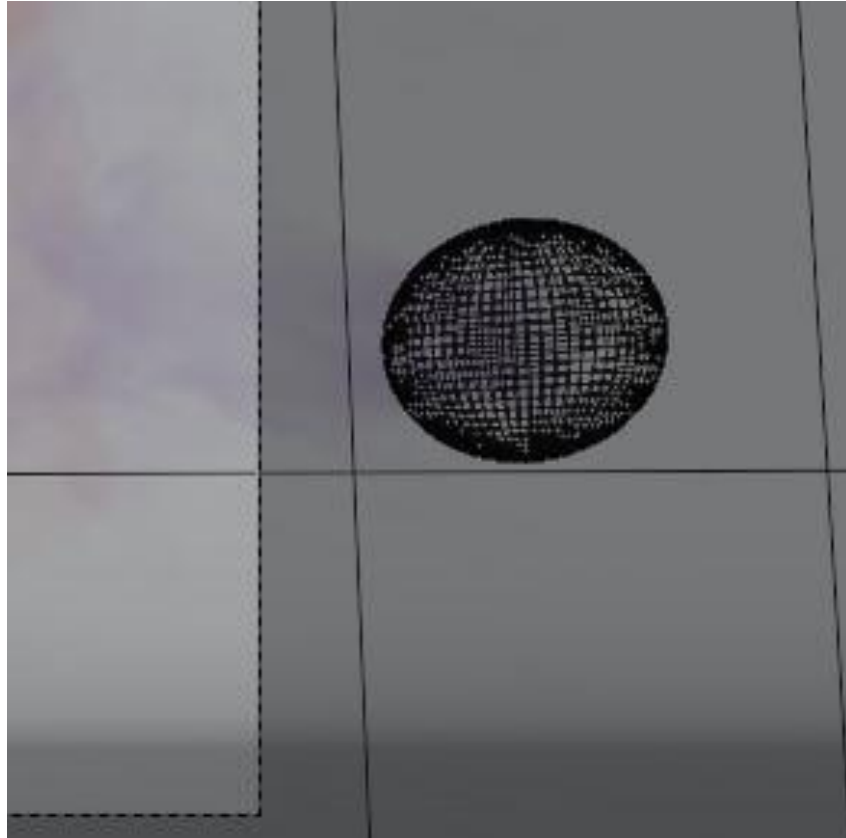


Figure 7.1.3 : smoke object

One of the most important things is camera. Which is on $-z$ axis . I increase the focus length according to the scene need and move it on x axis and z axis.

I use two sphere for smoke effect . normally I took two sphere and make smooth.

Now come to the another portion ,I use 8 cylinder for animation. Convert it into edit mood and bevel the edges for smoothness and apply subdivision surface .

Last but not the least , I copy the cream by pressing Shift + D. I create eight more creams for animation.

ANIMATION PART:

- First of all, I use two sphere for smoke animation. In x axis I use 1st sphere and use fluid , quick smoke effect. In fluid I convert it in smoke then took a cube then convert it into domain. From 1 to 50 key frames used for smoke animation. I pick sky blue color for smoke. 2nd sphere use in $-x$ axis which smoke come from opposite direction.



Figure 7.1.4 : ani part 1

- Between 51 to 120 frames used for cream animation. i took 3 creams for this part. I move them to $-z$ axis which is animated individually to z axis. They come to upward in different position then animate it into key frames. I maintain the time line of those three cream due to good sequence.



Figure 7.1.5 : ani part 2

- Now come to cylinder animation part . which is one of the most important part. I took 8 cylinder for animation . all are in $-z$ axis they come from $-z$ axis to z axis gradually. After that all cylinder will stay in this surface. I use 121 to 250 keyframes for this animation.

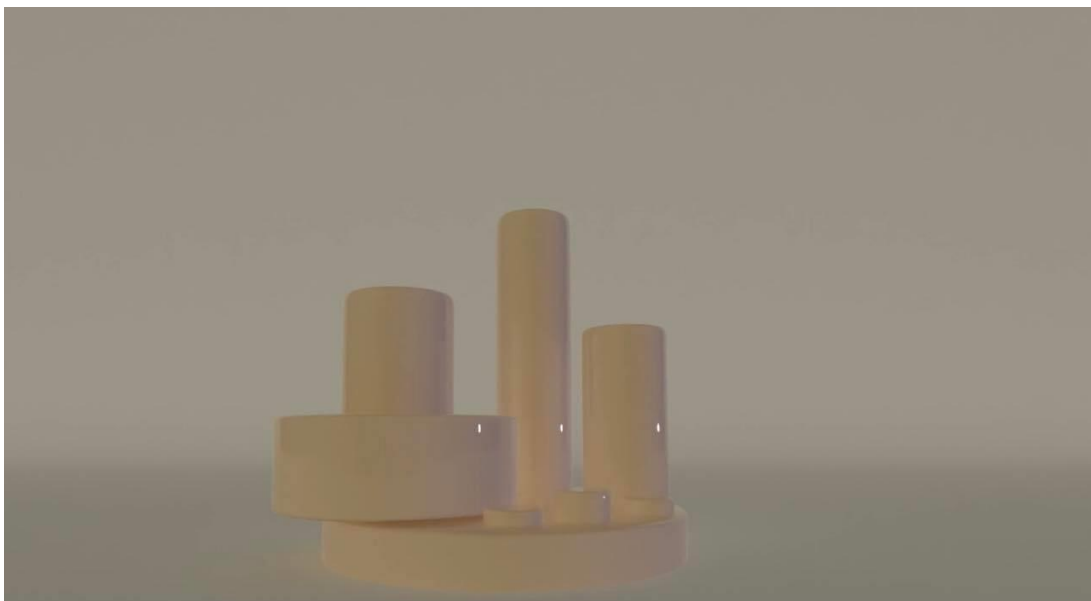


Figure 7.1.6 : ani part 3

- After that , I use 8 cream with this cylinder because I want to animate this. Creams are in z axis which will come to downwards between the animation. from 251 to 350 keyframes are used for this part. For some creams I use rotation which is in z axis in 0 to 360 degree. Some creams were moving into the cylinder too.



