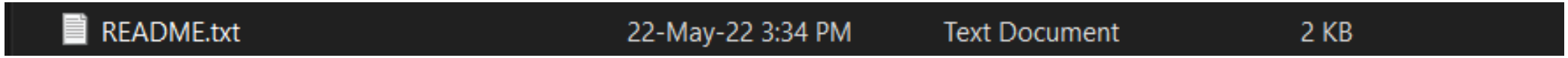
SEARCHING ALGORITHM VISUALIZER

USER MANUAL GUIDE

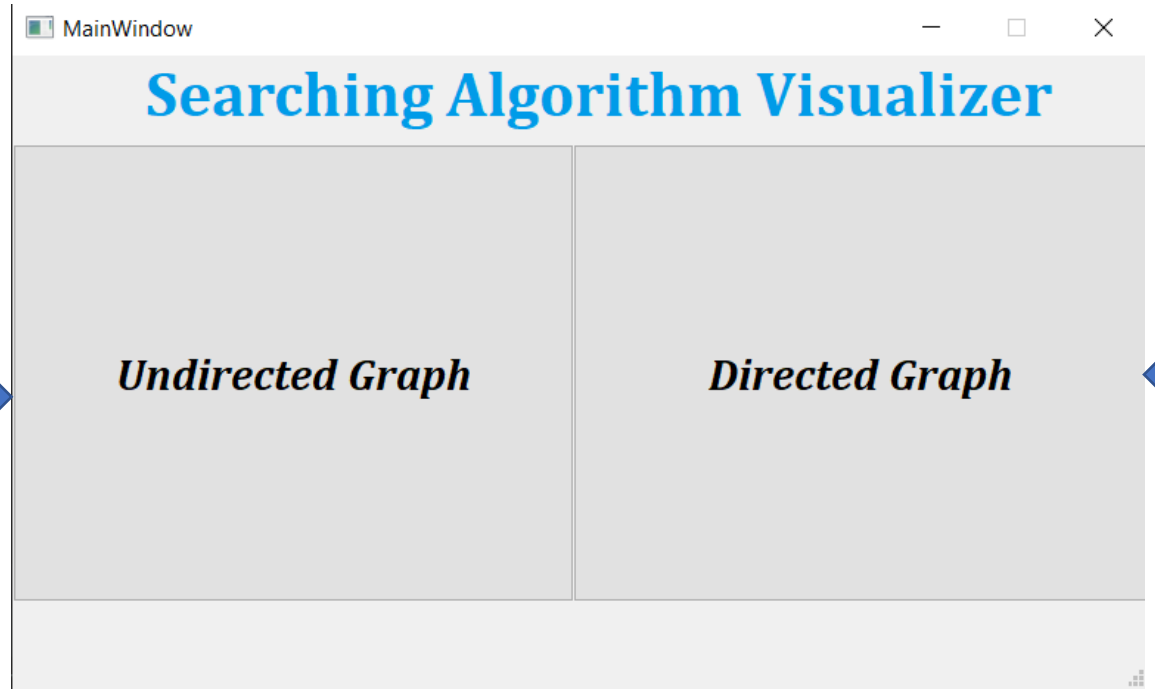
1 Open README.txt

- Open README file for instructions on running app



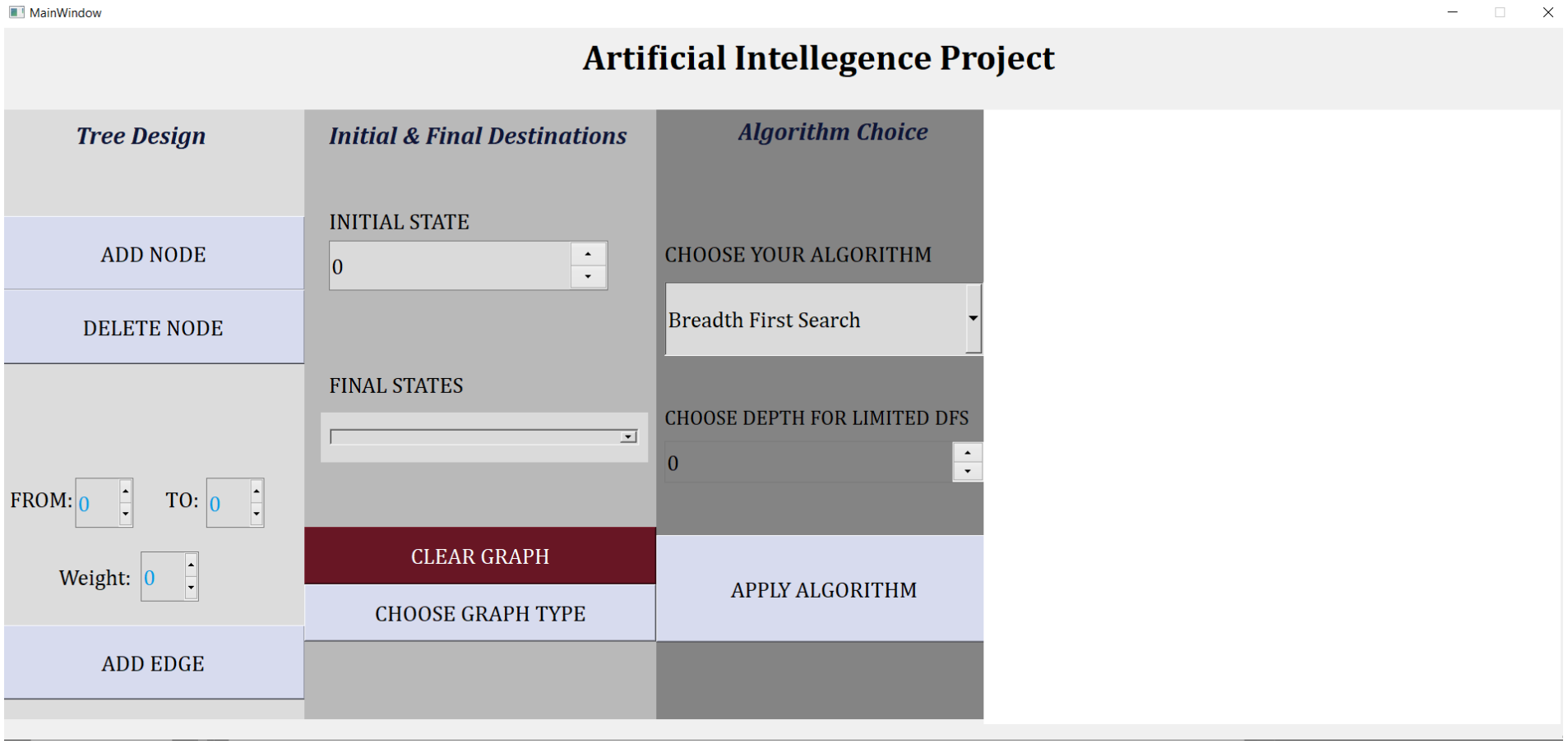
