Unit 6

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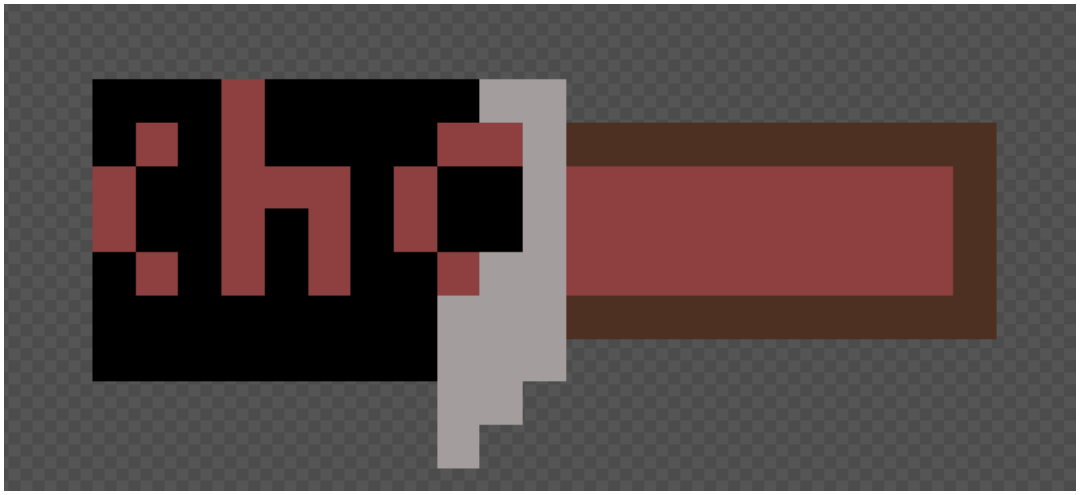
this pixel art is good because it can be used as a example for a enemy,boss or even a giant robot hero.here it's shows here how big the robot is.The red color is great.

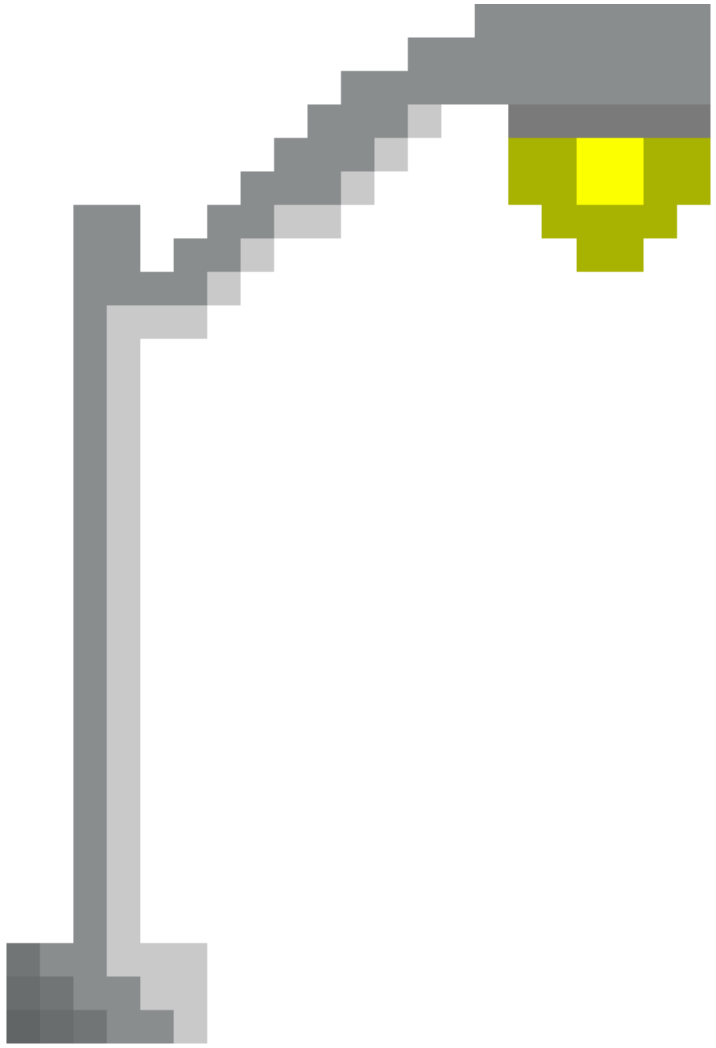
I like this 3D model because it can be used in video games and it's a cool gun.the details is very good,also who doesn't like guns? the lighting is very good,coming from above.

I like this art because in can be used as a world or terrain in a game.A world where the player can explore and enjoy the map.with the silhouette shows how big the map is.



Here is my chocolate bar,it restores energy.

This is my reference picture for my chocolate pixel art.