Figure 7.1.7 : ani part 4

- Lastly, I do the camera animation in 351 to 390 key frames. I increase the camera focus length and take it near to the product. I move this camera in $-x$ axis to x axis and $-z$ axis to z axis. Then come to the top cream animation , which is rotated into the top .



Figure 7.1.8 : ani part 5

RENDER & EDITING:

- I used cycle mode for render, sample was not maximum more than 50. Resolution was good enough on the other hand I check in the denoiser for remove all noise from the video. Then I select F film ,choose a folder for render video. After that, render took almost 6 hours. End of this render , I got mkv file , which I converted into mp4 file in video converter.
- Lastly , I used premiere pro for editing the video and add sound. In editing purpose, I used many effects to display the video beautifully. After that I made some color correction. Then I used a smooth sound which was suitable for my animation video.

CHAPTER 6

GRAPHICS WORK

I did some graphics work also for face book add run. I did those work by using illustrator and photo shop. I took some reference image then generate own idea and implement these things into illustrator. I choose some meaning full color along with that I took client opinion when I was designing these posters. Though I am passionate with 3d modeling and animation however I also love to do that kind of creative work. I always try to keep simplicity on my design which attract the consumers. I used illustrator for every poster design moreover I took google reference then I edit them more in photoshop. The color combination , designs idea was totally mine .



Figure 8.1.1 : poster 1



Figure 8.1.2 : poster 2



Figure 8.1.3 : poster 3



Figure 8.1.4 : poster 4

CHAPTER 7

3D MODELS

Here I also did some more models which I did by using blender. I took reference images from google then create it on blender. I give them proper texture , color, shape as like as the real one.



Figure 9.1.1 : model 1



Figure 9.1.2 : model 2



Figure 9.1.3 : model 3

CHAPTER 8

LIMITATIONS AND CHALLENGES

Limitations:

Everything has limits which we can not cross. Because of I was doing internship that is why I have to face many limitation. I was working into a team so I have to follow several rules which was not that easy staff. I have to do every work according to clients need. Sometimes I feel it was not so appropriate but nothing to do I have agree with that . after that , I have to follow time limits as well. Then time management was the biggest hard part where I faced difficulty. But I accept all the tough things and do all the work properly.

Challenges:

In every kind of work we have to face challenges. One of the biggest challenge I faced which was completed every requirement of client and finished all the task on time. Managing the time was not that easy. I have to give so much time to every project so I have to spend much time with pc which was very hard for me. On the other hand daily journey and the massive change off client mood was not that easy task. After overcome from all difficulties I get success in this internship.

CHAPTER 9

CONCLUSION

3D product visualization is recently on trend. Every company wants to advertise their product in best way which can make their customer more interested about their product.

Nowadays most of the company prefer 3d product commercial video rather than still image. Though It is not an easy task , because of you have to create the same product as like as the real one. To match the texture as the real one is not that easy task. I face many difficulties when I was doing the texturing part and lighting part. We all work in a team for these commercial. For the consumers we have to face many challenges to fulfill their requirement.

Mainly R&B work for 2d but recently started the 3d journey. We have a nice team for 3d work where we individually do the render work, texture work, modeling work , animation , key frame work.

It was not easy for me to deal with it alone. But I become successful with the help of my team mate and my supervisor. I think day by day most of the people will be relay on 3d product visualization because it is one of the best way of marketing. So, the working range of product visualizer will be increase gradually.

