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Independent Study Mentorship

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<div align="center">ZBrush Sculpting</div>

<div align="center">Assessment 1: Research</div>

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Marshall, Justin. "Your First Day in ZBrush." *Pluralsight*, Pluralsight, 8 Sept. 2014,

app.pluralsight.com/player?course=your-first-day-zbrush-1774&author=justin-marshall&

name=your-first-day-zbrush-1774-m1&clip=0&mode=live.

ZBrush is a three-dimensional sculpting software that is from Pixologic and is designed to be a sculpting software that is similar to working with clay in the real world. This is a software I learned about through my mentorship last year and wanted to explore further due to its importance as a software to create concept art in a time efficient manner. When I learned of ZBrush last year I was told that it was often used for concept art t in order to receive approval of a design before either creating a model from scratch or retopologizing the mesh from ZBrush. Due to its importance to the 3D industry in games and film, I started learning ZBrush last year and will be continuing to work on my skills this year. To learn this software I began by following tutorials in order to learn how to create a simple 3D sculpt of a creature.

There are many ways to approach sculpts in ZBrush, but after trying a few different approaches I decided to use the method of using ZSpheres in order to create armatures. The armatures can be used to create a pose for the character and are used as the basis of the rest of the sculpture. Following the creation of the armature, I used a tool called Adaptive Skin which adds volume to the armature that can then be used as a base for the features of any given figure. I then moved on to use the dynamesh tool in ZBrush. This is a powerful tool that allows for pieces of the model to be moved and for features to be added without stretching since dynameshing an object recalculates the topology. This allowed for a very smooth sculpting process and I was able to add big base features of my character such as eye sockets, brow line, and tentacles early at a low resolution using the move brush. After the major features are in place the ZRemesher must be used to create a better topology for the character that will then have a lower polygon count.

These foundational steps led me into the sculpting of the model which made use of the clay build up and Damien standard brushes in ZBrush to progressively add more detail to the sculpt. The most important factor during this phase of sculpting is to stay in a lower resolution as long as possible before moving up in the subdivision levels. This makes sure that big changes are made at low subdivision levels and that as the resolution of the model increases the detail added is smaller and smaller. The sculpting phase leads to a more refined part of sculpting that is focused on adding high-frequency detail to the skin of the creature. This uses alphas in ZBrush to add detail to the skin which adds a lot of interest to the character very quickly. This has to be done at a higher resolution so that all of the brushes detail appears on the model.

Following the sculpting, I began working on the textures of the model using the various materials, lights and painting features of ZBrush. The model of the character used a basic

material while the eyes used a toy plastic material. For the lighting, I added an extra light on the side of the model that had a blue hue. I then moved into the Polypainting process of the character which changed the entire color of the model. The painting process began with a flat coat of color followed by various other colors that were layered on top of the flat color. Additionally, using alphas I was able to add more interest to the texture by adding different colors in a varied pattern. Following the polypaint process, I finalized the project file and add small details to the sculpt through projections and small additions to the expression of the character.

I plan on continuing to learn ZBrush throughout this year since it is very useful software to know and it was also very enjoyable to work in after I had a solid understanding of the basic navigation which was very different from other 3D software. I mainly want to focus on character and anatomy sculpting early on so that I have a foundation to work from to create more sculpts in the future that I can then use as assets in different products. Additionally, ZBrush has the ability to work in conjunction with Autodesk Maya which could be helpful in the future. This compatibility can be used to create assets that have parts that would be best made in one of the softwares that are later combined to create an object. Overall ZBrush has many use cases that will make it a very beneficial software to know in the future.

Notes

- Begin by using the ZSpheres to create a basic armature from there the rest of the sculpt can be made.
- Begin with the ZSphere for the waist then move onto creating the legs below that by using more ZSpheres.
- Move, scale, and rotate the ZSpheres in order to create the armature in a neutral pose.
- Make an adaptive skin for the armature with around 5,000 polygons.
- Dynamesh is used to create new geometry off of the original mesh. This allows for geometry to be pulled off of the creature without stretching.
  - Recalculates the topology when changes are made to the mesh.
- This is good for adding features such as tentacles using the snake hook brush.
- Additionally, features can be changed using the move brush to add a brow line.
  - Insert Sphere to create a socket for the eyes to go into later on.
- ZRemesher will optimize the mesh of the creature.
  - Provide the ZRemesher with a target number for the polycount.
  - It will calculate a new topology that will work with your models' shape.
- This process will allow you to start with a model that has a good topology and a lower resolution.
- As you need more resolution on the model divide the model so that the model has more subdivisions,
- To sculpt the character begin by using the move brush in a large draw size to make the general shape of the model.
- Then use clay buildup to add geometry o areas and refine shapes around the eyes and snout.
- Additionally, use the Damien standard brush to add wrinkles and divets in the model.
- Slowly build up your subdivision level so that the big shapes are made at a low resolution and the small detail are made at a high resolution.
- Now change the material of the sculpt to the basic material.
- Changes to specular highlights, diffuse, and other properties can be made to the material.
- Select the eyes and fill it with a toy plastic material.
- Under the lights, tab add a light with a blue tint to the side of the model to add to the interest.
- To add color to the model use polypaint.
- Begin by filling the entire model in a flat color to work from.
- Use the color picker and a standard brush to add color to the model.