2 Choose Graph Type

Click to select Undirected graph

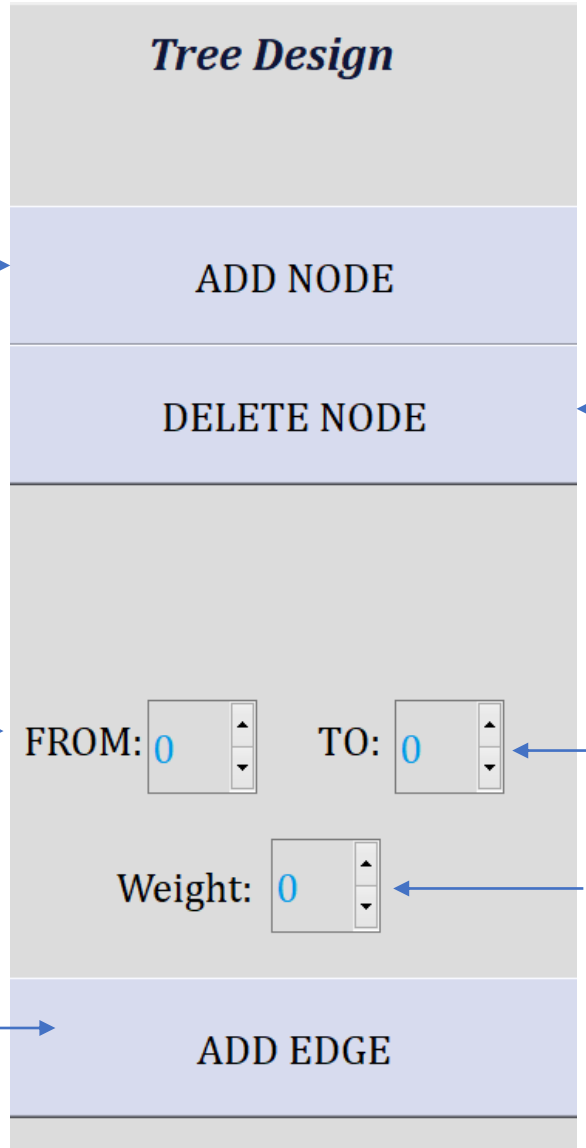


Click to select directed graph

3 Main Window



3.1 Tree Design



Click to add node

Click to delete last node added

Choose the source of edge