CHAPTER 10

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Internship at R&B Creative Studio on 3D product visualization & Graphics BY Sharia Hossain Tamanna ID: 191-40-571 This report presented in Partial Fulfilment of the Requirements for this the Degree of Bachelor of Science in Multimedia and Creative Technology Supervised By Mr. Arif Ahmed Associate Professor Department of MCT Daffodil International University DAFFODIL INTERNATIONAL UNIVERSITY DHAKA, BANGLADESH ©Daffodil International University APPROVAL This project titled " Internship at R&B Creative Studio on product visualization ", submitted by Sharia Hossain tamanna to the Department of Multimedia and Creative Technology, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Multimedia and Creative Technology and approved as to its style and contents. The presentation was held on BOARD OF EXAMINERS Dr. Shaikh Muhammad Allayear Professor & Head Department of Multimedia and Creative Technology Faculty of Science & Information Technology Daffodil International university Chairman Arif Ahmed Associate professor Department of Multimedia and Creative Technology Faculty of Science & Information Technology Daffodil International university Internal Examiner Dr. Md. Samaun Hasan Assistant Professor Department of Multimedia and Creative Technology Faculty of Science & Information Technology Daffodil International university Internal Examiner Dr. Mohammad Zahidur Rahman Professor Department of Computer Science and Engineering Jahangirnagar University External Examiner ©Daffodil International University i DECLARATION I, at this moment, declare that I have done this project under the supervision of MR Arif Ahmed, Associate Professor, Department of MCT Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere to award any degree or diploma. Supervised by: Mr. Arif Ahmed Associate Professor Department of MCT Daffodil International University Submitted by: Sharia Hossain Tamanna ID: 191-40-571 Department of MCT Daffodil International University ii ACKNOWLEDGEMENT First, I express my heartiest thanks and gratefulness to Almighty God for His divine blessing in making us possible to complete the final year project/internship successfully. I am grateful and wish our profound indebtedness to Mr. Arif Ahmed, Associate Professor, Department of MCT Daffodil International University, Dhaka. Deep knowledge & keen interest of our supervisor in the field of " " to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior drafts, and correcting them have made it possible to complete this project. I would like to express my heartiest gratitude to MD Salah Uddin, Head, Department of MCT, for his kind help to finish our project and also to other faculty member and the staff of MCT department of Daffodil International University. I would like to thank my entire course mate in Daffodil International University, who took part in this discuss while completing the course work. Finally, I must acknowledge with due respect the constant support and patients of my parents. ©Daffodil International University iii ABSTRACT As part of a structured program, an organization may provide an internship to potential employees. Through an internship, students can expand their acquisition of knowledge and theoretical abilities. The educational advisor of a student could on occasion set up internships for his students. Future professional growth in this area is strongly advised. In addition to the specialized skills in a given sector, an internship teaches students adaptable skills like teamwork, communication, and IT proficiency. This internship's primary goal is to learn about 3D animation , 3D product visualization, texturing, rendering, professional work processes, client psychology, and how to operate in the market. Etc. And I'm getting better and better at 3D modeling. I've learned a lot about rendering, texturing, leveling and 3D modeling. In the previous four months, I finished several 3D models. and receive positive comments from the R & B Creative studio. I now feel secure using the Autodesk 3Ds Max software to create any models. iv TABLE OF CONTENTS

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ix CHAPTER 1 INTRODUCTION Utilizing illustrations, artwork, and renderings to visually describe your products to buyers is known as product visualization. These days, a lot of businesses accomplish this by integrating graphic product configuration software into their e-commerce websites. Customers can use this method to view a picture or depiction of the product as they complete their online orders. For this purpose, we use several software to design our products. 3d animation is the one of best way to portray any type of product. Most of the product visualizer use 3DS MAX, MAYA, BLENDER, REALFLOW etc software for animation. Now come to the [dynamic simulation. An advanced activity that integrates environment design, operation, and control](#) is dynamic simulation. Modeling and software technology are substantially more demanding than steady-state simulation. It can be use for creating realistic smoke, liquid object, water etc. Moreover, A particle system is a tool being used computer graphics, motion graphics, and video games to simulate certain "vague" concepts that are otherwise very difficult to reproduce with traditional rendering methodologies. It's one kind of way which help us to create water drops, hair and many others staffs. In my project, I use all kind of way to made my products realistic like as, I use good texture, color, reference images and so on. In reverse, for creating animation, I use particle system, dynamic simulation, force field, flip fluid etc. I will discuss all details in upcoming chapters.

CHAPTER 2 CASE STUDY It was not that easy to choose a product and model it as real one. So, it was tough journey when I was doing these work. First of all, I had to study about that matter properly, also gain the proper knowledge about product visualization. Though employees of my company where I have done my internship, they were very helpful and friendly. They supports me whenever I faced any difficulties. I watched many show reels on you tube which based on product animation. Then I took help from google. Moreover, my supervisor also give me some reference video which helped me more. In the beginning, I was very confused about what product I should for visualization. However, I find out that I have interest on cosmetic products. Me and my colleagues list all the products. They give me all support during this project. Besides, we figure out all problems first then we come to the solution step by step. Nevertheless, It was not so easy things to solve these problems, it took many study, reference etc.

CHAPTER 3 USED SOFTWARE DETAILS

3.1. 3DS MAX: Figure 3.1.1: 3ds Max Logo A professional [3D computer graphics tool for creating 3D animations, models, games, and photographs is Autodesk 3ds Max, formerly known as 3D Studio and 3D Studio Max. Autodesk Media and Entertainment is in charge of its creation and production. Modeling capabilities, a flexible plugin architecture, and a requirement for the Microsoft Windows platform are all present in this program. It is frequently employed by firms that create video games, numerous TV commercials, and architectural visualizations. Additionally, it is utilized for pre-visualization and cinematic effects. In addition to shaders \(subsurface scattering & ambient occlusion\), particle system, dynamic simulation, radiosity, customizable user interface, normal map generation and rendering, own scripting language and global illumination.](#) © [Daffodil International University 3.2](#). BLENDER: [Figure 3.2.1: Blender logo A suite of 3D computer graphics tools called Blender is available for free and is used to make animated movies, visual effects, artwork, 3D-printed models, motion graphics, virtual reality, and, in the past, video games. 3D modeling, texturing, digital painting, raster graphics editing, fluid and smoke simulation, particle simulation, compositing sculpting, animation, rigging and skinning, match movement, UV mapping, rendering, motion graphics, soft body simulation, video editing, and, interactive 3D apps are among Blender's features. Blender is cross-platform and functions just as well on machines running Windows, Linux, and Macs. To deliver a consistent user experience, its interface makes advantage of OpenGL. The list of supported platforms includes the ones that the development team has regularly examined to confirm compatibility in detail.](#)