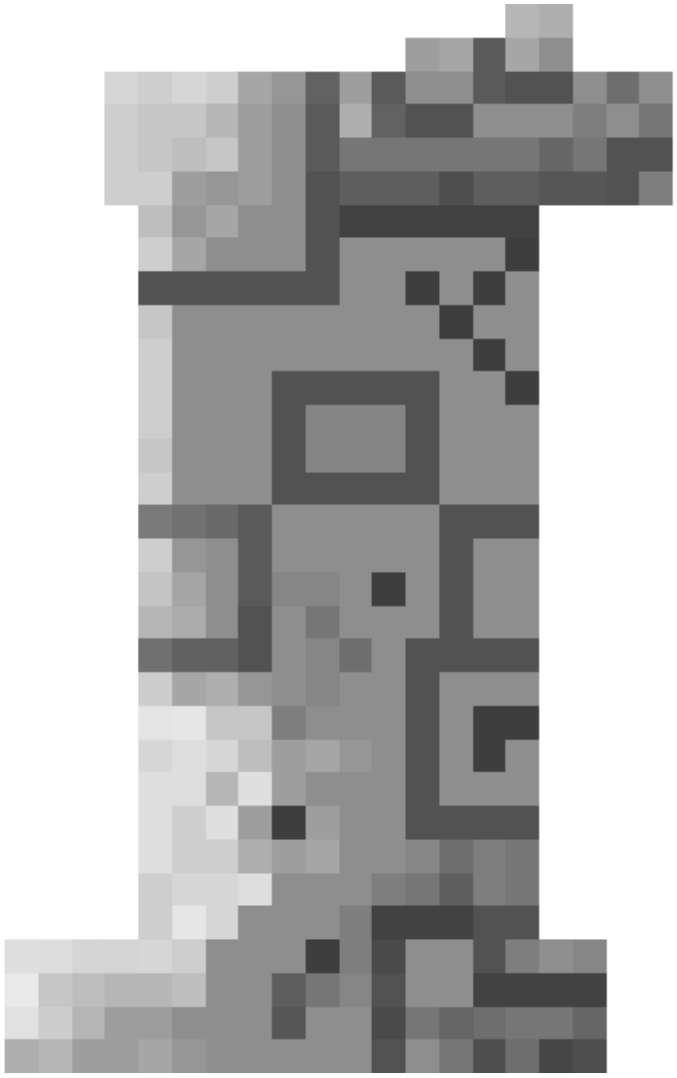
I chose a moon texture for my Photoshop manipulation.Set the image on pixels.

I unlocked it,so i can modify it.I put on the tiled filter so i can change the image.I offset the image by one half so i can use the spot heal brust tool.I used the tool to mend the cut imaged together so it looks more natural. I clones the images and put them together(on a different background/layer)so the picture is bigger by putting them together like a jigsaw puzzle.

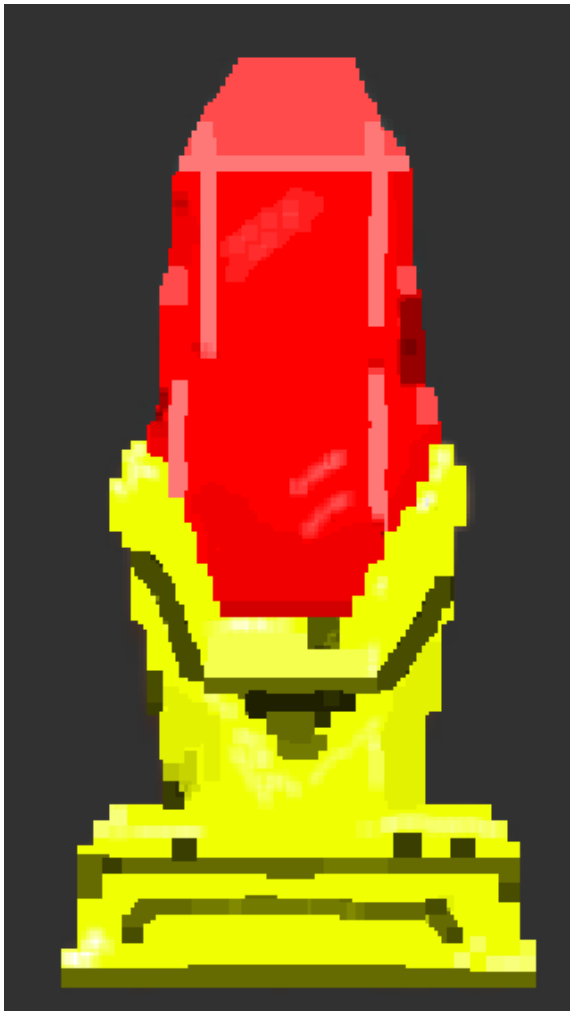
I like the simplicity of the art,it is still a good game,the different shades does help alot for the game.this game has a lot of colours that combine very well with each outer.

the shades and shadows are really well made,also the small details does show like the smoke from the boss and the glow from the skeleton.

I love the background in this game,it is just different sades of black,grey and white.But it shows that the back ground does matter a lot in games,also the movement of it and the skeleton is really nice and polished.



This is the pillar i downloaded and changed dramatically.



This is the second image i downloaded and changed in the way i want.

I made this representation of a city in MAYA.

I started by spawning a cube then i stretch it thin and wide for the base of my city.I then made long rectangles which are suppose to be big buildings(i used Ctrl+D so i can make copys fast),like in a city,later a made a sort of path way,like a road in a city.

I then put spheres and small cylinders together to form a tree,somewhat,i resized it and changed it's position to best suit my city.

I added later a cuboid,to represent a small building or house.

After that i put a big cylinder,next to the cuboid,and made a "cut" on it,to make a somewhat opening.I chose specific faces of the cylinder to cut it.

I used multiple tools to achieve this,i used the move tool (W) to move the objects,i rotated it and scale it to my liking.

I didn't use as many tool as i would like,for example i would like to have used the vertices more and the offset and extrude tool (Ctrl+E).

A Blockout is a rough representation of a object.item,landscape,location,ect.It is to help the future artist and designer make the game.

Blockouts are basically shapes,cuboids,spheres and more put together.

A polygon is a bunch of faces,shapes and vertices.

lambert, **blinn**, **phong**, are different types of shaders in Maya.

Lambert don't have shininess or reflectivity it's a very basic shader that simply lets you change it's surface, it's colour, transparency, incandescence, ambient colour, diffuse colour, translucent and more, but that's the basic.

