# Graph Solver/Visualizer

**By**


| ID | Name | Contribution |
|---|---|---|
| **213439** | Mohamed Ashraf Fathy | Implemented DFS Algorithm |
| **213009** | Mustafa Walid Marzouk | Implemented module to allow the user to draw a maze |
| **210991** | Steven Hany Saad | Implemented BFS Algorithm |


## Implemented Algorithms:

Breadth First Search (BFS)

Depth First Search (DFS)

Uniform-Cost Search

Best First Search (Greedy Algorithm)

A* Search

## Languages:

Backend:

- Python

GUI:

- JavaScript
- HTML&CSS

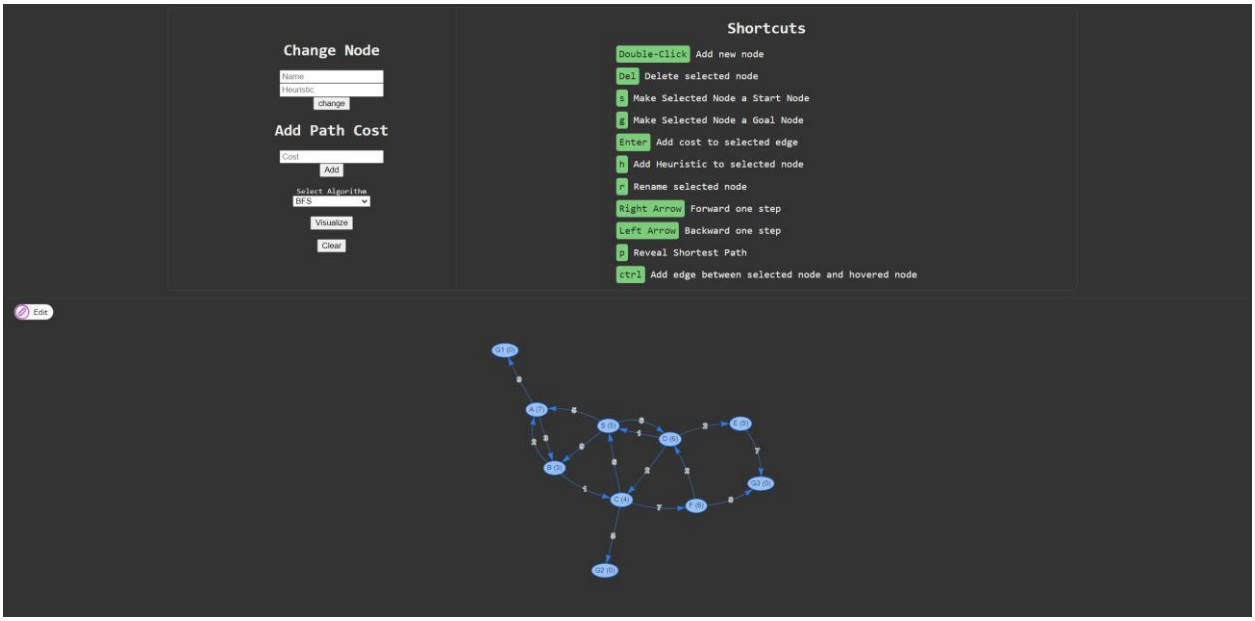
APIs:

- Fastapi

In the terminal:

- pip install uvicorn(to install fastapi module)
- cd backend (to change directory to the backend folder)
- python -m uvicorn main:app --reload (To start the backend server)
- launch index.html to view

Initial screen



Click on a node then press:

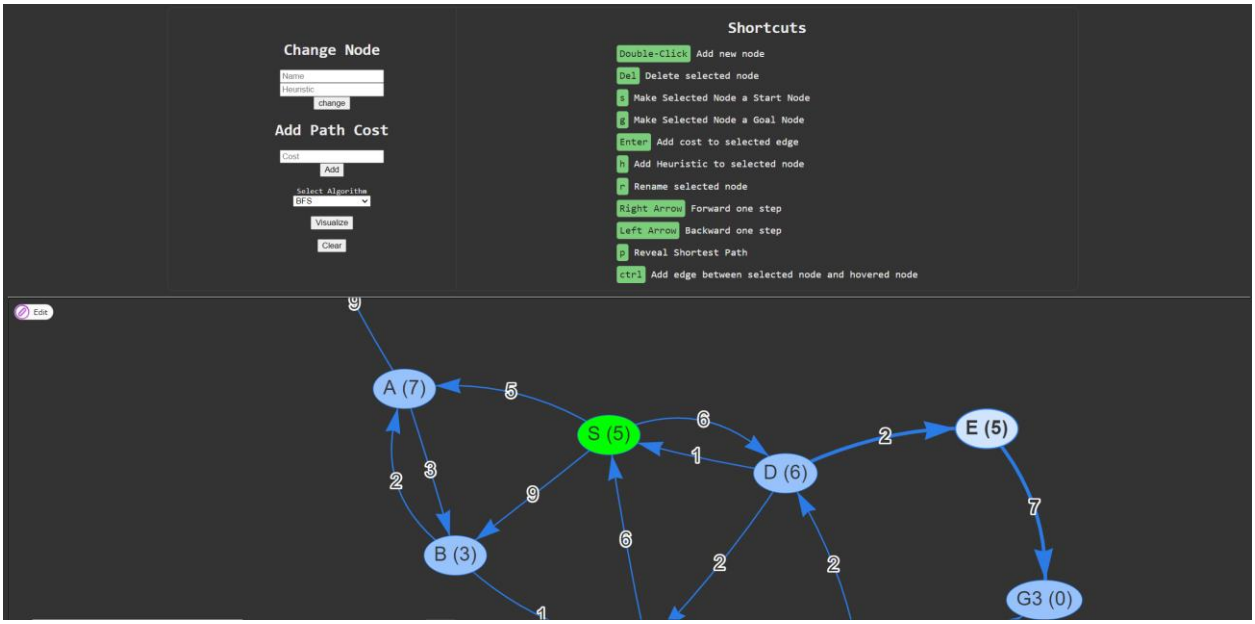
“S” to make it start node

“G” to make it goal node

“R” to rename it

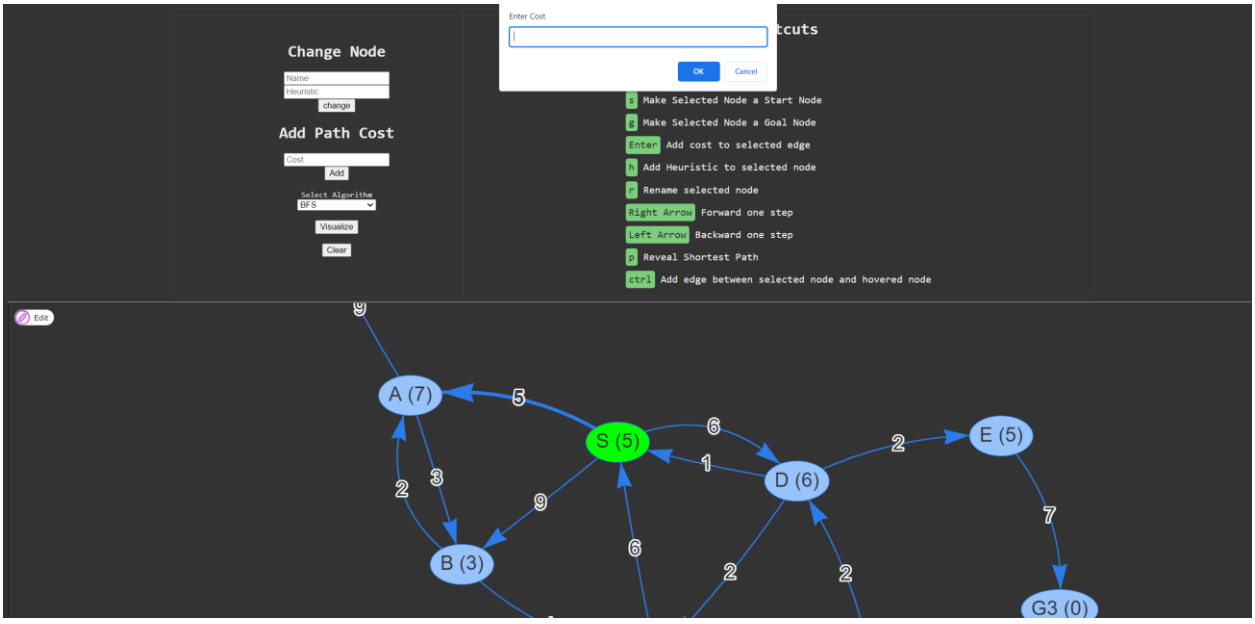