3.3. REALFLOW: Figure 3.3.1: Realflow logo RealFlow is a dynamics simulation and fluid program created [by Next Limit Technologies in Madrid, Spain, for the 3D and visual effects](#) industries. In addition to other 3D

applications, this standalone [application can be used to simulate fluids, water surfaces, fluid-solid interactions, rigid bodies, soft bodies, and meshes](#). For creating [the RealFlow program and its contribution to the creation of motion pictures](#), [Next Limit Technologies](#) received [a Technical Achievement Award](#) from [the Academy of Motion Picture Arts and Sciences](#) in 2008. Future [Limit Technologies](#) declared [the arrival of RealFlow Component for Cinema 4D](#) in 2015. Simulations based on particles are used in RealFlow technology. Point-based nodes (daemons) that may perform a variety of activities, such as imitate gravity or reproduce the tornado-like motion, can have a variety of effects on these particles. RealFlow is capable of simulating interactions and collisions between soft and stiff bodies. Users can create custom tools to enhance RealFlow's functionality by adding control over the majority of the workflow's components, such as [batch runs, events, daemons, waves, and fluids](#), thanks to [the presence of Python scripting and C++ plug-ins](#). © [Daffodil International University](#) 3.4. **ADOBE PREMIERE PRO: Figure 3.4.1:** [Adobe Premiere Pro Adobe Premiere Pro is a non-linear, timeline-based video editing program \(NLE\) created by Adobe Inc. and distributed as a part of the Adobe Creative Cloud licensing scheme. Adobe Premiere Pro, which debuted in 2003, is the upgraded version of Adobe Premiere \(first launched in 1991\). While its sibling, Adobe Premiere Elements, is oriented at the consumer market, it is focused on professional video editing.](#) 3.5. **ADOBE ILLUSTRATOR: Figure 3.5.1:** [Adobe Illustrator The vector graphics editor and design tool Adobe Illustrator was created and is sold by Adobe Inc. Adobe Illustrator's creation started in 1985 and was initially intended for the Apple Macintosh. Illustrator CC was released concurrently with Creative Cloud \(Adobe's transition to a monthly or annual subscription service provided over the Internet\). The 25th iteration of the product series, Illustrator 2022, was made available on October 26, 2021. According to PC Magazine's evaluation, Adobe Illustrator is the finest tool for manipulating vector graphics in 2021.](#) © [Daffodil International University](#) 3.6. **ADOBE PHOTOSHOP: Figure 3.6.1:** [Adobe Photoshop Raster graphics editor Adobe Photoshop was created and released by Adobe Inc. for Windows and macOS. Thomas and John Knoll originally came up with the idea in 1987. Since then, the program has grown to be the most popular tool for creating professional-quality digital art, particularly when modifying raster graphics. Although Adobe forbids it, the term "photoshop" is frequently used informally as a verb \(e.g., "photoshopping," and "photoshop contest", "to photoshop an image,"\). Photoshop enables masks, alpha compositing, and many color models in addition to being able to edit and compose raster pictures on numerous layers. To accommodate these functionalities, Photoshop employs its own PSD and PSB file formats. Photoshop has limited capabilities for editing or rendering text, vector graphics \(particularly using clipping path for the latter\), 3D graphics, and video in addition to raster images. Plug-ins, applications created and released separately from Photoshop that run inside of it and provide new or improved features, can expand its functionality.](#) © [Daffodil International University](#) **CHAPTER 4 WORKFLOW OF PROJECT** First of all, I choose cosmetic items to modeling and product visualization. It's a long process. In every animation, I have to work on both post & pre production. It was not that easy. At the beginning, I made layouts, then scripts, do research about their color, environment, lights, render system. After making layouts I tried to make my products according to the reference images. On the other hand, I tried to include something new in every model. After all of these pre production work I started to work on post production. In post production, I design the models, give them proper texture and color, camera setting, lighting, simulations, particle system, animation, rendering process, editing process, sound etc. Now I will explain all of my works step by step in upcoming chapters. I will try to explain all steps in details. 4.1.1: **PERFUME : MODELS:** At first I took a reference image from google, which help me to making perfume model. Mainly, I use blender for modelling this product. Figure 4.1.1: Perfume reference I took a cube 1st then change object mood into edit mood. In edit mood, I exclude the edges of cube then use scale tool to give

