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COMP 476 - Programming Assignment #2

In this assignment, two different pathfinding graphs were made, a tile graph and a Point of Vue graph.

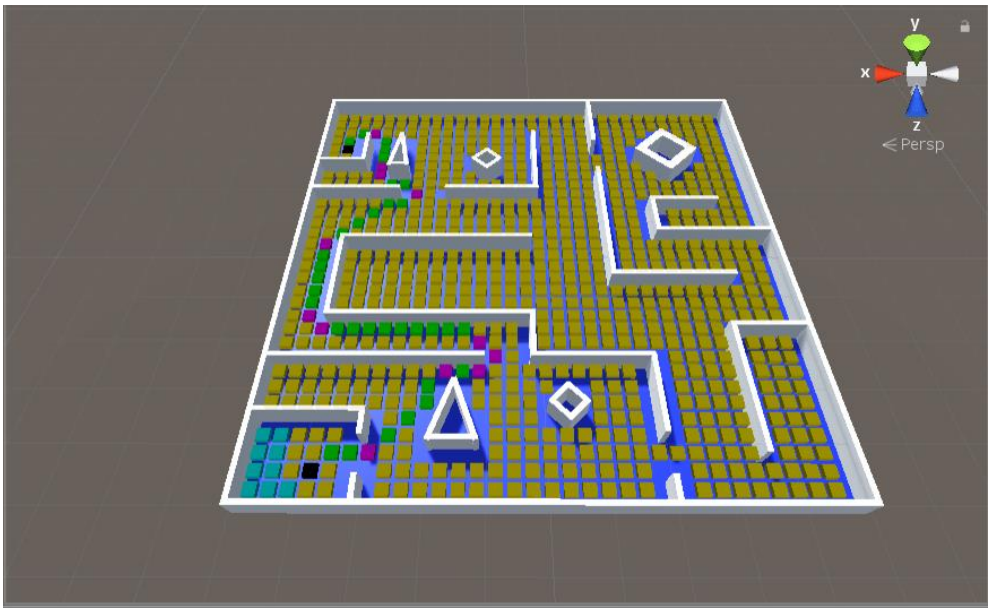
Once those two were made, an A* search was implemented on top of those graphs with three different heuristics.

These next screenshots show the paths for each graph and heuristic.

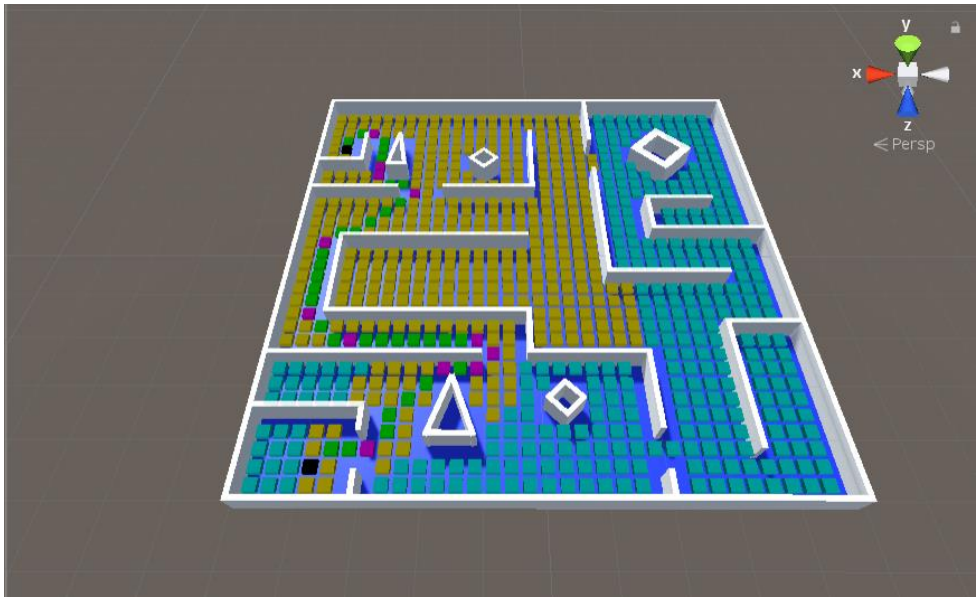
The green nodes represent the path, the yellow nodes the open list, the black nodes are the start and goal nodes, the cyan nodes are untreated nodes, and, for the tile graph the purple nodes represent the smoothed-out path.