Blinn this shader will, by default give objects you made, specular highlights, maya out of nowhere gains two light sources to shine the objects with blinn in them. Not only that but blinn has more stuff that lambert hasn't, like eccentricity control (how sharp or pointy the highlight is,or how diffuse it is) , specular roll off (how bright the light are), specular colour, reflectivity control (how reflective a surface is) and more.

Phong is like a more powerful Blinn but also has more options in terms of specularity, like a roughness control, highlight size, whiteness and more.

There are more shaders like Anisotropic (the highlights are directed, not round) and Phong E (The specular highlights on Phong E surfaces are softer than those on **Phong** surfaces, and Phong E surfaces render faster) but those three are the main ones.

A shader is simply a program that runs in the graphics pipeline and tells the computer how to render each pixel. These programs are called shaders because they're often used to control lighting and shading effects, but there's no reason they can't handle other special effects. So the more shader a object has the more graphically impressive the object will become, with more lights, shade and other stuff, and it will be more rendered.

You can use Blockouts to make a very simplistic version of a map, scene, character, weapon, etc. This will help the artist, game designer and everyone save time in case the people you are working with don't like it or to see if an object is right for the job.

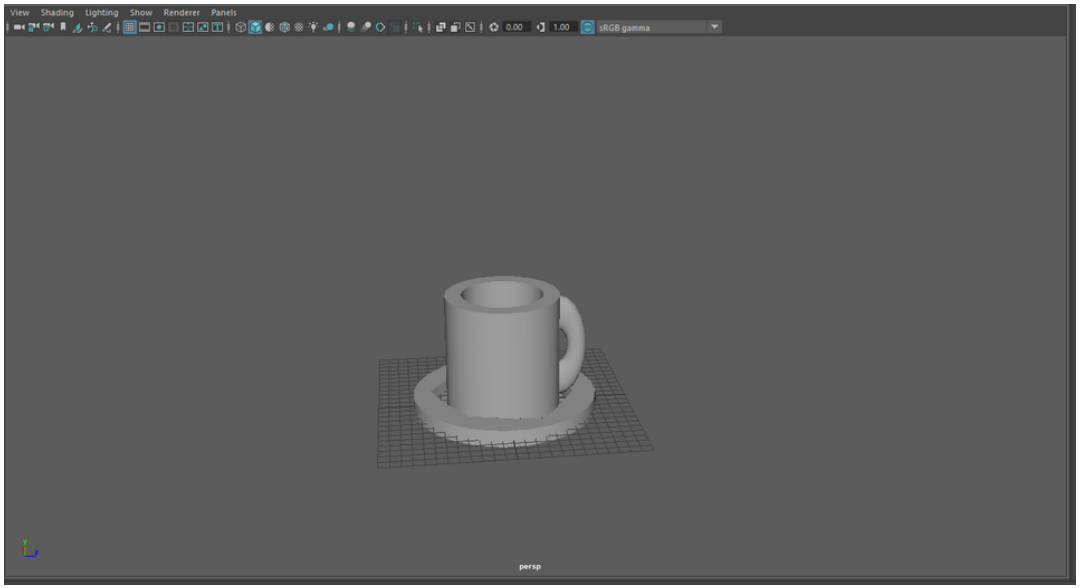
I made this Dice in maya by placing a cube into my scene(with a increased size) and modifying it. I first made all the corners smooth and not "pointy or sharp" by selecting all of the cube, went to the little wrench icon on the right hand side (modifiers), i selected Bevel, then i increased it's segments to the max so the edges of the cube would be has smooth as possible.

Later i used the Booleans (Mesh > Booleans > difference) tool so that i could make the "hole" or "numbers" that my dice has. I created a sphere into my scene, increased it's size and made the necessary duplicates for the "numbers" in my dice, i moved the spheres into the cube, about half way through, then i used the Booleans tool to make holes in my cube, and so i didn't accidentally cut the cube instead of the spheres, i shift-left clicked the cube first then the spheres, then i click on Mesh > Booleans > difference to make the holes, and i did this for every side of the dice, putting more or less spheres accordingly.

This dice i made was fairly easy and simple to make, i didn't have any problems with it, although i had to ask the teacher how to make the cube not disappear but the spheres instead because i didn't know how to.

I made a Cup with a handle and a sort of plate below it. I dragged a cylinder to my scene and then i dragged another cylinder so i can use the Boolean difference tool to make a hole in my cup, The problem with me doing this instead from the extrude tool is that it won't let me do a CV curve ,without it i can't be more precise when making the handle of my cup, then i made a a big "plate" of some sort below my cup, then i used the extrude tool again and i selected the outer faces of my Plate and increased their height.

After that i made a doughnut and cut it in half then i resized and reshaped it to fit the cup. It's not a good handle, i did have some struggle trying to make it look good, unlike if i did a handle with the CV curve, but it's a handle nonetheless.



The Cup i made

I downloaded the Arcade_Machine.fbx from the Unit Tech Page and placed it on my Maya scene, then i clicked the model and pressed the UV Editor icon. Then i clicked right mouse button and went to UV mode, and i then selected all of the model by left clicking all over it. Later i clicked the UV snapshot icon, changed the image format to a JPEG file, and then i placed it to Photoshop, created a new layer and started to texture the machine.

I made a second layer so that i don't mess with the layer that has the arcade "blueprints". I started looking for images and texture in the internet for my arcade, i took an image i thought was good for the screen of the arcade, i transferred the image to Photoshop then i moved it on to the screen of the arcade machine, i then resized it to fit the screen, but i think i made a mistake and wanted to return it to it's original position but i couldn't place it right so i pressed Ctrl+Z to undo it, or so i thought Ctrl+Z did but all it did was take the image in the screen off Photoshop, because of that i had to transfer it again from the internet, i had to resize it and place in the way i wanted to all over again.