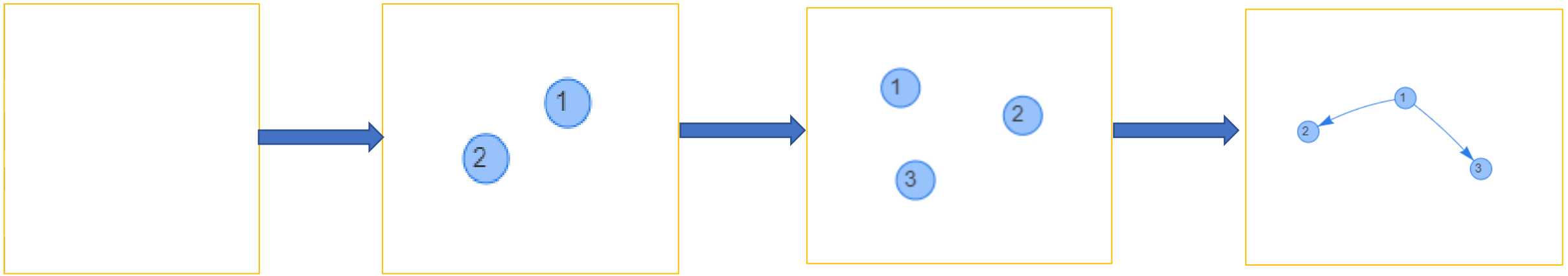
Choose the target of edge

Choose weight of edge to be added

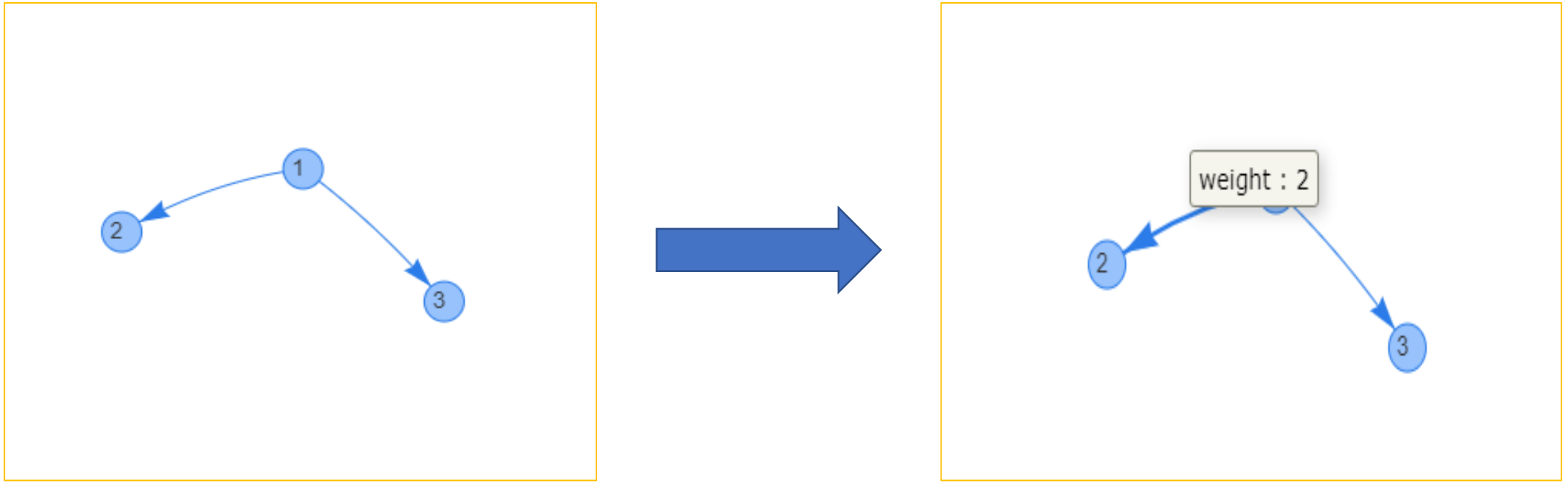
Click to add edge to graph

V Graph Visualization

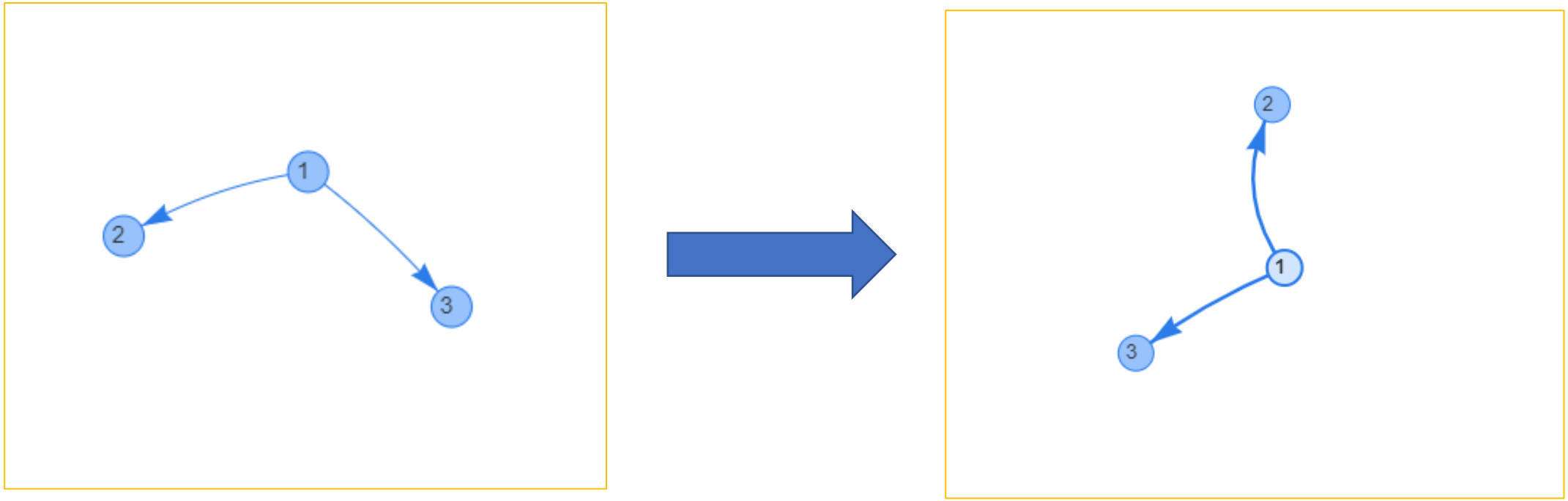