Tile Graph:

Null Heuristic:



Euclidian Heuristic:



Cluster Heuristic:

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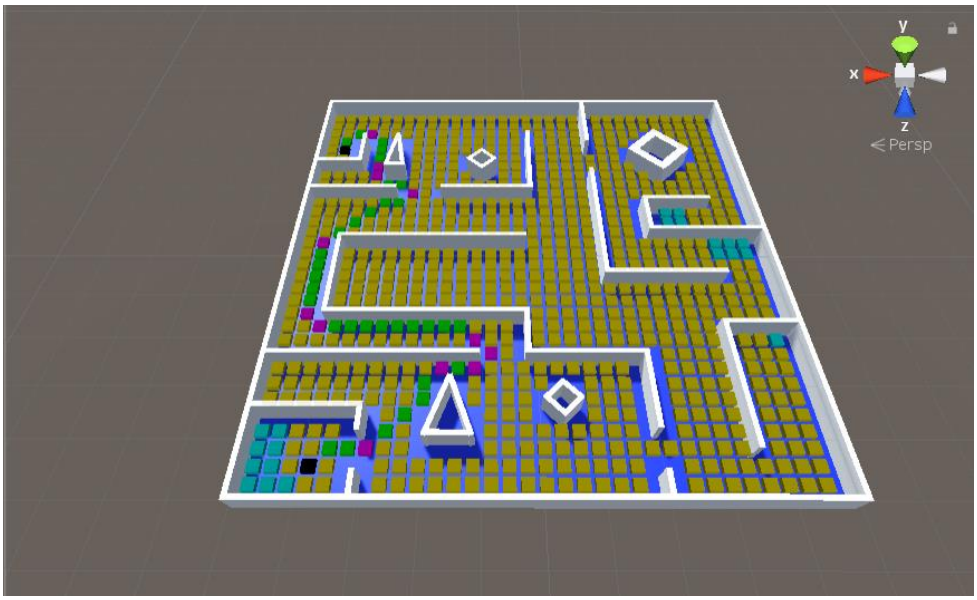
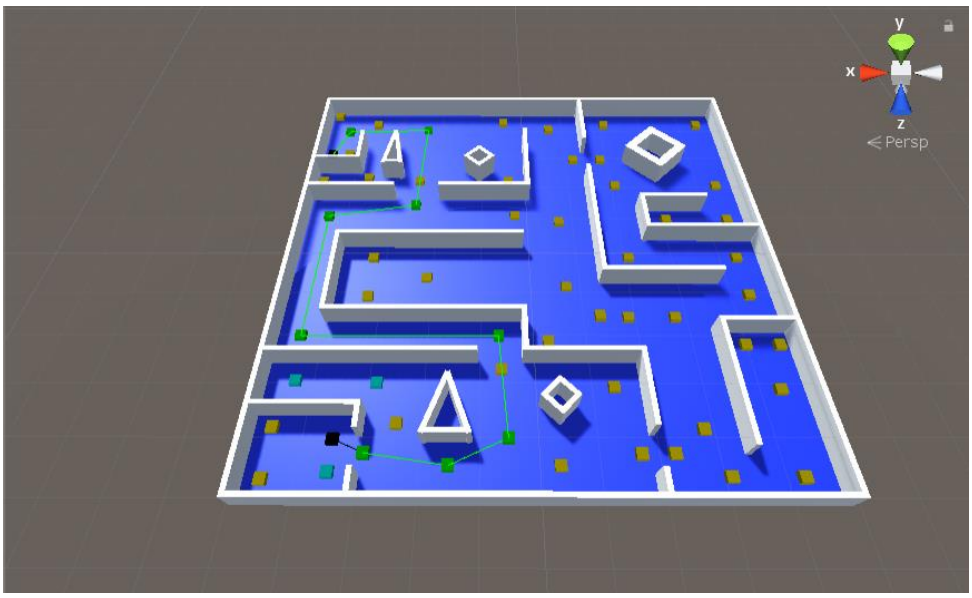
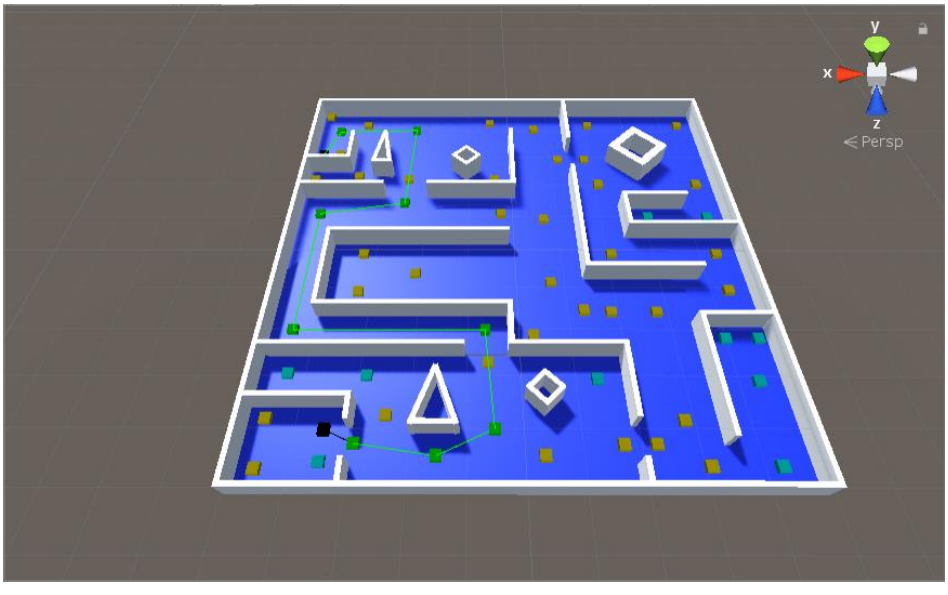


