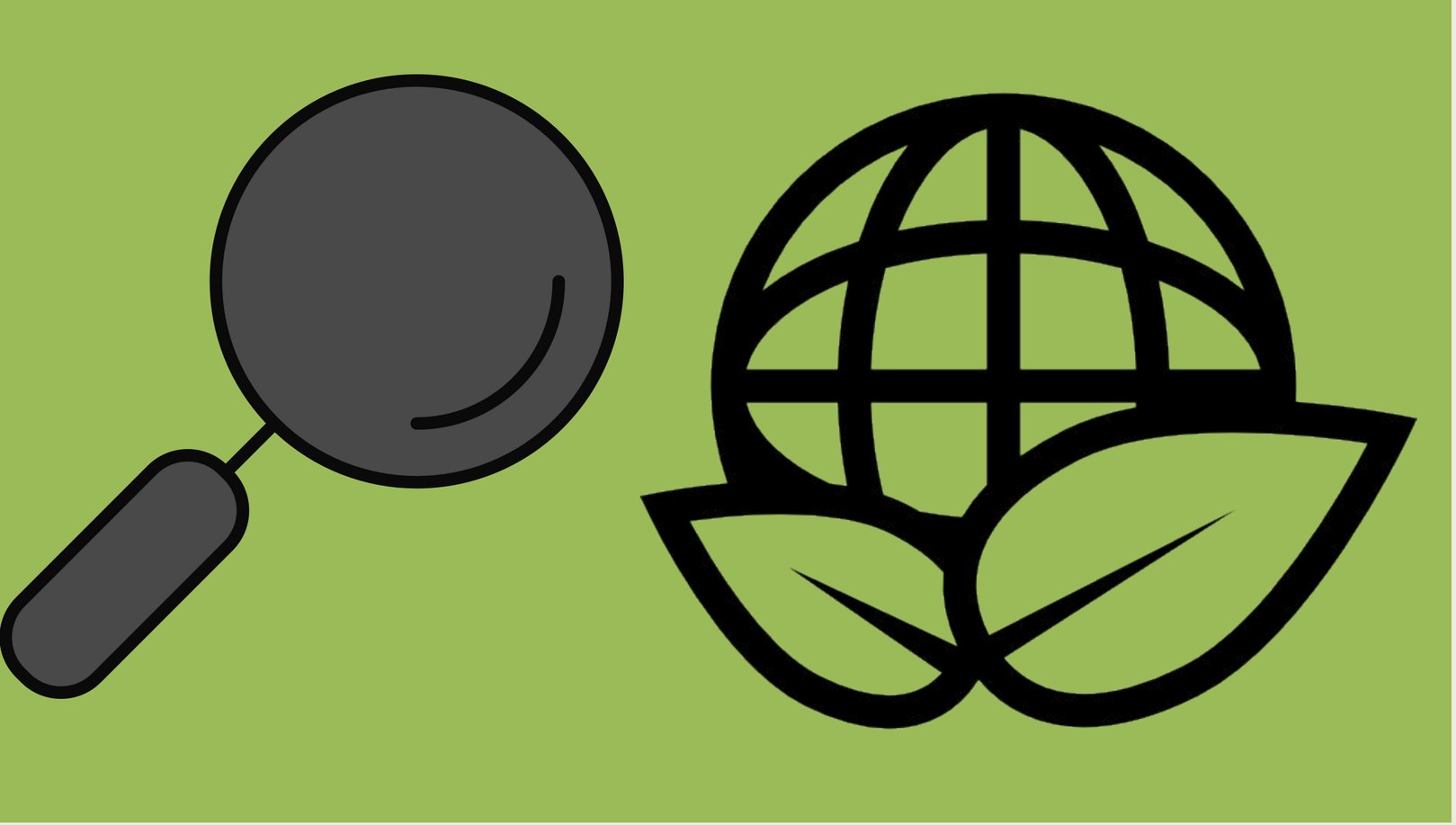
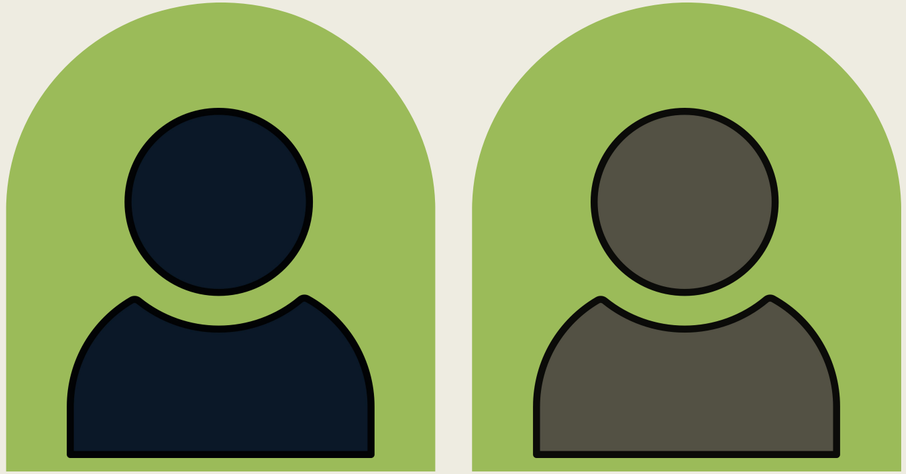