it proper shape. After making appropriate shape I use subdivision modifier to smooth my model, then also convert it into shade smooth. One of the difficult situations I faced when I was doing texture work. It was too tough to make real glass texture as like perfume bottle. Besides, I use solidify modifier for making it thinner. ©Daffodil International University [Figure 4.1.2](#) : Perfume bottol [Figure 4.1.3](#) : Perfume cap [11 Figure 4.1.5](#) : Perfume & plane As a floor, I took a plane object under the perfume bottle. Then I exclude it in z axis and choose 1 verticals to bevel. After bevel the vertical I moved to object mood and make it shade smooth. Now come to the camera setting. Most significant part of animations. I took a camera and set it in y axis and rotate it according to my need. [Figure 4.1.6](#): camera ©Daffodil International University Then , I took 2 area lights and 1 spot light. I increase area light size in x and y axis which are 1.98 cm and 6.98 cm. I also increase the light power in 800 wt. On the other side , in second area light I did not changed its size and its power is only 300 wt. Both lights are important for the animation. It creates the realistic environment. Thirdly, I used a spot light in y axis and rise the size and also increase the power. Basically , I used it for the animation purpose. [Figure 4.1.7](#): Tri light setting Texture can make a model real. For this perfume, I choose glass material. Glass material making process was not that easy thing. At first , I took a node shade ,which contains white color as base color. Specular increased in 0.5, sheen tint increased in 0,5, transmission increased in 1 for glass affect and alpha decreased in 0.773. Next part is liquid effect making in inner side. Therefore , I took another cube for giving liquid texture. Then I select some faces and press shift + D for duplicate that portions and press P for separate that object. I used this portion for leveling the model. [Figure 4.1.8](#): Perfume after texture For logo design and leveling , I used adobe illustrator, for logo color I used black, yellow, white , used pen tool for design the logo. After that, I took this AI file into adobe Photoshop , modify the hue saturation ,brightness, colors and save it as PNG file. Further process, I took the image and open with UV MAP . Firstly , choose the full object by press U and click unwrap. Then size the faces according to my need. After that , I moved to material , choose a material which base color was white, took Image map , choose the image which I made for leveling, convert repeat to extend and joined it to base color and also I joined alpha to principle BSDF alpha. For making more realistic, I used bump , increased the strength to 5 then joined bump normal to BSDF normal. [Figure 4.1.9](#): Petal reference ©Daffodil International University Secondly , I model a flower petal for creating particle system. I took a flower petal from google as a reference image. Then I took a circle and convert it into edit mood. Moreover , I modify the circle and give it shape like the reference. Subdivision modifier also applied for the smoothness of that petal. [Figure 4.1.10](#): Petal Furthermore, come to the texture part, for giving it realistic texture, I used principle BSDF , Image map, and RGB curve. In image map I used reference image , linked it into BSDF base color, image map alpha with the BSDF alpha and for color correction used RGB curves. [Figure 4.1.11](#): pearl ©Daffodil International University I designed a mirror for decoration purpose. I took a cylinder , convert it into edit mode, exclude in -z axis to create a mirror shape . I also used subdivision modifier for smoothness. [Figure 4.1.12](#) : Mirror Mirror texture included two type of material shades. One was rose gold metal shade, second was mirror glass shade. For rose gold shade , I took BSDF node , increase material into 1 , increase Specular and roughness also. In base color I used baby pink color , that's why its reflect the rose gold color nicely. Next one, for glass texture again I used BSDF then Specular increased in 0.5, sheen tint increased in 0,5, transmission increased in 1 for glass affect and alpha in 1. [Figure 4.1.13](#) : Pearl , mirror, petal render output Pearl model was also used for decoration purpose. Sphere was taken for making pearl , subdivision modifier was applied, also convert it into shade smooth. For texture , BSDF principle was taken first , metallic increased in 1, specular increased in 0.150 , roughness in 0.450, sheen in 0.250, sheen tint in 1, clear coat in 1, clear coat roughness in 0.100. Then took a mixed shader and increased faction in 0,800. Color ramp, Hue saturation, noise texture, mapping, texture coordinator also used for this

pearl texture. Figure 4.1.14 : level design ANIMATION PART: ? First of all , I start the intro by falling a flower petal, the flower petal fall in z axis , for falling the petal I used 1 to 25 key frames. ©Daffodil International University Figure 4.1.15 : ani part 1 ? After falling the petal , in 26 frames in used particle system which creates more similar petals and spread all over . From 26 to 63 frames used for this animation. In particle system , I used emitter, set the number in 50 ,lifetime 36,in source emit from set in faces, distribution in jittered, check in random order and even distribution , jittering amount in 1. Check in the rotation , orientation axics in velocity , randomize in 0.193, phase in 0.052, randomize phas 0.417. Besides, change the physics in fluid , buoyancy in 0.490 and damp in 0.151 which belongs to forces. Gravity convert into 0 and render object choose the petals , scale it according to my need. ©Daffodil International University Figure 4.1.16 : ani part 2 ? Finishing the petal part , I started the smoke sequence. In smoke sequence, I took a sphere and a cube .I used sphere as smoke object by convert it into smoke by quick smoke effect. Then I used cube as smoke domain , which control the smoke size. I used 43 to 78 key frames for smoke animation. Fluid was used in smoke object converting into inflow. Density increased in 1, surface emission 1.13,check in the initial velocity. In smoke domain convert it into gas, increased the resolution in 128. After all of these , bake the all frames. ©Daffodil International University 19 Figure 4.1.17 : ani part 3 ? Fluid Morphing is used for liquid simulation. It convert the perfume into liquid water. In time scale set it into 0.5, check in the use adaptive and liquid , simulation into flip and check in the mesh. I used 80 to 170 key frames for fluid morphing. Lastly , bake the all key frames. ©Daffodil International University Figure 4.1.18 : ani part 4 Figure 4.1.19 : ani part 4.1 ©Daffodil International University ? Turn the perfume bottle , open up the cap. I used press to particle system .For particle system , sphere used as particles. Set the object name as sent. I used this part for particle system. 171 to 178 was used in movement of perfume and 179 to 245 key frames. Texture has given to the particles , I used pink water color to the particles. Figure 4.1.20 : ani part 5 ©Daffodil International University Figure 4.1.21 : ani part 5.1 ? Spot light and camera were used for next animation sequence, 246 to 300 key frames were used for this . I used a spot light to create reflection on the mirror, then camera for movement . camera movement showed in z axis. It flow in x axis. ©Daffodil International University Figure 4.1.22 : ani part 6 Figure 4.1.23 : ani part 6.1 ©Daffodil International University ? By using shift+D , I duplicate the perfume 2 times. Now it's the time for last animation sequence , which is about position. I moved one perfume in x axis and other one moved in -x axis. It took 301 to 374 key frames. Figure 4.1.23 : ani part 7 RENDER & EDITING: ? I used cycle mode for render , sample was not maximum more then 500. Resolution was good enough on the other hand I check in the denoiser for remove all noise from the video. Then I select fflim ,choose a folder for render video. After that, render took almost 6 hours. End of this render , I got mkv file , which I converted into mp4 file in video converter. ? Lastly , I used premiere pro for editing the video and add sound. In editing purpose, I used many effects to display the video beautifully. I slowed the video somewhere then reverse the video in middle. After that I made some color correction. Then I used a smooth sound which was suitable for my animation video. ©Daffodil International University 4.1.2: FACE SERUM : MODELS: At the beginning, I took a reference image from website , I used it for making serum model. First of all, I took a cylinder , size it by scale tool according to my need , cut it into several edges by loop cut, apply the subdivision modifier for smoothness. Next part is cap, again I used a cylinder , then convert into edit mood, select the faces in z axis and delete it by press X. Besides, make a hole on the top ,after that apply solidify for make thinner and subdivision surface modifier. Figure 5.1.1 : serum bottol Press tube is the top part of the serum bottle, another cylinder was used for this press tube and moved to the edit section , select the edges to make a curve shape , convert it into shade smooth, and subdivision modifier will be also applied. Then , tube is another part of press tube , I created this by cylinder. I took this cylinder and convert it into edit mode.