I changed the images i had in Photoshop by holding down Shift, Alt or Ctrl key while moving it with the mouse. I also transfer some more images and place them on the Banner, back and side of the arcade as you can see from the image to the right, i also resized them to fit properly and i also changed their opacity so i can see how they fit with the arcade, and increased it back up when they fitted the arcade.

In some parts of the arcade like the joystick, handle, buttons and coin hole i added a simple colour to these parts of the arcade, since they were small parts of the arcade. I used the rectangle selection box tool since i thought i didn't need to be precise with the coloring, after i did the rectangle box around the parts of the arcade i wanted, i used the bucket tool to paint every thing inside the rectangle, instead of painting everything manually.

I also used the polygonal lasso tool in small areas of this texture arcade, i used it to make a small space where i can colour it, an example i when i tried to place an image in the back of the arcade, there was some space left to fill but if i tried to fill them with the image it would overfill the other places of the arcade, so i used the lasso to make a small shape then i'd fill it whit the bucket tool with paint.

I could improve my usage with Photoshop and manipulating images and everything by utilizing more of the tool that Photoshop has, and learning more about how Photoshop works and what it has.

This is my Durian i crated in Mudbox 2019.

If i had more time i would have made my durian more spiky and make a better brown part on top of it, and use different tools to make my durian better looking.

The research i did, finding a durian in real life and a 3D one really helped me understand what my durian would look like and the colours it needed.

The tools i used in Mudbox for my 3D durian were the smooth, flatten, imprint, amplify and pinch, these tools helped me make my 3D durian. But it was difficult doing this 3D modelling, because i was new to this system and i didn't know their potential, and for me it was hard to make spike in my model, and making a separate object and adding it to the main part of the durian. I also found it hard to colour my durian, because when i tried to paint one part of the durian it would paint the other part and i didn't want that.

Organic modelling means modelling living things, or things that should be living, plants, animals, elves, humans, wookies, klingons, orcs, monsters, insects, bacteria. The 3D model i made is from a organic object, a fruit to be specific.

Hard surface is things like cars, armor, weapons, and architectural elements. The difference between organic and hard surface modelling is exactly what the names imply. Organic modelling is usually creating 3D models of living creatures such as people or animals. Hard surface modelling is usually focused on inorganic objects such as buildings or furniture. Both hard surface and organic modelling are at their core still polygon modelling. Although different techniques are used between the two.

I found two organic models that i personally liked and it looked cool, i liked these because they look simple, and for one of them it has a low poly count, the other one is shiny and has nice colour. If it was me i would add some colour on the fish model and i would made the centipede model low poly, and make it more dirty and not so perfect, like a real one.

This is a example of a Albedo texture, or better know as a base colour.

Albedo map or texture only represent the base colours of a surface, the simple colours.

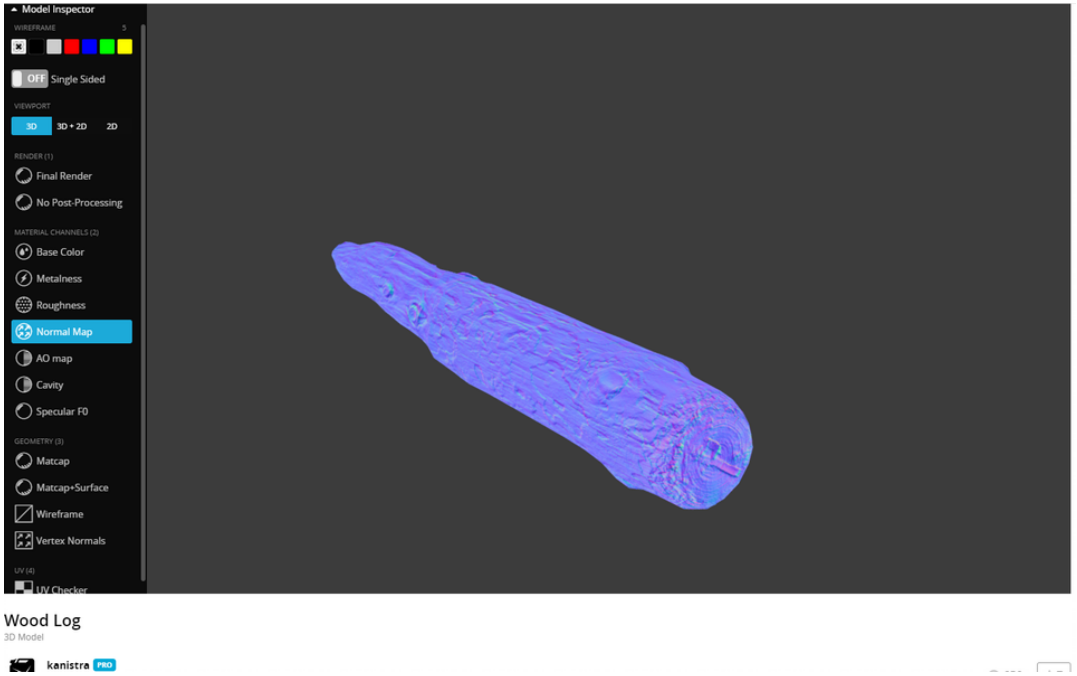
This is an example of a Metalness or Metallic texture, of a Reminton 1858 Revolver New.

Metallic maps are an alternate to Reflectivity in PBR (Physically-Based Rendering). they make materials more metallic and thus more shiny.

Roughness maps are Gloss maps in a PBR system, they basically show how smooth or rough a surface is, this is also called Microsurface.

Normal maps have 3D bump maps that modify vertices that give the illusion of a higher detailed geometry. This is the reason a normal map is used, to fake high-resolution details on a low-resolution model. Not only that a normal map is an image that stores a direction at each pixel. These directions are called "normals", which are Vertex normals tht are invisible lines pointing out of a 3D model's surface, at each vertex.