RIDE CLEAN

Sid Subbiah, Ryan Pergola, Armaan Priyadarshan, Rishi Patel

Team 6



What is RIDE CLEAN?

Key Goal

Ride Clean calculates the most efficient path to travel with passengers while also considering carbon emissions and driver convenience.

Carbon Emissions

Ride Clean reduces carbon emissions, which has caused major global warming and climate change in the last century.

One car emits **4.6 metric tons** of carbon dioxide per year.

Healthcare

Carbon emissions contribute to air pollution, which can cause respiratory and cardiovascular problems.

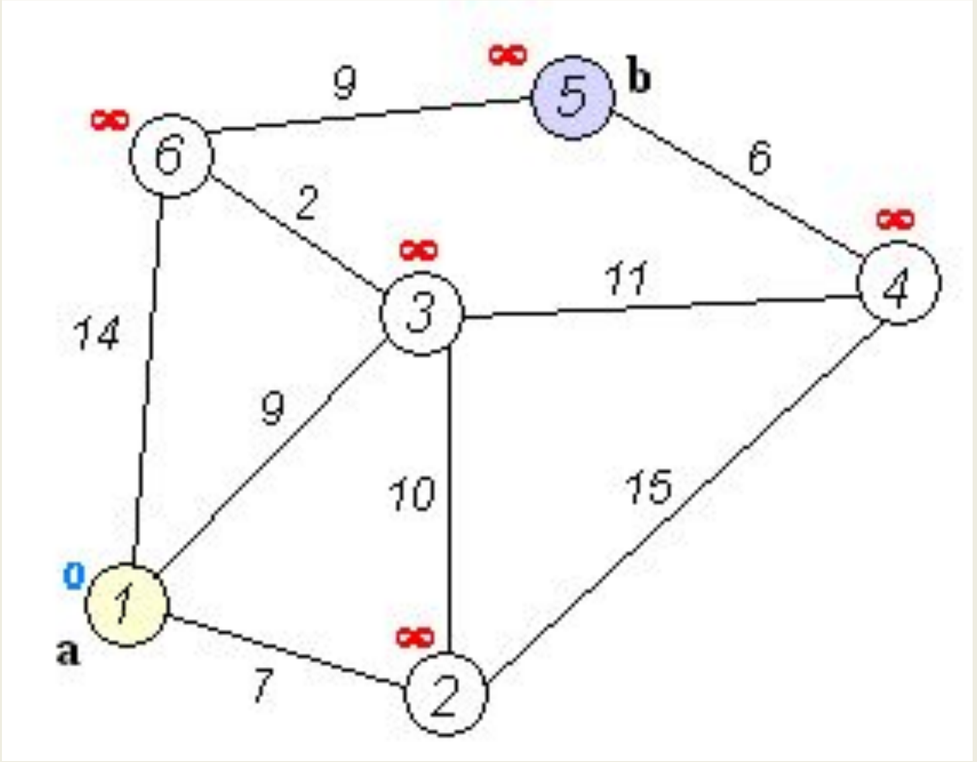
In **2018, 8.7 million deaths** globally were due to the air pollution caused by burning fossil fuels.

