Accesing the edges, checking for existing edge takes O(1) using the hash table.

Checking terminal node takes O(n2) where n is the number of edges.

generateChildren(): This function takes O(2n+3), where n is the number of vertices in the graph. It goes to O(n2) when n grows large.

addparentEdge():This function takes O(n) where n is the number of edges of the parent.

minimax(): This algorithm runs recursively and uses alpha beta pruning. Right now, the move ordering is pessimal so on average it will take O(b3d/4) and best case scenario it will take (bd/2).

Therefore, the program runs in O(b3d/4).