

ALGOXVISUALIZER

By Objectively Oriented Programmers

The team:

- ❏ Sanjith Senthil
- ❏ Daksh Mathur
- ❏ Noah Stewart
- ❏ Prina Mehta

What does our project do?

- ❑ Visual learners, form **65%** of any learning group. (Visual Learning Statistics)
- ❑ Visualizes different search and pathfinding algorithms on a 2D grid in real time.
- ❑ Displays the process of how the algorithm searches for the shortest path between any two nodes and highlights the path once it is found.
- ❑ Users can test and compare different algorithms in distinct scenarios to understand the strengths and weaknesses of each one of them.
- ❑ It can be used as a teaching tool and provides a hands-on way to explore different algorithms and help users develop a deeper understanding of how these complex algorithms work.







Design

- ❑ A clean, intuitive and easy to use interface.
- ❑ Responsive and visualizes the algorithm in real time.
- ❑ Aesthetically appealing graphics and animations.
- ❑ Interactive elements that engage users and make the experience more dynamic.
- ❑ Provides a clear and concise documentation that explains how the visualizer and each algorithm works.
- ❑ Program doesn't crash and handles all errors.

Originality and Creativity

- ❑ Creative way for users to understand, learn and experiment with pathfinding algorithms.
- ❑ Has a unique and a vibrant eye-catching visual style .
- ❑ Included music that matches the theme of the visualizer to create an engaging and immersive experience to the user.

Technologies used

-  Python
-  Pycharm
-  Pygame
-  Tkinter
-  Github
-  BeepBox

Team Documentation

- ❑ Sanjith Senthil: Created codes for the “Breadth First Search”, “Depth First Search” & “Dijkstra” algorithms & implemented the colour coding of each node.
- ❑ Daksh Mathur: Created code for components of the graphical interface (the grid, the buttons, the instruction & explanation documentation).
- ❑ Noah Stewart: Created code for the “Greedy Best First Search” algorithm & helped with implementing the buttons of each algorithm.
- ❑ Prina Mehta: Created code for the “A Star Search” algorithm & assisted in formatting the instruction & explanation documentation.

Marketing

- ❑ Our target audience is computer science students and aspiring software developers.
- ❑ Search and pathfinding algorithms are a functional concept in the field of Computer software. Hence, every computer science student should know about it.
- ❑ Our tool helps in visualizing these algorithms for a more clear understanding of the code to deepen the concept for the individual.
- ❑ It can help in preparing for technical coding interviews.