- Any Node or edge added by the user can be seen on the right hand side of the Main window



- Clicking on an edge shows its weight



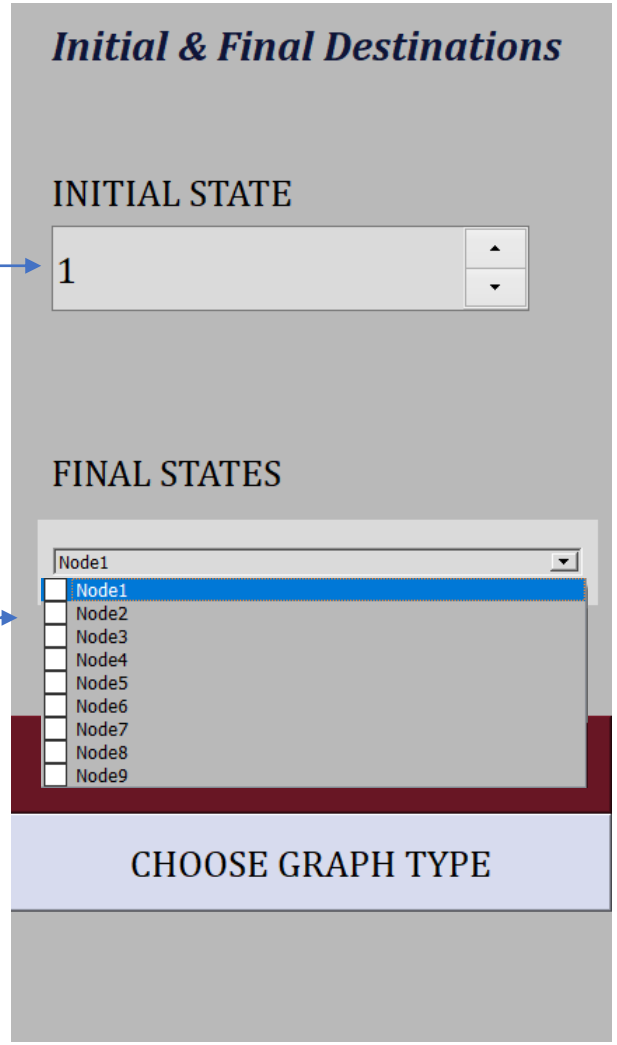
- Clicking then dragging a node toggles movements in the graph to visualize graph freely



