Development of a navigational algorithm with a rating system for commuters

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Team Introduction

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Problem Background

Problem

Transportation is one of the problems many Filipinos face day to day.

Problem

One problem is that the large amount of private cars on the road can cause congestion.

Problem

A way to mitigate this problem is to encourage people to commute.

Problem

Commuting, though, is a very complicated process, which can intimidate those new to it. Safety is also another concern for commuters

Idea Concept

Idea

Create a navigational algorithm for commuters that implements a user-based rating system.

Approaches on Algorithmic Solution

Algorithmic Solution

For this problem we used a Dijkstra algorithm with slight modifications

Algorithmic Solution

Dijkstra is an algorithm used for finding the shortest path for a weighted graph.

Algorithmic Solution

We used a modified Dijkstra algorithm to find the shortest paths in terms of distance, fare, and travel time.

Algorithmic Solution

It was also used to find the path with the highest average rating.

Algorithmic Solution

In this version, paths with no ratings were avoided.

Algorithmic Solution

In all other versions, paths with ratings lower than a certain value were avoided.

Inputs and Data

Benefits and Social Impact

Benefits and Social Impact

There is already a navigational app that commuters can use to find their routes

Benefits and Social Impact

..however, it does not have an option for users to rate the routes that they have taken.

Benefits and Social Impact

This can be a problem as users won’t be able to know whether a certain route is safe or not.

Code Demonstration