Tile Graph:

Null Heuristic:



Euclidian Heuristic:



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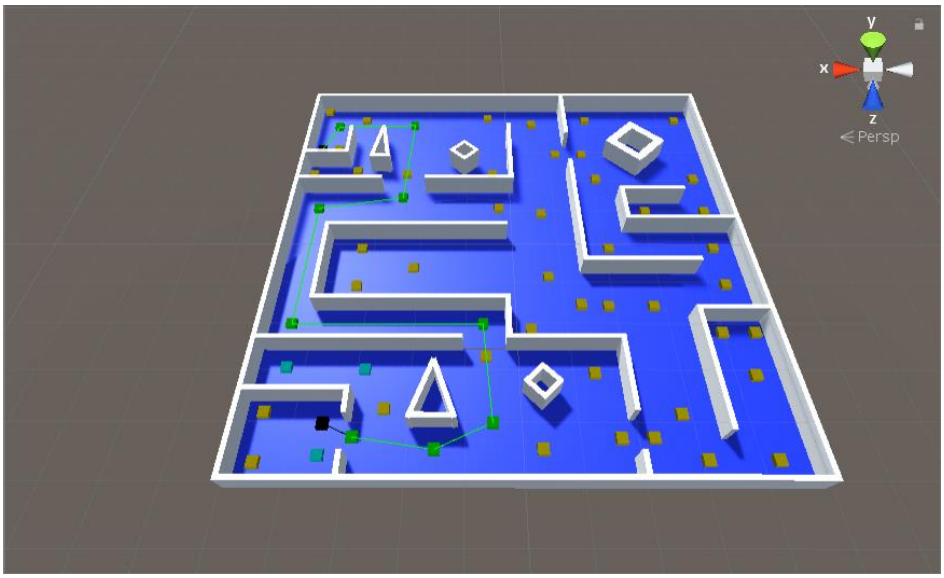
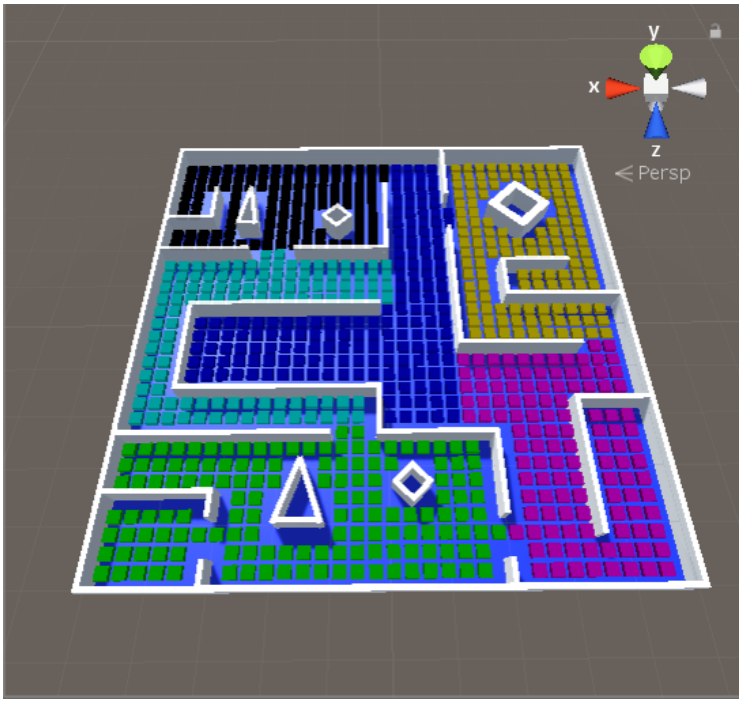
Cluster Heuristic:



Additionally, two lookup tables were made containing the distances between nodes.

For the Tile Graph the table made was :

	Black	Blue	Cyan	Green	Purple	Yellow
Black	0	0.3	0.3	8.494	5.318	2.297
Blue	0.3	0	0.3	3.549	0.3	0.3
Cyan	0.3	0.3	0	0.3	2.121	2.297
Green	8.494	3.549	0.3	0	0.3	5.07
Purple	5.318	0.3	2.121	0.3	0	0.3
Yellow	2.297	0.3	2.297	5.07	0.3	0



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For the POV graph the table made was :

	Black	Blue	Cyan	Green	Purple	Yellow
Black	0	1.177	0.771	10.272	6.437	3.099
Blue	1.177	0	0.985	4.75	0.541	0.66
Cyan	0.771	0.985	0	0.721	3.422	3.704
Green	10.272	4.750	0.721	0	0.56	5.936
Purple	6.437	0.541	3.422	0.56	0	0.96
Yellow	3.099	0.66	3.704	5.936	0.96	0