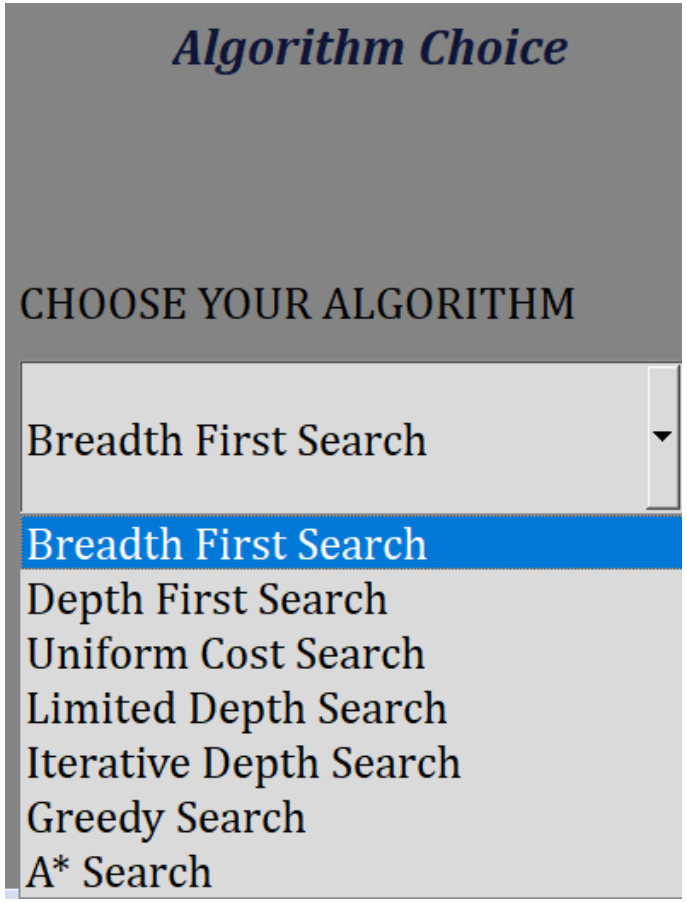
3.2 Initial & final Destinations

Choose initial node to begin search from

Choose from dropdown menu final node(s)



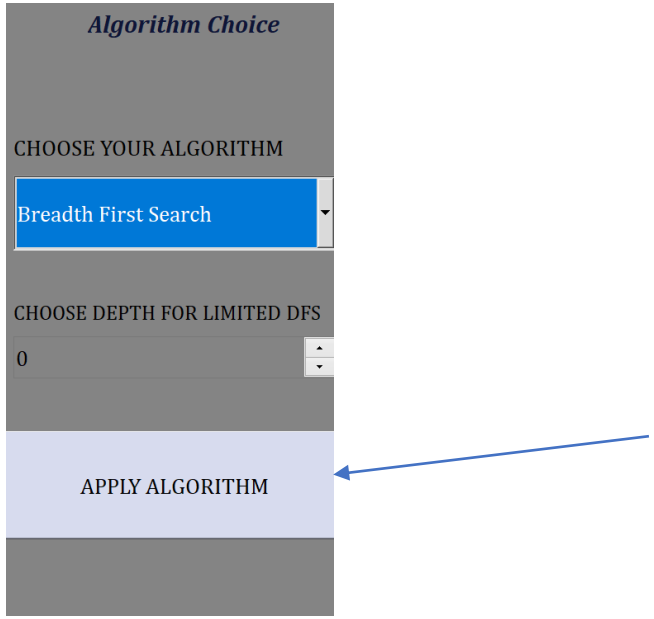
3.3 Algorithm Choice



Choose 1 of the 7 searching algorithms provided in this App

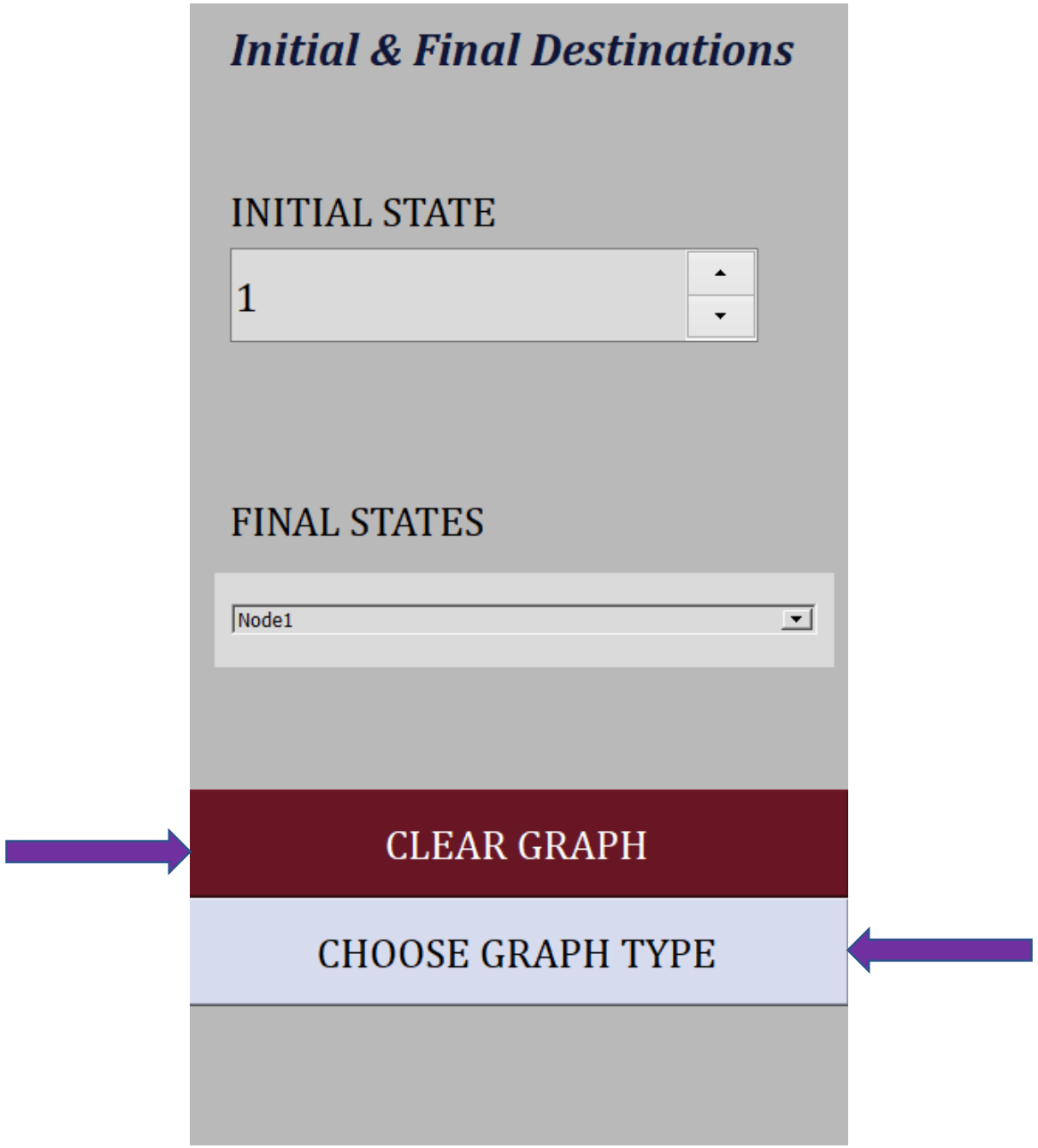
- Incase Limited Depth is chosen , don't forget to choose a depth limit