How does RIDE CLEAN work?

Dijkstra’s Algorithm

Dijkstra’s Algorithm is an algorithm that computes the shortest distance between two points in a graph
The algorithm traverses through the graph, and creates the shortest path from one vertex to another.

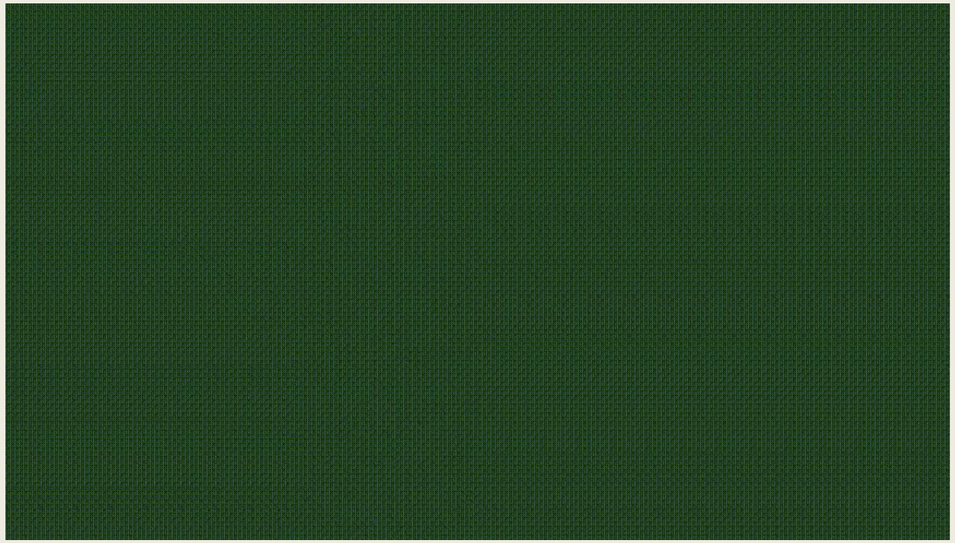
We use this algorithm to calculate the most optimal path between two passengers and a destination. If the distance from the first passenger to the second passenger plus the distance from the second passenger to the destination is less than the distances of both passengers to the destination, carpooling is preferred.



