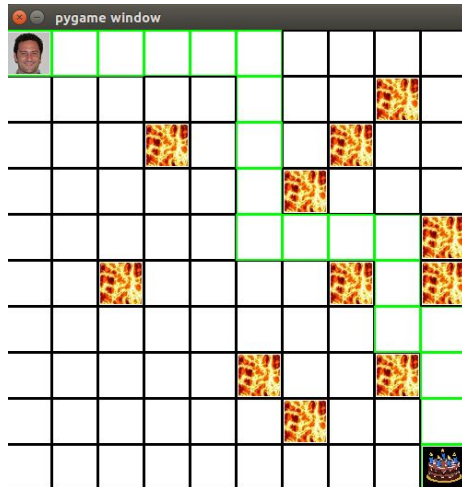
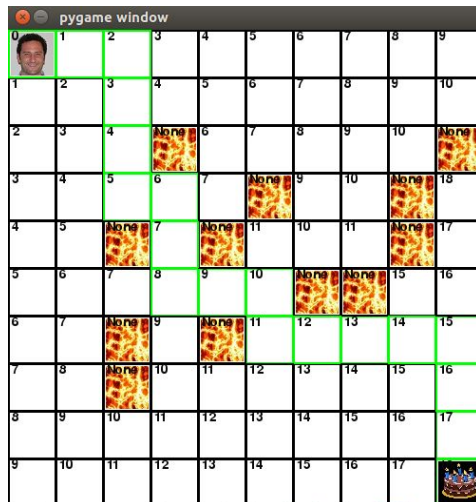


0. The advantages that A-star have over breadth search are that it is much more likely to be resolved quickly because on average A* will find the end point faster than breadth searches because A* basically accomplishes a breadth search but instead of looking at all options will follow the most promising one through. The advantage A* has over depth searches is that A* will return the shortest path it finds while depth searches will return the first path it finds.

1. Nothing uncommented:



Line 171 uncommented: (self.g_cost)



Tells the total cost to get from that point from the starting point.

G_Score is the number of points (action points) that the AI (Paul) is from his starting location. It displays None if it is impossible for Paul to get to that location and then to the cake.

Line 172 uncommented: (self.h_cost)



Tell the cost in action points to get to the end goal from the point the number is displayed in. H_Score is the number of points that Paul is from the final location at any given location. If the given location cannot be reached, it is None because it is impossible for Paul to get there.

Line 173 uncommented (self.f_score)



Tells how many movement points will need to be spent from a given point in order to go directly towards the end.

F_Score is the number of squares Paul must move at least before he reaches the cake at the end of the tunnel. It does not take lava in the shortest path into account. If it is impossible to get to the cake from a certain point, then it displays None.

Diagonal Movement!:



Sometimes, Paul will find his path blocked and he cannot move through the cardinal directions. Then, he must find a new way through--diagonals. Although this movement may take 3 movement points, is actually only adds on one when it can be thought of as Paul moving through two tiles in order to get to the final tile. The extra movement point is worth it if the path is otherwise blocked or if there is a large side route that he must go through that could be shortened.

Jumping!



If a path is blocked so completely that diagonals will not work, Paul sometimes has to gather his strength, spring into the air, and use 8 movement points to hop over the infernal lava tiles. After all, he can't touch the floor if the floor is lava!

Not in my swamp!



Swamps have arisen. Somehow, the lava hasn't made them evaporate but let's ignore that for now. Paul is able to pass through, but 3 movement points is added moving into the tile as can be seen in the above picture. He could jump over them, but there is no point as he saves movement spaces this way.