- Finally click Apply Algorithm



NB

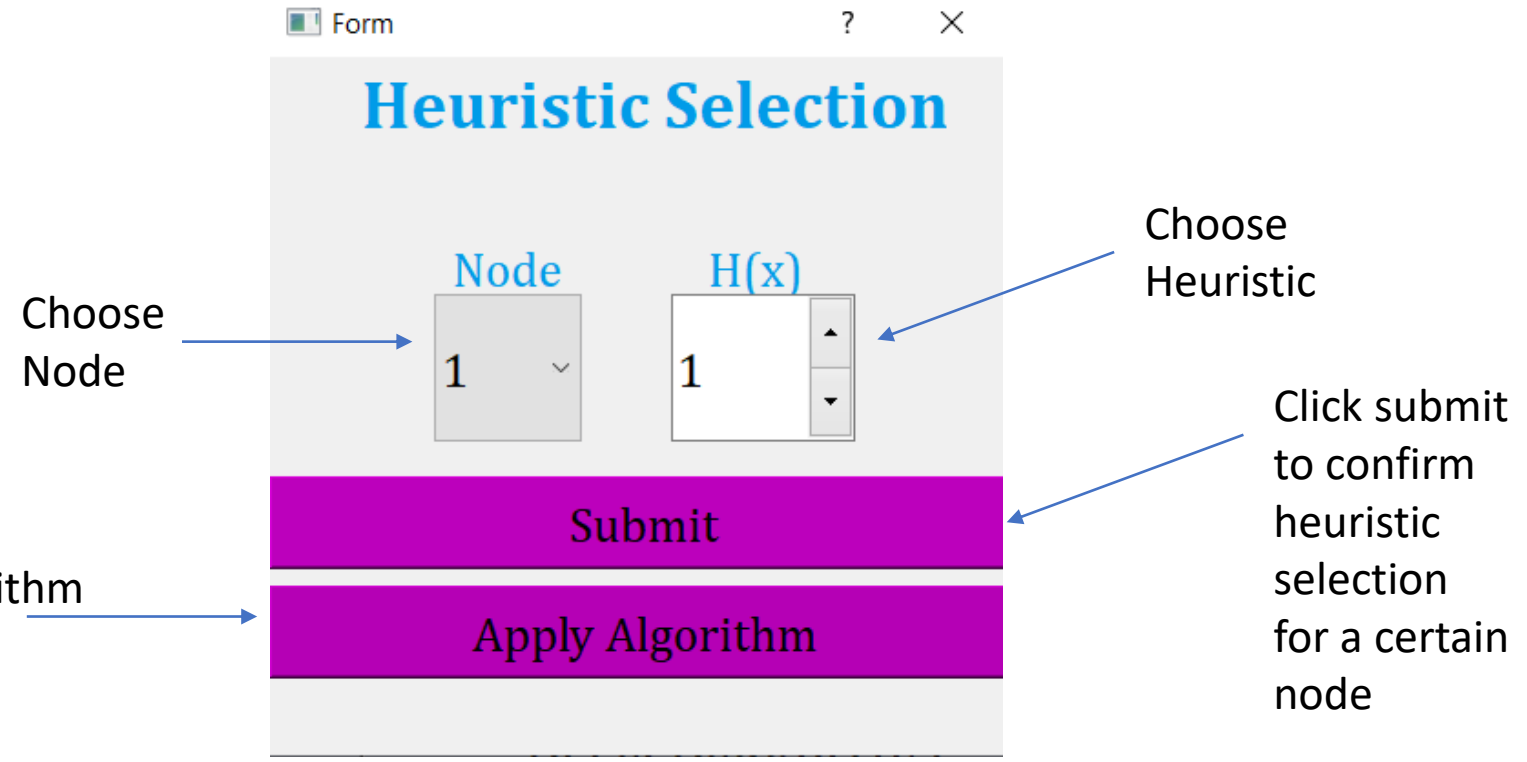
- Incase you needed to draw a new graph you can simply click CLEAR GRAPH to wipe the old graph and start a new one



