**Final Essay – Fernando Brito – Math Analysis B4**

Starting out, I had no clue what to expect from Math Analysis, I didn’t even know it was a class for coding. I started out working with the Grid, to Bricklayer Lite, and will eventually progress to Bricklayer. I feel confident that I can create patterns, images, and any 2D material on Bricklayer Lite using functions and various other shortcuts to make my code log a lot shorter.

Grid was my biggest enemy in this class. I remember having to place each little pixel individually and it was the most tedious thing ever. I didn’t realize that it was a head start to the whole Bricklayer process. My first Grid assignment was the pattern, it was only an 11 x 11 grid, but I had to place a total of 121 pixels. If I would have done this on bricklayer lite I would have created the two different sections of my pattern, create it into a function, and call it to repeat the pattern, it would be a much more easier process and I would be able to fill out a 128 x 128 grid faster than it took me to do the simple 11 x 11. We eventually started doing pixel art on Grid, which again, was the worst thing to do. This time it was on a 26 x 26 grid, I decided to choose a picture that was already cut into pixels because I still didn’t understand the process of making a real image into a grid. I colored in each pixel individually and I made the mistake of going for a background it took me a good class period to fill out the background. If I could’ve done it on level 3 of Bricklayer Lite I could’ve simply placed a square that would cover the entire grid. The Krabby Patty I had no visual reference I simply did it to try out what it would be like to make something from my head.

As we were getting acquainted with Bricklayer Lite we opened level 1, our first assignment was to learn how to open a log of code and how to save. In level 1 there was only certain options for placing blocks you couldn’t pick how big it was, it would make you pick from 2 x 3 or 2 x 1 etc. I simply decided to place 3, 2 x 1, blocks next to each other. In our next assignment we learned about the objects in Bricklayer Lite, I just placed four blocks overlapping each other. In this the overlapping was the difficult part because you had to place individual blocks to make the illusion of it overlapping. I can say level 1 was the easiest on the mind, but heavy in code and it was almost like using the Grid.

Our next big project assigned to us was creating our name on a grid in Bricklayer Lite. I decided to use level 2 because level 3 seemed too ambitious at the time. I didn’t realize that I would have to place multiple 4 x 2 blocks in order to fill up the space, the code kept accumulating as it was a 64 x 64 grid. If I would have done this through level 3 I could have just had one bar of code to fill up the background. Anyways as time consuming as that was it took me about a whole class period, but the tricky part was just about to begin. I decided to go with part of my first name and my whole last name just because I figured my first name was too long. I used 2 x 1 rectangles to make the first line on the F and I decided to make that its own function that way every time I had a line in the letter such as E or T I could just call the line function instead of going through the whole 2 x 1 process. For the flag project I did a similar technique, I created each flag in its own function and called it multiple times to make it repeat. Each flag made was done with either circles, lines, or simple blocks.

For More Patterns, I created a 16 x 16 block with a designated pattern that would eventually repeat throughout and just made a row and repeated the row in order to decrease the amount of code. I did this to be able to critically think about what I can do with certain code lines. For the ring pattern I used a similar thing, I made a row of circles and called it again instead of re-placing each circle. The circle I did by placing one red solid circle and using rings to create the patterned effect with the white. Using these both new found techniques I made one of my final projects this semester which was the all functions assignment where I used the circles, rings, lines, and the use of functions to repeat the pattern.

Throughout this semester of Math Analysis I have learned a lot, I never have found interest in the background software of our technology but now I can understand code and will eventually start making my own code on bricklayer.