**Data Structure:**

The data is composed of three parts, the vertice’s position which based on a coordinate system (x, y, z), the tree that connects all the adjacent vertices (or treated as edges), and the related room information (or shelf, computer, and workspace). It also may contain other functions such as calculating the distance from the destination (heuristic value) and adjacent vertices.

Assume we have the access point data which could be represented in a coordinate system (showing in an (x, y, z) format).

Set a queue data structure that stores the shortest path of our algorithm.

Set the real distance for starting point equal to 0

When the requested item is within the same floor (targetGetZ() == userGetZ())

Get the heuristic value (the straight distance from the current position to destination)

Else the requested target and the user are not on the same floor (targetGetZ() != userGetZ())

Get the heuristic value (the distance from user to stairs or elevator)