This image shows the roughness of a steampunk top hat.



The normal map of a Wood Log, in Sketchfab.

Solo Project

A simple shotgun is what i'm going to try to make.

Research:

I researched about shotguns on the internet, i even went to Sketchfab so i can see shotguns in 3D with a variety of models and art style. I then went to google and searched some shotgun pictures, some real ones, 2D, 3D and with different art style, then a added the ones i liked below.

I also researched some videos on shotguns, some real life ones and some videos on how to make a 3D shotgun on Maya or Mudbox. I placed the videos i liked the most down below.

On 11/12/19: I went to the internet and searched for a image of names of the parts of a shotgun, and i found one i liked.

Working Journal:

Here is the actual work i did for the solo project i have to do, and what i did to make it.

On 11/12/19: All i really did was mess around with the objects and see how they work and also a very rough 3D model of a shotgun. I still don't know what type of shot gun i'm going to make but i'll know that if i have to choose it'll be either a double barrel shotgun or a simple pump action shotgun.

First what i did was add a cylinder to my scene scale it then duplicate it, i then added a 3 cubes, scaled them and moved them accordingly, then i added a donut and i wanted it to be thin so i started to mess with it be pressing a lot of buttons on it and i found out that "T" does something, i gain the option to modify it's radius, Section Radius, twists and more. I made the dount very thin and placed it below a rectangle, to act as a "trigger guard", below the "Receiver", then i made a copy of the guard and cut it in half, although i was having a bit of difficulty, i tried to right-click and then go to faces and hold left-click on about half of the dount or circle, but after i did that it would seem that the other stuff of the circle were still there like the vertices and edges. I tried deleting then as well but for some reason i couldn't, but it was not much of a problem because i could select those specific i couldn't delete and move them, then i would move the whole half-circle, which is the "Trigger", and place it in the "Trigger guard" slightly in the box that is the receiver.

Later i made a smaller rectangle and placed it to the side of the receiver rectangle, i then made the small rectangle a boolean an made a "Cut" in the shape of the small rectangle, this is called a "Ejection port" this is were the shotgun shell are suppose to come out from.

This is pretty much it what i did in maya, the rest i did was more messing around, using the "T" button, Ctrl+E and Ctrl+B buttons, so i can modify my objects and also understand what they do.

After doing all this i evaluated my rough work i did and i though of some improvements i can do with it. I can Ctrl+b both rectangles that are the receiver and the grip (the part where you hold the gun and trigger), making it not so "blocky", then i could also make the "Fore-end"(the part where you hold the gun near the barrel) a cylinder instead of a rectangle. I can also add some "marks" on it by doing a boolean division with a semi-dount, i can make the top barrel cylinder have a hole in it, by making a boolean cut with a smaller cylinder. Another thing i can do is add a small cap or magazine cap as they are called, in front of the bottom barrel, then i can maybe add a few screws, i can make screw by adding a sphere and shaping it to be very small and thin, then if i wanted i can make a "cut" to it using booleans with a small thin rectangle or two.

On 14/12/19: I did some more research, the type of research that will help me make my 3D model and how to make it good and more.

I searched for shortcuts in Maya because i want to know how to use it properly and with that knowledge i can make my model better, i found two sites that helped me find and understand the shortcuts, the sites are: (https://www.autodesk.com/shortcuts/maya) and (https://www.lifewire.com/maya-training-keyboard-shortcut-cheat-sheet-2137), the first site is more complete in terms of shortcuts, as it has all of it while telling you what they do. The other site has fewer shortcuts but it explains it well and simplifies it for you to understand it better.

I also went and searched on how to make a shotgun in Maya, but instead i found a website that explains in detail, with images, how to make a futuristic weapon in Maya, the site is this: (https://cgi.tutsplus.com/tutorials/creating-a-futuristic-weapon-in-maya-modeling-the-base--cg-14963) even though this is not the weapon i want to make, the site does explain very well on how to do a 3D weapon, how to modify certain parts of the weapon, where to go to change it and more, so it's a good site nonetheless.

Later while doing my solo project i searched on google "how to add more divisions on a Maya object", then i found a short video i was interested in this is the video (https://www.youtube.com/watch?v=zzSJvjc4jrw), the video is called "Add Divisions (edge) #example_01", this video shows how to add divisions on a cube, specifically more vertices on the edge of the cube, the reason i wanted to know this is because

