

# GURU NANAK DEV ENGINEERING COLLEGE

DEPARTMENT OF INFORMATION TECHNOLOGY



## PATH FINDING VISUALIZER

SUBMITTED BY :-

AVNEET SINGH BHAMRA	1805529	D3-IT-A1
GAGANDEEP SINGH BAJAJ	1805534	D3-IT-A1
GAURAV CHAUHAN	1805535	D3-IT-A1

## **INTRODUCTION**

*The project is called a Pathfinding Visualizer, aptly because it does what it says, it finds a path from a source to a destination. This project is based on graph theory.*

*The user can also select different type of path finding algorithms ,user can add time bombs ,weights,mazes.*

*This project also shows background working of **Google Maps***

## **OBJECTIVES**

*The main objective is that we get to learn different path finding algorithms, there implementation*

*Also we get knowledge on graph theory shortest, path between two points at criteria (shortest , cheapest , fastest )*

## **ALGORITHMS**

This application supports the following algorithms:

**Dijkstra's Algorithm** (weighted): *the father of pathfinding algorithms; guarantees the shortest path*

**A Search\*** (weighted): *arguably the best pathfinding algorithm; uses heuristics to guarantee the shortest path much faster than Dijkstra's Algorithm*

**Greedy Best-first Search** (weighted): *a faster, more heuristic-heavy version of A\*; does not guarantee the shortest path*

**Breath-first Search** (unweighted): *a great algorithm; guarantees the shortest path*

**Depth-first Search** (unweighted): *a very bad algorithm for pathfinding; does not guarantee the shortest path*

## TOOLS

### **Reactjs:**

*React is a open source JavaScript library that is mostly used to build single pages user interfaces application. it is used to handle the view for the we and mobile apps. It was important as it gives us the reusability of the UI component. This tool helped me have that base interface for my app.*

### **CSS :**

*CSS stands for cascading Style Sheets which describes how HTML elements are to be displayed on the screen, pages or other media. It is very important as its helps with the layout control. Css helped me make the middle grid where our starting and end node are displayed and also with display of the wall between them.*

### **Visual Studio Code:**

*Visual studio code is a source code editor developed by Microsoft for windows, linux, and macOS*

## REFERENCE

<https://www.w3schools.com/js/DEFAULT.asp>

<https://www.javatpoint.com/css-tutorial>

<https://www.tutorialspoint.com/html/index.htm>

## INSPIRATION

[https://youtu.be/n4t\\_-NjY\\_Sg](https://youtu.be/n4t_-NjY_Sg)

ACKNOWLEDGEMENT

THANK YOU!