I increased edges and modify it as a tube. ©Daffodil International University Figure 5.1.2 : serum tube By pressing shift + D , I have copy the bottle for making liquid serum. I removed the faces of z axis to modify the shape. Then came to the texture part. I used principle BSDF, as a base color I took white color, increased the metallic in 0.068, specular in 1, and sheen tint in 0.500. I made it as like white serum liquid. One cylinder was taken for making cap of serum. I modify it in edit mood and applied subdivision surface. For the texture , increased the metallic into 1, specular in 0.500. roughness in 0.200. ©Daffodil International University Figure 5.1.3 : water surface Last but not the least, for the leveling of bottle I copied some faces. I pressed Ctrl P and click on separate by object. After that , It become a separate object. In transformation option, creased was increased in 1 and make it vertically and horizontally straight. Figure 5.1.4 : water surface ©Daffodil International University 28 Now came to the texture , firstly I design the level in adobe illustrator then edit it on photoshop. I took principle BSDF and base color was pink, I also took a image map ,in image map I insert the image which I edited in illustrator. Link up the alpha and color from image map to BSDF base color and alpha and also use the bump ,increased the strength in 5 and connected to normal in BDSF. Figure 5.1.5 : circle ,drop Torus used for serum design. I took two torus and convert in into shade smooth. Same texture was used in torus which I used in serum bottle. Sphere was taken for making water drop. Converted the sphere in edit mood and modify it. Then use shade smooth and applied subdivision surface modifier. In texture , I used BDSF , sky blue color as base, subsurface IOR in 1.4 , specular in 1, transmission in 1, and alpha in 0.540. I used another sphere for serum drop , I modify it similar way as water drop. For texture , I used same texture which I use in tube and press tube. Circle was taken for liquid effect. First of all I took circle and increased the vertex points, convert it into edit mood , press ctrl F and fill it up, shade smooth was also applied. Used the same texture as the serum drop. ©Daffodil International University 29 For floor, I took a plane object under the serum bottle. Then I exclude it in z axis and choose 1 verticals to bevel. After bevel the vertical I moved to object mood and make it shade smooth. In texture I used BSDF and yellow color as base color. Now come to the camera setting. Most significant part of animations. I took a camera and set it in y axis and rotate it according to my need. Then , I took 2 area lights. I increase area light size in x and y axis which are 1.98 cm and 6.98 cm. I also increase the light power in 800 wt. On the other side , in second area light I did not changed its size and its power is only 300 wt. Both lights are important for the animation. It creates the realistic environment. Figure 5.1.6 : light & surface ANIMATION PART: ? Water drop falling is the first part of the animation. I took plane as water surface . For making water surface, firstly, dynamic paint was used, key frame started from 1 and ended in 70, dynamic type was canvas. Scale influence increased in 1 and also radius in 1. ©Daffodil International University 30 Figure 5.1.7 : ani part 1 ? Water drop animation started from 1 and finished it on 26 frames. Dynamic paint type was brush, alpha increased in 1 and wetness increased in 1. Check in the absolute alpha section. ? After that , bottle was fall into the water again. Key frames were started 40 and end up in 65 frames. I will reverse this frames after render. Render button animation was created from 65 to 70 key frames. In 71 frames ,I turned off the render button and make this animation. ©Daffodil International University Figure 5.1.8 : ani part 2 ? I took another sphere for particle system. In particle system , the number of particles is 3000 , lifetime is 7, lifetime randomness is 1,jittering amount is 1. 72 to 102 key frames were used for this animation. Check in the rotation button, randomize in 0.118,phase is 0.047. then I used the fluid. Select the type flow in fluid, flow type is smoke, flow behavior, check in the use flow , sampling sub steps is 2, density is 10,000 , make the flow source to particle system, check in the set size , size is 3.95, check in the initial velocity, amount of source is 0.5. ©Daffodil International University Figure 5.1.9 : ani part 3 ? Now, a cube is used for fluid domain. The domain type is gas, resolution division is 64, time scale is 1,cfl number 4,key frames are 71 to 102 and last of bake all of this. Smoke texture is white and

pink. ? During this smoke session , another important thing is happening. I rotate the serum bottle from 80 to 102 key frames in z axis at 360 degree. Figure 5.1.10 : ani part 4 ? In 102 frame , I have change the location of cap, tube , press tube , and tube 01 in different axis. Now come to the last part , a drop of serum is fall down, this seen is animated in 102 to 125 key frames. Lastly , the drop is transform in plain circle in the surface. Figure 5.1.11 : ani part 5 ©Daffodil International University RENDER & EDITING: ? I used cycle mode for render , sample was not maximum more then 500. Resolution was good enough on the other hand I check in the denoiser for remove all noise from the video. Then I select fflim ,choose a folder for render video. After that, render took almost 6 hours. End of this render , I got mkv file , which I converted into mp4 file in video converter. ? Lastly , I used premiere pro for editing the video and add sound. In editing purpose, I used many effects to display the video beautifully. I slowed the video somewhere then reverse the video in middle. After that I made some color correction. Then I used a smooth sound which was suitable for my animation video.