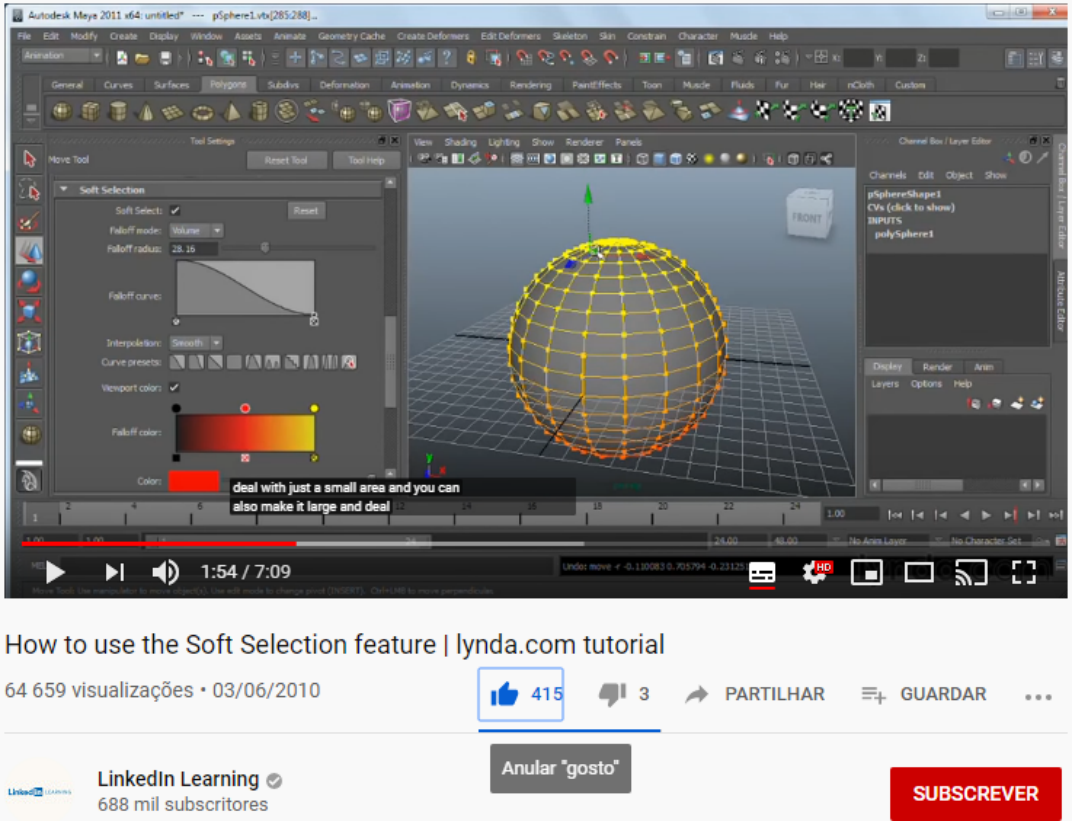
i want to be able to modify my 3D objects and be precise on my modelling. Knowing this knowledge is useful for me now as well for me in the future, in terms of precise modelling.

On 16/12/19: I did a little extra research on the "marks" or "lines" on the fore-end of a shotgun that some have. I went to the internet to search some images of shotgun with "marks" on them, and i found some, but i did do a small mistake, i did this research after i already did the marks on my own 3D shotgun in Maya, which i quite different from what real life looks like.

The "lines" of my shotgun are fewer and quite large compared to real life ones, i should do some researches when i have an idea or want to do something quite hard on my 3D objects. But the good news about the mistake i made is that i will now know to do my research before i do something major in my 3D Objects.

Later i watched a video called "GUN MODELING in MAYA part 1 - hard surface modeling tutorial", the video is here (https://www.youtube.com/watch?v=fhPWIDX5iQ0), this video show a person making a gun and he shows us the process and how he did it and why he did it. It's a good video that can help you understand how someone with more experience does something like this, you can learn a lot from this, the more knowledge you have the better you work will be.

On 17/12/19: On my home computer i encountered a problem, where the Soft Selection feature, i didn't know at that time that that was the name, was activated and i don't know how to deactivate it, so i went to the internet for some solutions, i found a video, the video is here: (https://www.youtube.com/watch?v=tl1utGRX9aw), this video helped me explain what the Soft Selection feature is, and how to modify it and more importantly for me, how to deactivate it, this video helped me a lot.



The video i used to help solve the Soft Selection feature problem i was having and also to understand Soft Selection and what it does.

On 13/12/19: I made my shotgun with some new improvements, first i started with a empty Maya and then i started to add shapes and modify them in the scene.

After i added the two barrels (cylinders) and grip and receiver (two rectangles) of the gun, i added a small thin cylinder in front of the bottom barrel to act as a magazine cap. Then i made another cylinder, which it meant to be the Fore-End or forestock, i placed it on the second bottom barrel.

Later i wanted my top barrel to have a hole on it, and to do this i made a smaller cylinder, placed it inside the then i made it a boolean and a hole appeared, although a little bit of the fore-end can be seen in the hole, but it was easy to fix i just have to do the same thing, but instead of dividing the barrel i'm dividing the fore-end cylinder.

I then wanted to add a few screws on the grip and receiver of the shotgun, i did this so that my gun has more detail in it and it wouldn't be hard to do, you just have to make a very very small cylinder, add a small "cut" in it, since there are multiple types of screws, i chose to make a screw with an "X" or "+" on it, it's a bit of extra work to do an extra line instead of just one line on the screw, but i wanted to add that small detail.

In order to make these lines on my small cylinder so it becomes a screw, i made two small rectangles and made them into a cross and placed them on the cylinder and a little bit inside of it. Them i booleaned the rectangles by clicking the cylinder, shift-clicking the other two rectangles them going to Mesh > Booleans > Difference, with that, i now have a screw with a "X" on it.

Later i duplicated my screw up to 12 times, 6 on the left side and 6 on the right side and placed them on the part where you hold the gun and on the receiver.

I then made the all of the shotgun, except the barrels, fore-end and magazine cap "smooth". I did this by using Ctrl+b on them and then adjusting them one by one, and seeing how large or wide their cut edges should be.

After that, i wanted to make a sort of rectangle hole in the receiver part of my gun, where the shotgun shell should come out, it's called a "Ejection port". To do this i had to add a cube and make it into a rectangle, them place the rectangle on the receiver, after that i left-shift-click the receiver, of the gun, then left-shift-click the rectangle itself then i went to Booleans > Difference, with that the rectangle disappeared with a hole on my gun now, which is great. But it's not very realistic, usually the ejection port is more of a capsule shape instead of a rectangle shape but since i didn't want to make things complicated i just used a rectangle for the ejection port, even thou it should be easy, but i was afraid to mess it up. I think all you have to do add a cylinder or sphere and scale and shape it differently then boolean it so the gun has a hole in it, but i decided to make things simple and just use a rectangle.