Graph Editor

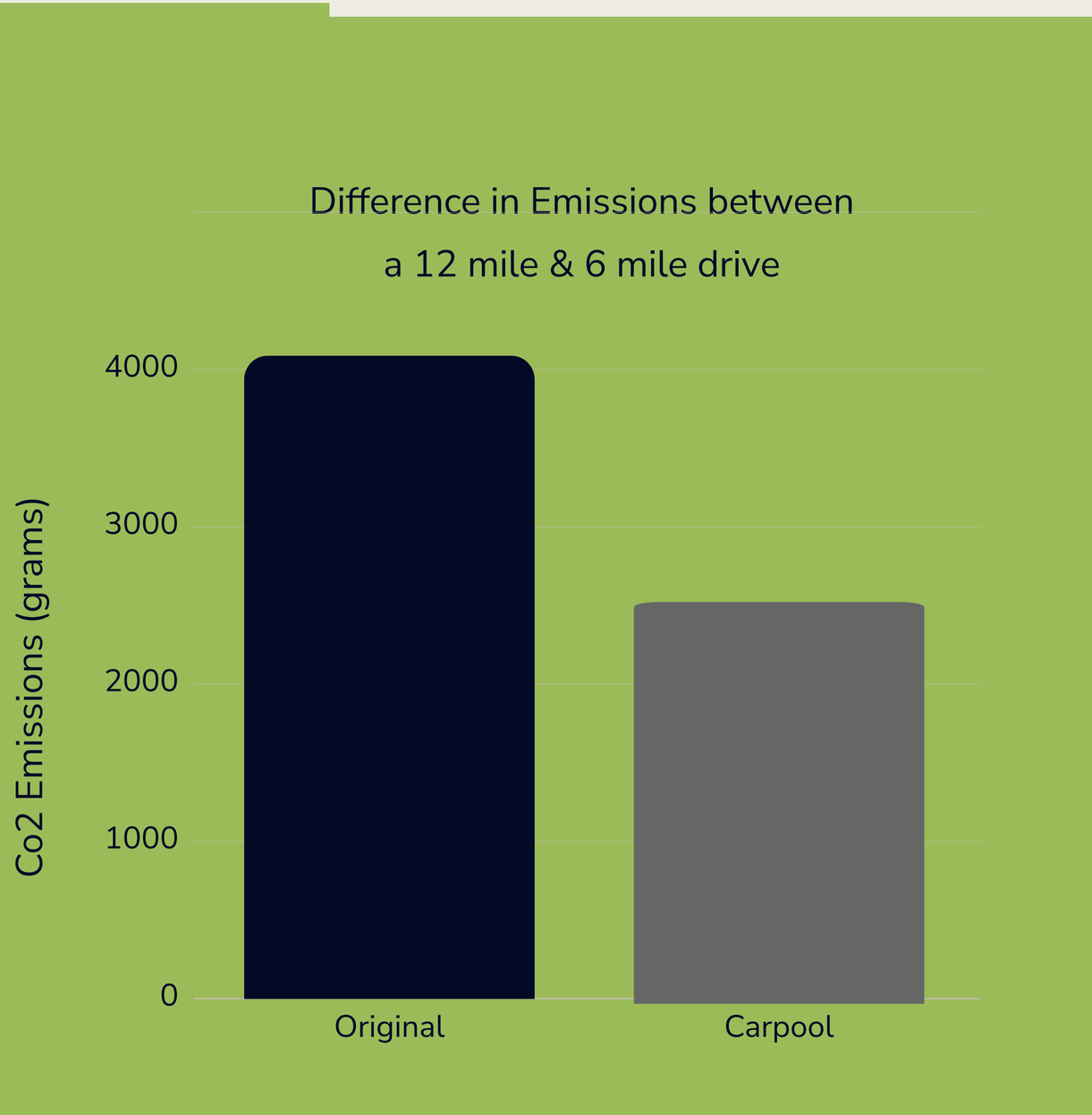
In order to speed up the process of creating this application, our team created a custom graph editor to aid in constructing a map of the city.

This graph editor is able to create and delete vertices and edges, as well as automatically generate a JSON file that contains information about the graph. We use this data to generate the fastest paths through the graph.



Predicted CO_2 Emission Improvements

Carpooling reduces up to 50% of Carbon Emissions



Future Improvements

Multiple Passengers

Currently, only two people are allowed to carpool with one other person, but an expansion to the algorithm can be made to allow for multiple passengers

Graph-Traversal weighting

Changes can be made to Dijkstra's algorithm that change the result based on the average speed per road, allowing for a more accurate estimate

Google API support

Maps have to be made manually, but with integration through Google's Map API, we could be able automatically generate graphs

Thank you!

A Carpool a Day
Keeps the
Carbon Away!