- You can also go back to Landing page to choose a graph type (directed or undirected) once again

4 Informed Algorithms

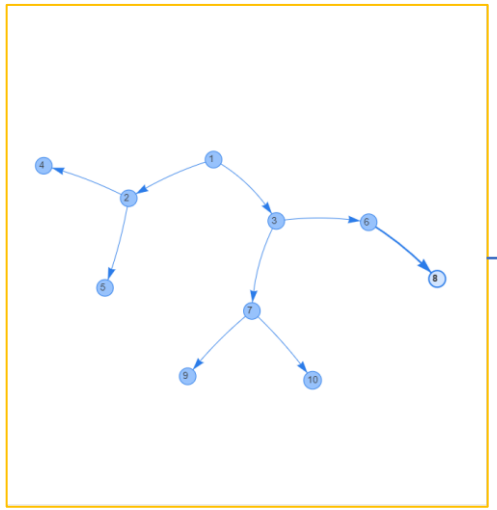
- If Greedy or A* Algorithms are chosen another window pops to allow you to enter the desired Heuristic Value for each node
- Repeat Heuristic selection for all nodes
- Final nodes' heuristic values are set to 0
- After applying algorithm , Heuristic can be seen if clicked on node



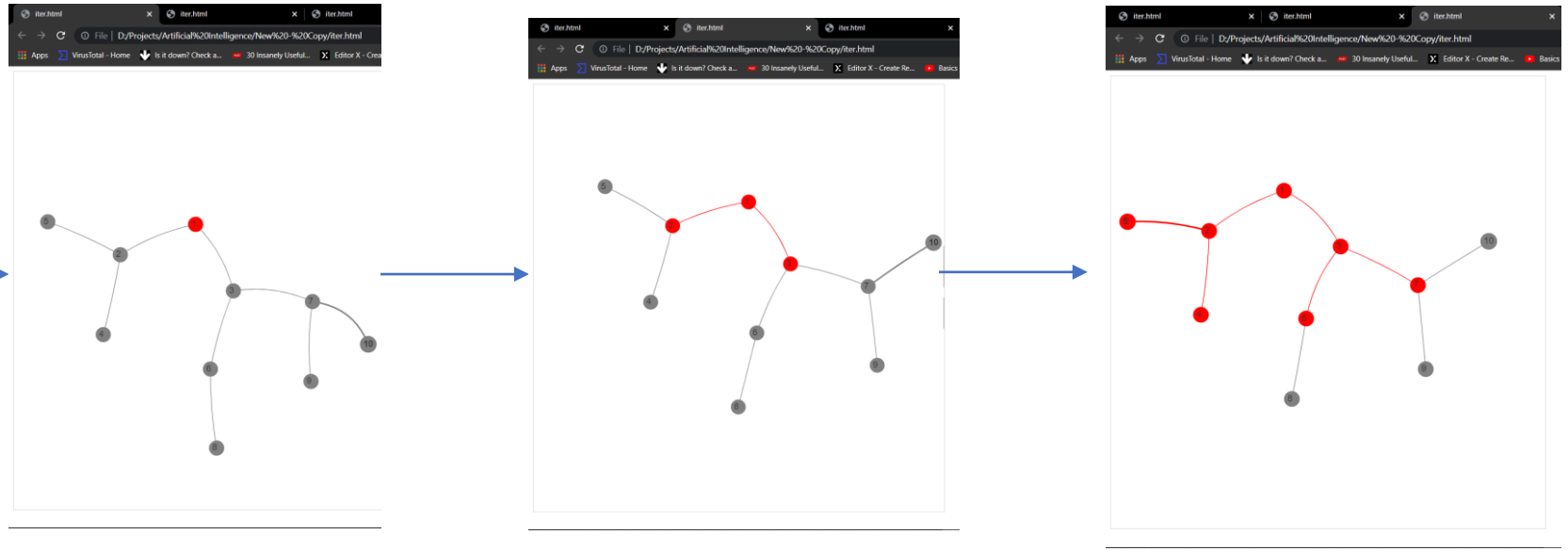
4 Uninformed Algorithms

- BFS , DFS and Uniform Cost Algorithms don’t need extra input from user
- Limited DFS just needs a depth limit from user
- In Iterative depth Algorithm multiple html pages open automatically to show the user the iterations while the final graph is shown in the GUI normally

