Assignment 2
Best-First search in Graph representation problem solving

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***Abstract*—Main theme of your assignment or academic projects.**

I. Introduction

Best first search uses the concept of a priority queue and heuristic search. It is a search algorithm that works on a specific rule. The aim is to reach the goal from the initial state via the shortest path.

II. Variants of Best First Search

The two variants of Best First Search are Greedy Best First Search and A* Best First Search.

Greedy BFS: Algorithm selects the path which appears to be the best, it can be known as the combination of depth-first search and breadth-first search. Greedy BFS makes use of Heuristic function and search and allows us to take advantages of both algorithms.

A* BFS: Is an informed search algorithm, or a best-first search, meaning that it is formulated in terms of weighted graphs: starting from a specific starting node of a graph, it aims to find a path to the given goal node having the smallest cost (least distance travelled, shortest time, etc.).

III. Algorithm for BFS

Step 1: Choose the starting node and insert it into queue
Step 2: Find the vertices that have direct edges with the vertex(node)
Step 3: Insert all the vertices found in step 3 into queue
Step 4: Remove the first vertex(node) in queue
Step 5: Continue this process until all the vertices are visited

IV. Conclusion

The BFS algorithm is useful for analyzing the nodes in a graph and constructing the shortest path of traversing through these.

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