4.1.3: BODY WASH : MODELS: To commence with the models, firstly I create a bottle by using a cylinder. After taking the cylinder I scale it according to my need, convert it into edit mood. In edit mood , I modify the edges of the bottle , bevel the upper and lower portion. Then I went back to the object mood and apply subdivision modifier and shade smooth. As a result , this bottle become smooth in texture. Figure 6.1.1 : body wash bottle After that , Its time for texture. In texture, I use principle BSDF, light yellow color used as base color, specular increase in 1, sheen tint in 0.500. It became glass material. ©Daffodil International University 36 Another cylinder used for cap . I take it on edit mood, deleted the faces of upper and lower portion , choose the upper vertex by pressing Alt and select, exclude the select part according to my need, use the loop cuts and bevel too , coming back to the object mood and apply the subdivision surface and smooth the shade. Figure 6.1.2 : foam surface Moreover , I have to texture this bottle . In texture, I use principle BSDF, black color used as base color, specular increase in 1, sheen tint in 0.500. It became glass material. Now , I create the press model in higher portion. For this, I take a cube , then apply subdivision surface, convert it into edit mood , select the edges and drag it by exclude option , move in x , y , z axis according to need , after that select the edges and scale it for getting the perfect size. Shade it smooth again for better texture. ©Daffodil International University Figure 6.1.3 : foam Besides , I have to texture this bottle . In texture, I use principle BSDF, black color used as base color, specular increase in 1, sheen tint in 0.500. It became glass material. It's time for leveling the bottle. I have create a sticker for body wash in illustrator and photoshop. I take reference image from google. Then design it as the reference by using square shape, pen tool , text tool ,back ground color etc. I use photoshop for edit this image , increase brightness, correction the color. After all of this , I press Shift +D to copy some edges of the bottle and press ctrl p then separate it. In transform option , I increase the crease in 1. Furthermore, let's start the texture . For texture, again I use principle BSDF, as a base color white color is used, I take a image map then insert the image which I have created, take a bump effect to make this more realistic. ©Daffodil International University Figure 6.1.4 : bubbles I take sphere for making soap bubbles. Firstly , convert the sphere into edit mood , then select edges to modify the shape, again come to the object mood , apply the subdivision surface, lastly shade smooth is applied. For texture, I use a BSDF , white color as base color , take a hue saturation factor in 1, noise texture map also, transparent BSDF color white, layer weight map, mix shader use to connect all shade then make link with material output. After that, it's time for foam making process . I take two spheres for this foam effect. Convert the sphere into edit mood, by the proportional tool modify the sphere as soap foam, apply the subdivision surface modifier and increase the viewpoint in 4, then go to the object mood again and apply shade smooth. Moreover for texture, I use a BSDF , white color as base color , then take the image map and insert a picture of foam which I downloaded from goggle, also take bump map and increase the strength. Furthermore, I

make a foam surface too , I make it by the help of plane , proportional tool , subdivision modifier , shade smooth . lastly I apply the same texture which I apply on the foam. At the end , I take another sphere for soap drop effect. I modify it through the edit mood, then I started to redesign the edges of the sphere. After all of this, I used some modifier and convert it into shade smooth.

ANIMATION PART: ? At the beginning , I create the bubbles animation. For this animation , I took 1 to 70 key frames for this. In this animation process I use particle system. Firstly , I take a sphere which modify into a bubbles. Number of bubbles are 50 , lifetime 150, velocity convert into -1, scale down the size of bubbles according to my need, check in the rotation button. From the key frame 1 bubbles started to flow in all around the environment. Figure 6.1.5 : ani part 1 ©Daffodil International University ? I work on material alpha and create animation on it . in 71 frame I decrease the alpha in 0 and 95 frame I increase the alpha in 1. By all of the key frames , color opacity is animated. ? Moreover, camera movement is animated from 96 to 130 frames. I animate the focal length of camera , scaling up and down in x and y axis. Firstly , camera stay in lower y axis then slowly move it on higher part and decrease the focal length then showing the full product model. Figure 6.1.6 : ani part 2 ©Daffodil International University Figure 6.1.7 : ani part 2.1 ? By shift + D command , I copy the body wash and create two new bodywash. From 131 to 220 frames are uses for this animation. One of the model move in x axis and another model comes out from - x axis, which animated in these keyframes. Figure 6.1.8 : ani part 3 ©Daffodil International University ? Besides , foam surface animate between 221 and 250 keyframes. This foam plane move to x axis to -x axis. Figure 6.1.9 : ani part 4 ? After that , I use particle system, sphere is modify as water drop . In particle system I choose water drop as object , scale it according to my need, check in the rotation button, number of drops are 80 . I take body wash bottle and cap for particle. Increase velocity , gravity in 1. From 251 to 320 key frames are used for this animation. ©Daffodil International University Figure 6.1.10 : ani part 5 ? Lastly ,I will animate the cap to fall the soap. The cap is going down to -z axis then coming up to z axis. In the meantime, the soap drop is falling in z axis. Total animation have been done between 321 and 400 keyframes. ©Daffodil International University