Then i made sure everything was properly placed and adjusted to my standards, after that i wanted to make some "cut" on my fore-end cylinder, something that will help you grip it, i tried to make a half-donut, make multiple of that donut, then i tried to boolean them in the fore-end, but it didn't quite work because for some reason when you delete certain parts of a donut, it becomes empty inside, and thus it cannot properly do a boolean. When you try to boolean the empty half-donuts with the fore-end cylinder it will make a weird "cut" where only the empty hole of the half-donuts stay, while the cylinder and donuts disappear.

I tried a different way of making "marks" on my fore-end of my shotgun, i add a new donut to my scene and placed it so that the inner hole of the donut had the shotgun in it, with the fore-end in it as seen in the image below with four of them.

I then adjusted and scaled the donut so that a line it properly there when i boolean the donut. Then i made 3 more copies of the donut, so 4 in total, then at last i boolean the circles and with that my fore-end of my shot gun has lines now, but the lines are a bit large and are too in the fore-end itself, so i pressed Ctrl+Z so that i can go back to before i boolean the donuts. I adjusted the donuts properly, basically lower their height then boolean, i did if i didn't like it, i could go back with Ctrl+Z and adjust the donut accordingly.

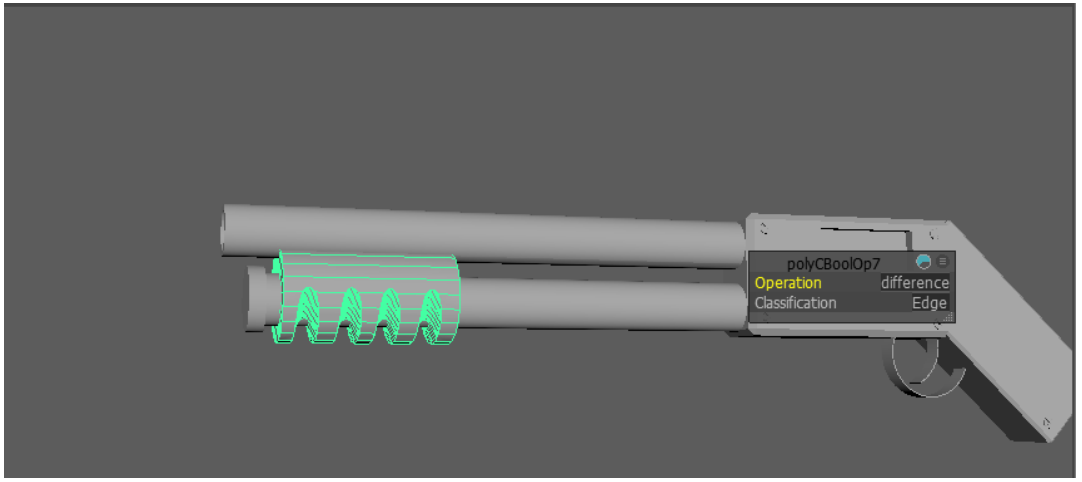
On 16/12/19: Next i wanted my grip of my gun to not be so "blocky" and more smooth, thin, first i increased how long my grip becomes because it was a bit too short in my opinion, then i rewatched a video on how to add add divisions (edge) on a 3D object, i clicked on the grip part of the gun, while i was in object mode, then i went to Edit Mesh > Add Division, with that my grip cube now has multiple lines on it, which means now it has a lot more vertexes and edges. I tried changing the vertexes and moving them around so the grip is smaller, but it was hard because there were to many vertexes and edges, i can't work like this because it's hard to be precise with my modelling like this. I can see in the test box to the right of the scene that it's Divisions in 4, so i try yo change it to 3 and with that the rectangle i have is a lot more clean with less lines on it. Now i can accurately move my vertexes and edges so that my grip becomes not so "blocky", what i mostly did was select a handful of vertexes along the Z axis and then move them, i did that with each line until the grip was slim and looked good in my opinion.

On 17/12/19: I decide to do the same thing i did on 16/12/19 but on my home computer, instead of the computer at college, because my model here is a bit different and better in my opinion. I went and added more divisions on my grip, i clicked on the grip, went to Edit Mesh and added Divisions, then i right-clicked and hold, so i can choose vertexes, instead of being in object mode, when i tried to click or change it, it appeared in a yellow, red and black colour and when i tried to move one vertex, it moved almost the whole object, which isn't what i want.

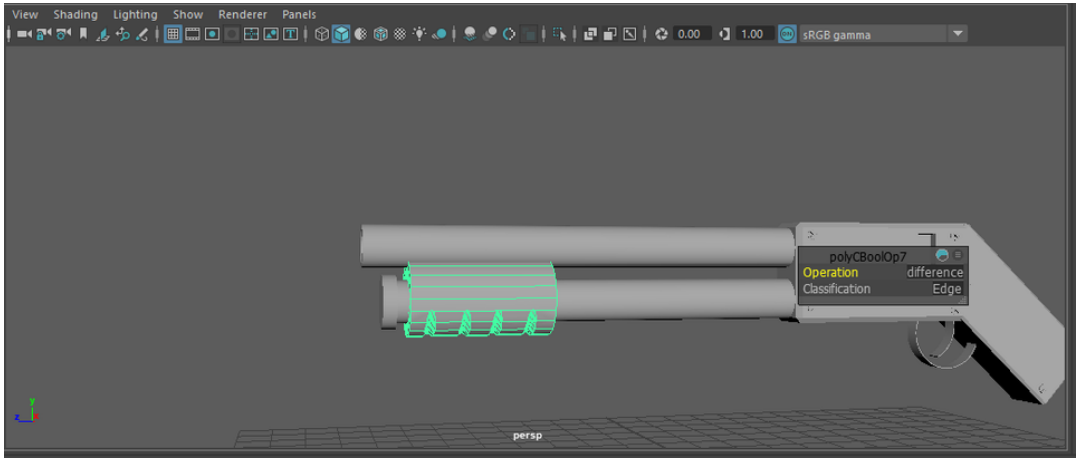
I wanted this weird yellow grid to disappear but i didn't know how, so after i searched on the internet and after watching one video later, i learned that the weird yellow grid is called "Soft Selection", it makes you be able to move on thing on the object while moving everything on it, a more organic movement, the video i watched also helped me learn how to turn off this, Soft Selection, all i had to do was double-click the move icon on the right of the scene window, go to Soft Selection and uncheck the Soft Selection check box, that fixed the problem i was having, now i can modify my grip in the way i want.