“H” to give it a heuristic value

“D” to delete it

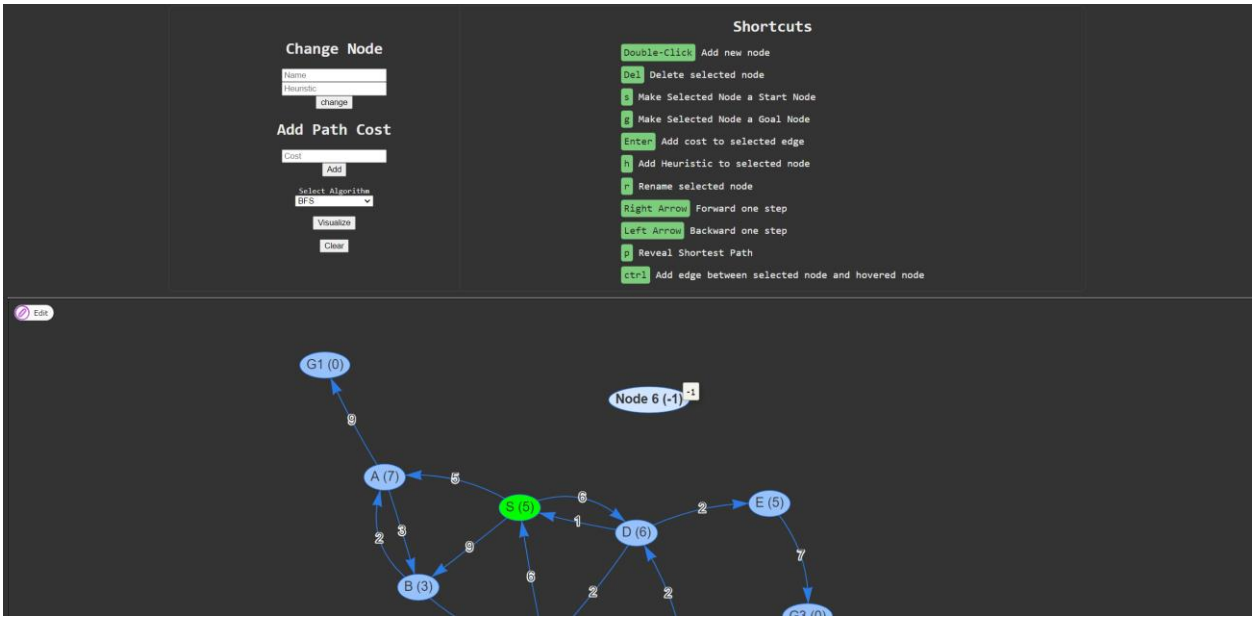


Click on an edge and press:

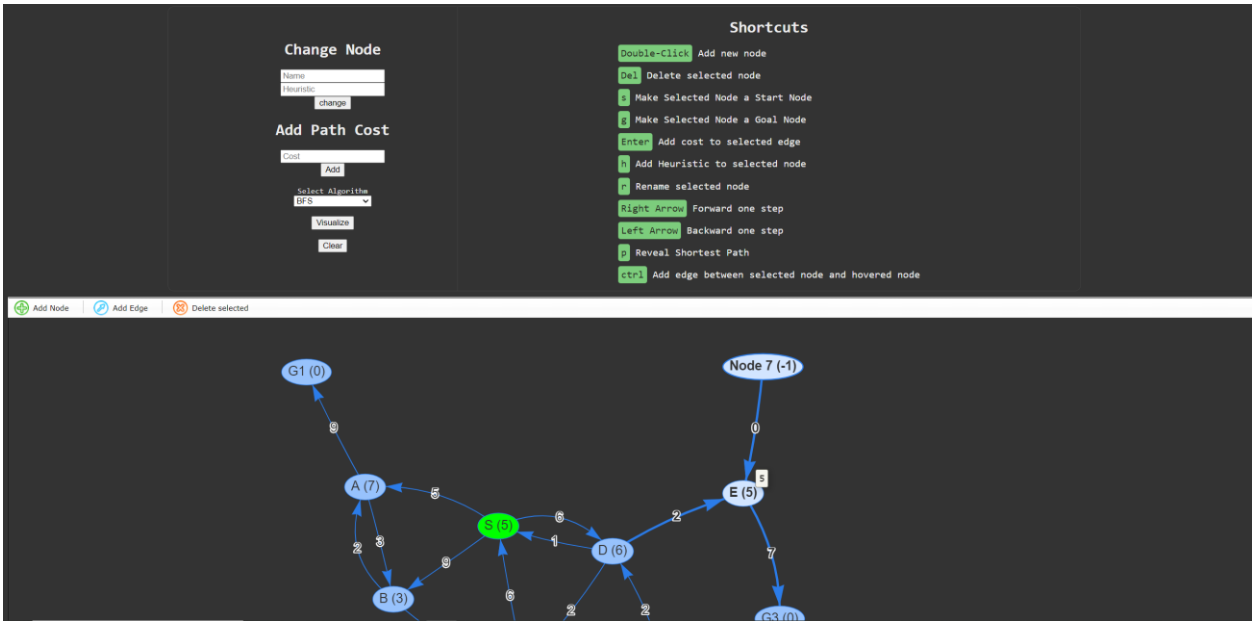
“Enter” to add path cost



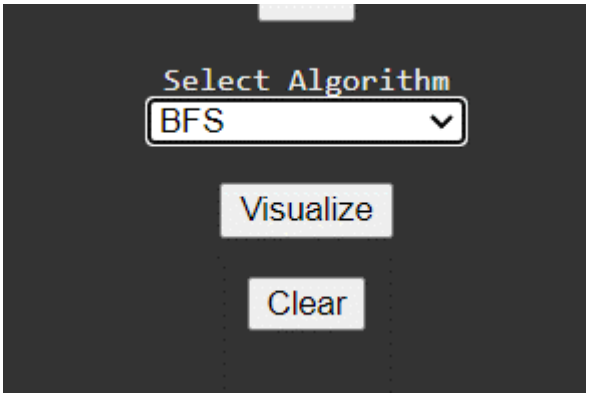

Click on any empty space to add a new node



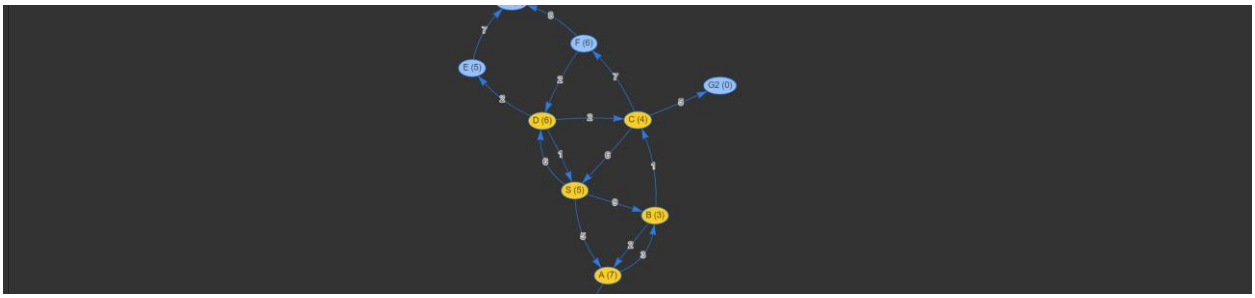
Select a node then hover over another node and press ctrl to create a path between them




Select an Algorithm and Click Visualize to see the program in action 🔥💥



Use the right and left arrow keys to go over the visited and shortest path




Or press p to instantly view the shortest path