RENDER & EDITING: ? I used cycle mode for render , sample was not maximum more then 50. Resolution was good enough on the other hand I check in the denoiser for remove all noise from the video. Then I select F flim ,choose a folder for render video. After that, render took almost 6 hours. End of this render , I got mkv file , which I converted into mp4 file in video converter. ? Lastly , I used premiere pro for editing the video and add sound. In editing purpose, I used many effects to display the video beautifully. After that I made some color correction. Then I used a smooth sound which was suitable for my animation video. ©Daffodil International University

4.1.4: CREAM : MODELS: First of all, I take a reference image from goggle. Then import it into blender interface. After that , I take a cylinder for this model, convert this cylinder into edit mood. Select the edges and exclude it, use the proportional tool to design it. After that , I use surface subdivision to increase edges and make it smooth and I also applied smooth for final output. Figure 7.1.1 : cream Moreover , I make the cap by using another cylinder. Choose edges and exclude it in y axis then make it smooth by using subdivision surface. I am using plane for making a surface , took a plane then convert it into edit mood. Select edges and exclude it in z axis after that use bevel for modify it as like a cap. ©Daffodil International University Now its time for texture , I use peach color for this cream body. Firstly , use a principle BSDF then took peach color as base color, Specular increase in 1, sheen tint increased in 0.9, roughness in 0 due to smooth texture and alpha in 1. Figure 7.1.2 : cylinder Next part is cap texture , for this I also BSDF then took brown color as base color , specular in 0.8 , roughness in 0.5 because of matte texture. For lighting I use 3 area light . increase area light size in x and y axis which are 1.98 cm and 6.98 cm. I also increase the light power in 1000 wt. On the other side , in second area light I did not changed its size and its power is only 800 wt. 3rd light installed in z axis in

same size and power is 1000 wt. Both lights are important for the animation. All lights color is white due to focus the product. ©Daffodil International University

Figure 7.1.3 : smoke object One of the most important things is camera. Which is on $-z$ axis . I increase the focus length according to the scene need and move it on x axis and z axis. I use two sphere for smoke effect . normally I took two sphere and make smooth. Now come to the another portion ,I use 8 cylinder for animation. Convert it into edit mood and bevel the edges for smoothness and apply subdivision surface . Last but not the least , I copy the cream by pressing Shift + D. I create eight more creams for animation. ©Daffodil International University

ANIMATION PART: ? First of all, I use two sphere for smoke animation. In x axis I use 1st sphere and use fluid , quick smoke effect. In fluid I convert it in smoke then took a cube then convert it into domain. From 1 to 50 key frames used for smoke animation. I pick sky blue color for smoke. 2nd sphere use in $-x$ axis which smoke come from opposite direction. Figure 7.1.4 : ani part 1 ? Between 51 to 120 frames used for cream animation. i took 3 creams for this part. I move them to $-z$ axis which is animated individually to z axis. They come to upward in different position then animate it into key frames. I maintain the time line of those three cream due to good sequence. ©Daffodil International University

49 Figure 7.1.5 : ani part 2 ? Now come to cylinder animation part . which is one of the most important part. I took 8 cylinder for animation . all are in $-z$ axis they come from $-z$ axis to z axis gradually. After that all cylinder will stay in this surface. I use 121 to 250 keyframes for this animation. Figure 7.1.6 : ani part 3 ©Daffodil International University ? After that , I use 8 cream with this cylinder because I want to animate this. Creams are in z axis which will come to downwards between the animation. from 251 to 350 keyframes are used for this part. For some creams I use rotation which is in z axis in 0 to 360 degree. Some creams were moving into the cylinder too. Figure 7.1.7 : ani part 4 ? Lastly, I do the camera animation in 351 to 390 key frames. I increase the camera focus length and take it near to the product. I move this camera in $-x$ axis to x axis and $-z$ axis to z axis. Then come to the top cream animation , which is rotated into the top . Figure 7.1.8 : ani part 5 ©Daffodil International University

RENDER & EDITING: ? I used cycle mode for render, sample was not maximum more then 50. Resolution was good enough on the other hand I check in the denoiser for remove all noise from the video. Then I select F flim ,choose a folder for render video. After that, render took almost 6 hours. End of this render , I got mkv file , which I converted into mp4 file in video converter. ? Lastly , I used premiere pro for editing the video and add sound. In editing purpose, I used many effects to display the video beautifully. After that I made some color correction. Then I used a smooth sound which was suitable for my animation video. ©Daffodil International University

CHAPTER 6 GRAPHICS WORK I did some graphics work also for face book add run. I did those work by using illustrator and photo shop. I took some reference image then generate own idea and implement these things into illustrator. I choose some meaning full color along with that I took client opinion when I was designing these posters. Though I am passionate with 3d modeling and animation however I also love to do that kind of creative work. I always try to keep simplicity on my design which attract the consumers. I used illustrator for every poster design moreover I took google reference then I edit them more in photoshop. The color combination , designs idea was totally mine .

Figure 8.1.1 : poster 1 ©Daffodil International University [Figure 8.1.2 : poster 2](#) [Figure 8.1.3 : poster 3](#) [Figure 8.1.4 : poster 4](#) ©Daffodil International University

3D MODELS Here I also did some more models which I did by using blender. I took reference images from google then create it on blender. I give them proper texture , color, shape as like as the real one. [Figure 9.1.1 : model 1](#) [Figure 9.1.2 : model 2](#) [Figure 9.1.3 : model 3](#) ©Daffodil International University

LIMITATIONS AND CHALLENGES Limitations: Everything has limits which we can not cross. Because of I was doing internship that is why I have to face many limitation. I was working into a team so I have to follow several rules which was not that easy staff. I have to do every work according to clients need. Sometimes I feel it was not so appropriate but nothing to do I have agree with that . after that , I have