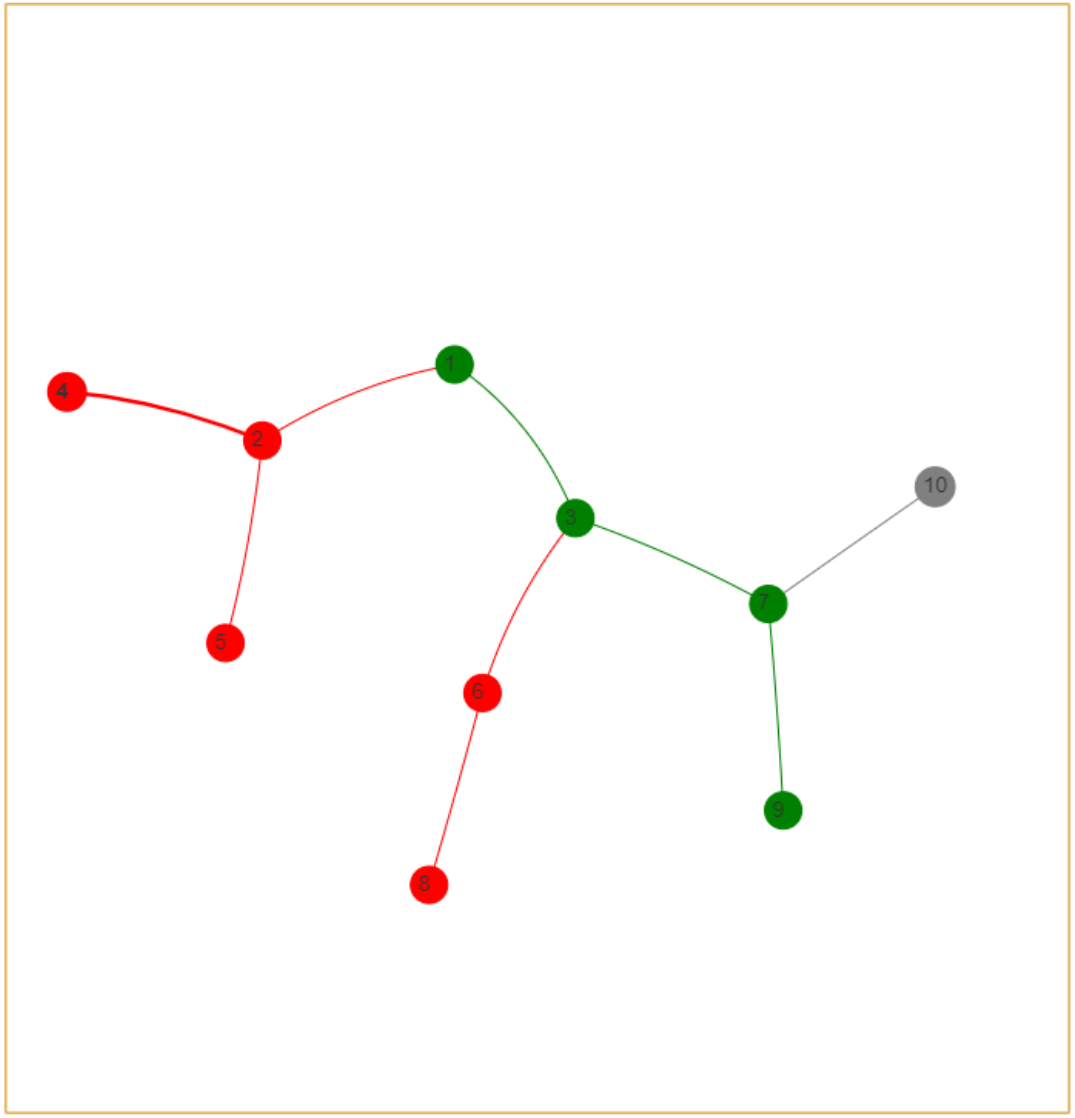
Main graph with node 10 as final node



Iterations



5 Final Graph



- Green Nodes denote the solution Path
- Red nodes denote visited nodes
- Grey nodes denote nodes that were not visited

- In BFS , visiting of children happen from left to right

- In Depth related Algorithms (DFS,Limited DFS and Iterative deepening) , visiting of children starts from the rightmost child first

- In Greedy and A* , a tie is broken by using FIFO mindset which means it takes the node that was explored first