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| 15/11/2019 9:00 AM | 4 hours. | Had some confusing issues with my code that were difficult to debug due to there not being any immediately apparent errors. After debugging I realised my ‘DehomogeniseVerticies();’ method in the model class was not functioning correctly and was not affecting the transformed vertices in any way. |
| 15/11/2019 2:00 PM | 2 hours. | I found my issue was that I was using a for each (Ranged-based) for statement in the method. After researching this I found that when I was editing the iteration variable, I was only editing a copy of the variable so my Dehomgenisation was not affecting anything. I only realised this after setting a break point to pause after all the vertices had been dehomogenised and then stepping through the program and seeing all the dehomogenised vertices returned to their previous state after the loop had ended. |
| 18/11/2019 11:00 AM | 2 hours. | Added the cross product and dot product multipliers to the program. After watching video tutorials on it. |
| 18/11/2019 5:00 PM | 2 hours. | I watched several videos on debugging so that I can check through my work easier and start to understand what my code is doing whilst debugging when it isn’t immediately apparent. I now understand that break statements are useful for allowing a user to check what values are at a given point; allowing a user to step through a program starting from a specific point; checking whether certain lines are running, and I am also now aware of the fact that break points can be used conditionally. I am now aware that break point can be used after a certain number of iterations through a line of code or when a variable is equal to a specified value. |
| 22/11/2019 8:00AM | 3 hours. | Added Sort() to my model class. I went back to my GetPolygonCount() method and realised I had mistakenly used sizeof() instead of size() to return the number of polygons in my vector of polygons. This was causing me some frustrating issues a few weeks ago. I cleaned this up and then added my GetPolygonCount() method back into a loop that had had the method removed due to errors that I didn’t realise at the time were related to this. I had some issues with my backface culling. Initially the model appears to be correct, but after a full rotation, the rear of the square will show with no other faces being shown. |
| 24/11/2019 11:00 AM | 1 hour. | I managed to fix my error with the faces not showing. The issue was related to one of my methods still using sizeof() instead of size(). |
| 26/11/2019 8:00 AM | 3 hours. | Started on week 8 and worked on getting the solid figure working. |
| 26/11/2019  7:00 PM | 2 hours. | I got the solid figure drawn and then experimented using sin waves to gradually increase the colour components of model so that the model would smoothly transition from no colour, to vibrant colour and then back to no colour. |
| 27/11/2019 11:00 AM | 3 hours. | Created my directional light class and started building it into the project. I had some issues but after speaking with my peers we realised the issue was just down to maths errors because of the misplacement of brackets. |
| 30/11/2019 9:00 AM | 3 hours. | Spoke with a colleague about the way the model must be loaded into the project because the way the lighting was shown on with the directional light led us to consider the way the model was being loaded in. Ultimately concluded that the model must loaded in upside-down which would explain the flip in the y axis in one of the earlier transformation matrices. We didn’t check to see if this information was included in the slides somewhere. |
| 30/11/2019 5:00 PM | 1 hours. | I started work on the ambient light but after writing it was unhappy with the amount of code duplication and started to consider how I could reduce it. There were a lot of duplicated Accessors. |
| 02/12/2019 8:00 AM | 4 hours. | Watched a few videos on inheritance in C++ and decided that I was going to make a Light class that would contain the accessors for the intensity values for Red, Green and Blue. I would then have all the other light classes inherit from this class.  Added in my Point Light.  Attempted to reduce the code duplication as the CalculateDirectionalLight method and the CalculatePointLight method contained a lot of similar code. I spoke to a colleague on it but ultimately decided that it would be more work than it was worth considering I would need understanding of some new concepts that I would need to research before being able to properly implement. |
| 23/11/2019 9:00 AM | 4 hours. | Implemented a base light class to help reduce the amount of code duplication and continued week 8 work. |
| 03/12/2019  11:00 AM | 1 hour. | Started reading through the week 9 tutorial slides and fixed a few issues with my week 8 code. |
| 15/12/2019 3:00 PM | 4 hours. | Re-read through the tutorial slides and started looking through the Java code mentioned in the tutorial.  Started research on the standard algorithm and tried to wrap my head around some of the maths. I chose to focus on standard algorithm since the maths did not seem as difficult to grasp as Bresenham and the algorithm did not seem as computationally intensive as Barycentric. Standard algorithm seemed to have a good balance of efficiency and simplicity. |
| 19/12/2019 8:00 AM | 7 hours. | After going through the code, watching several tutorials and speaking with my peers I started to gather a basic understanding of the code and maths involved in the standard algorithm. I started implementation of my flat shading using standard algorithm. I initially used the MoveToEx and LineTo functions before making my own DrawLine function to take their place to break the problem down into smaller chunks. |
| 20/12/2019 10:00 AM | 5 hours. | Started reading and researching Gouraud and investigated how to implement it. Started to try to get an understanding of the maths using what I’d covered so far and implement it. |
| 20/12/2019 5:00 PM | 6 hours | Continued to implement attempt to implement Gouraud using the java code and youtube tutorials. |
| 21/12/2019 9:00 AM | 5 hours. | Made progress on Gouraud and added in the vertex colour and normal calculations. Came across an issue where all vertices had the same r, g and b values. |
| 21/12/2019 4:00 PM | 4 hours. | After being stuck for so long on Gouraud shading, started work on neatening up my work and preparing the display for submission. |
| 22/12/2019  9:00 AM | 7 hours. | Continued to work through my issue with the colour values all being the same for the vertices. It meant the colour value ended up being 204 for all the RGB components. I speculated that this could be down to a Copy constructor though after checking through my copy constructors, I couldn’t find an issue. |
| 23/12/2019 9:30 AM | 7 hours. | There could be an issue with my vertex lighting calculation methods though having gone through them, I could not see the error. I think that there may be a conversion error somewhere in my code though I haven’t been able to pinpoint where. |
| 23/12/2019 8:00 PM | 3 hours. | After working through with a friend, I found that my mistake was a silly copy constructor error. The copy constructor for my vertex that I had checked was not being called in the constructor for a vertex that take a vertex as a parameter. Tried to fix colour shading issues with my Gouraud shading. |