So i went to a 2D view and started to modify the vertexes of the grip of the shotgun, i modified it to be more slim and less "blocky", then after i did what i wanted i tried out the 1, 2 and 3 buttons that change the smoothness of a object, i tested this on my objects and either it didn't do noticeable changes or it changed to much that it was ugly. I left every thing has normal except the grip, that was left slightly smooth, even though it wasn't noticeable, i left it like that because i liked it.

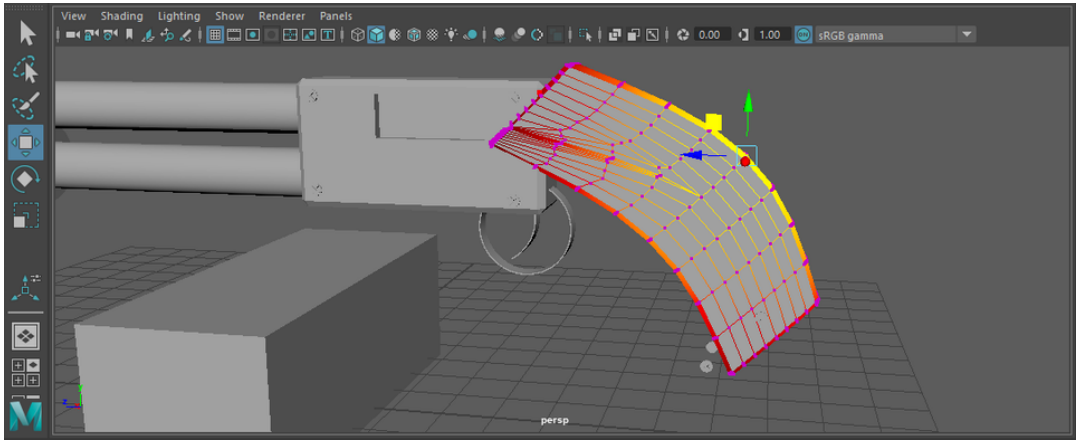
After that i added materials to my shotgun, i gave my barrels, magazine cap, screws and receiver the Phong material, so it can be more shiny then the other parts of the shotgun. I then gave the fore-end and grip of the shotgun the Lambert material, later i decided to colour my shotgun, on the barrels, magazine cap and receiver i painted it a black colour, then on the fore-end and grip i coloured it brown, so it would look like wood, then on the screws i left it grey because it looked fine like that.



The result of my alternative solution i used on my shotgun, but as you can see



The result of my alternative solution i used on my shot gun, but with improvements now, all i had to d... was lower the height of the donuts i had on the fore-end of the shotgun.



The Soft Selection problem i was having, and what happened when you try to move even one vertex.

Evaluation:

I have achieved what i set out to do, and what i wanted to do was a shotgun, not a very good looking shotgun but a shotgun nonetheless, i originally didn't thought of adding colours or materials to my shotgun but turns out that it wasn't that hard to add.

During this process of my solo project i have learned many thing, including how to properly research the things i want to add to my 3D object. I also learned more about booleans, how to add divisions to my objects, soft selection, hot to turn it off and what it does, what the "T" button does on a object and what i can do to my objects. I also learned that i need to manage my time better then what i did here, i need to at least do something minor everyday.

I can improve my self more in the future by asking more help from my peers and teachers, since they may have different points of view and additional help to give me, which can be useful to me.

My strongest areas were of moving, rotating and scaling basic 3D objects and adding materials and colour to my objects. My weakest areas are the more complex modifications i had to do on my objects like booleaning, using the extrude tool and trying to move or change my objects in organic or complex ways, like the soft selection problem i had, as it was complex and i didn't understand what it is or what it does.

I didn't get any peer feedback mostly because i didn't ask for it even though getting feedback and help is very useful and good for my projects and future work. Although i did give a peer some feedback on a work of his, telling him what he can do to improve his work and what kind of small details he can give his work.

This experience will help my future solo or group work by making me aware of the problems i can fix, and how i can fix them through experience and research, with more knowledge the better my future work will be.

I can improve my research in the future by going to site of people having the same problem as i'm having. I also can look into more professional videos in youtube on how to do something in maya. I personally think i should do more primary research in order for my project to be better.

I could develop my reflective writing in the future by reflecting on my work while i do it, not after i finish it, i learned that videos on youtube help me a lot so i think i should keep doing that if it still helps me, the reflective model for me doesn't really matter as long i explain what i did and how that made me feel and how that will affect my future correctly, then any reflective model works. Without the video researches i did, i wouldn't be able to solve the problems i had, especially the divisions i needed on my objects problem, video resources are quick and easy to understand.

I could improve my problem solving further by researching properly before doing something, if i do that i probably wouldn't have a problem to begin with. I also should improve on making a contingency plan if the work i'm doing is too complex or just not working, i think my contingency plan should be similar to my original plan but more simple and achievable in time, if necessary, this will be only in case of emergencies. I had a problem while doing the solo project, which was the soft selection, i could have done more research instead of just watching that one video in order to solve that problem differently.