

WebGL Nyan Cat

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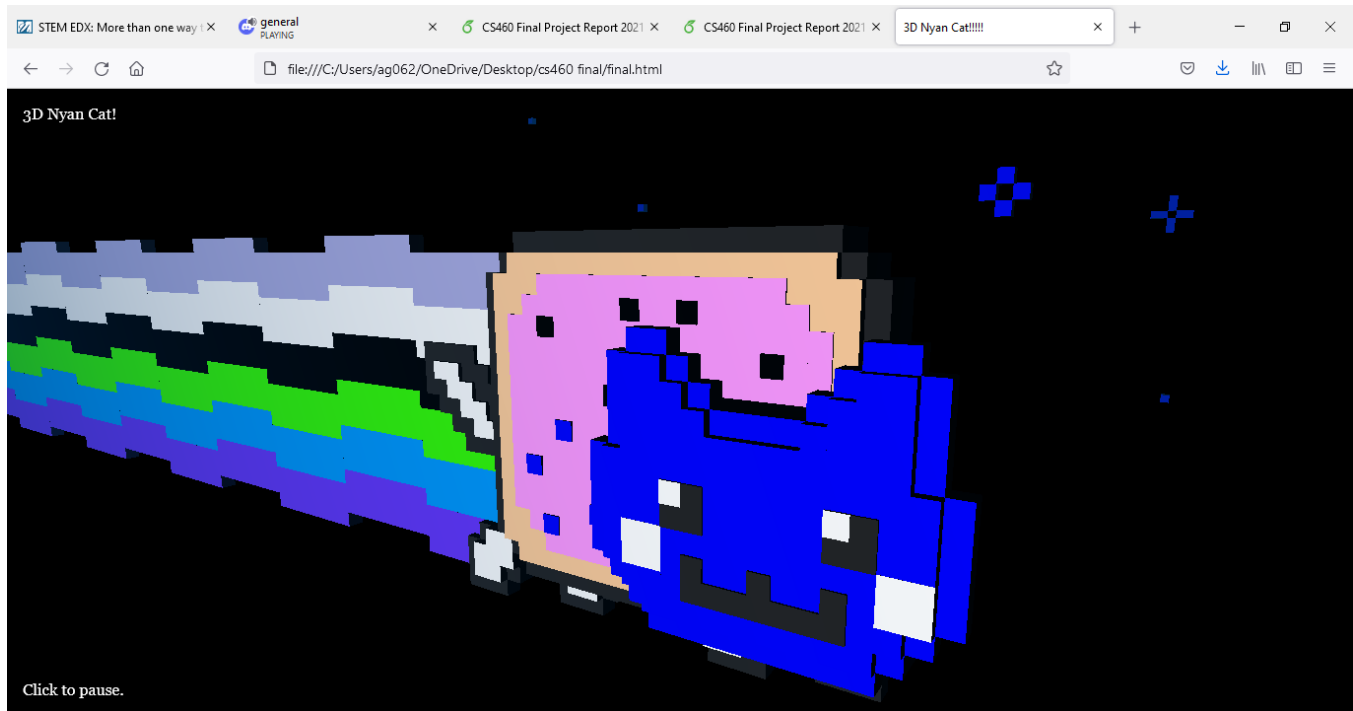


Figure 1: Add a nice wide figure here and replace this caption.

ABSTRACT

The goal of my project is about making changes to a Nyan Cat that already exist. The Nyan cat I worked on could move and also it has the background music on. The cat, for the most part, does everything that it expected of it. The cat moves on its own and the person that access the website has the ability to pause it.

KEYWORDS

WebGL, Three.js, Nyan Cat

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1 INTRODUCTION

The project is important due to how it models something that is popular, like the Nyan cat, really well. If you compare the Youtube video of Nyan cat to the one done in the project, you could see that the project does everything that the video does. It is basically a 3D model of something that comes from a video. The project is also important because it shows how easy it can be to change the nyan cat that already exist.

My contribution to this project is in making the nyan cat different than the one already made.

2 RELATED WORK

Three.js [1], WebGL[3], <https://cwacht.github.io/nyancat/>[2]

3 METHOD

The project uses WebGL and Three.js. The Nyan cat is created mostly using the Three.js's MeshLambertMaterial and BoxBufferGeometry methods. These two methods allow the cat to be created by specifying the size of each individual BoxBufferGeometry, the location of the BoxBufferGeometry, and the color of the BoxBufferGeometry.

3.1 Implementation

The code that is used to create the blocks that creates the Nyan Cat is mostly found in the function named create. The functions creates a new BoxBufferGeometry, puts a color to it, and also takes paramters to where it will be located. Below is an example of code function create(object, x, y, z, w, h, d, c)

```
var material = new THREE.MeshLambertMaterial(
color: c );
var geometry = new THREE.BoxBufferGeometry(w, h, d,
1, 1, 1);
var mesh = new THREE.Mesh( geometry, material );
mesh.position.x=x+(w/2);
mesh.position.y=y-(h/2);
mesh.position.z=z+(d/2);
object.add( mesh );
```

The cat is created using this code. The music is implemented by having the code play the file that contains the music. The name of that file is musnyanlooped.mp3

3.2 Milestones

How did you structure the development?

3.2.1 *Milestone 1.* Coming up with what changes I could do.

3.2.2 *Milestone 2.* I tried making the Nyan Cat "UMB Theme" by changing the face of the Nyan cat from Gray to Blue. I also changed

the color of the rainbow. I also changed the color of the background. I also changed the color of the stars in the background.

3.3 Challenges

- One of the biggest challenge I had with this project was trying to make it unique. I found it difficult to make this project truly unique.

4 RESULTS

I was able to make the changes that I wanted. The color of the cat I think is more towards a "UMB Theme". The link to the project is <https://project591.github.io/cs460student/final/final.html>

5 CONCLUSIONS

With WebGL and Three.js we can make 3d representations of 2d objects. This project shows how something popular, like the youtube video of the Nyan cat can be represented in a 3d figure. This shows what one is capable of doing with three.js and WebGL. It also shows how simple it can be to create something, like the Nyan cat, using just WebGL and Three.js.

REFERENCES

- [1] Ricardo Cabello et al. 2010. Three.js. URL: <https://github.com/mrdoob/three.js> (2010).
- [2] 3D Nyan Cat!!!!, <https://cwacht.github.io/nyancat/>
- [3] "WebGL." The Khronos Group, 19 July 2011, <https://www.khronos.org/webgl/>