Project Description

TransitMode is a program that uses real-time transportation data and machine learning algorithms to suggest the most efficient and cost-effective modes of public transportation for your desired destination. With just a few clicks, you can enter your destination, remaining budget, and preferred mode of transportation, and TransitMode will provide you with the best available routes and transportation options. Whether you're traveling by bus, train, subway, or any other form of public transportation, TransitMode will take into account the time of day, traffic conditions(unsure), and fare prices to help you find the most convenient and affordable route. The program also offers a range of features, including route customization and a user-friendly interface that makes it easy to plan your commute. With TransitMode, you can save time and money while reducing your carbon footprint by choosing the most efficient and environmentally-friendly mode of transportation.

The main way this is achieved is similar to waze and grab, where the program has a database on certain transportation modes and the prices often given for each individual mode of transportation. Like grab having certain fares per km or jeepneys and buses with certain fares of km. The other modes of transportation like trains will not necessarily be time efficient as the lines for the trains can often affect the time spent for transportation.

IPO

Input	Process	Output
- Destination - Current Location - Route Preference - Preferred mode of Transportation	- The program uses GPS data to determine the user's current location. - The program calculates the route from the user's current location to the destination location based on public transportation routes	- Travel route through public transport - Transportation info (Traffic conditions) - ETA

Methodology

1. User inputs their current location and desired destination
2. GPS system retrieves data on nearby public transportation routes and schedules
3. System calculates the best route based on selected preferences (e.g. shortest time, least transfers, avoid certain modes of transportation)

4. System displays route information to the user, including bus/train numbers, departure times, and stops along the way
5. The user selects a route and boards the appropriate public transportation vehicle
6. GPS system uses real-time data to track the vehicle's location and estimated arrival time at each stop
7. System alerts the user when their stop is approaching, and provides directions for reaching their final destination from the stop
8. The User exits the vehicle and follows the final directions before reaching their location

The program will use the following concepts:

Variables and Data Types - In C, variables are used to store data values that can be used throughout the program. It's important to choose the appropriate data type for each variable, based on the nature of the data it will store in order to have a functioning program (e.g. integers, strings, floats).

Control Structures - Control structures like loops can be used to iterate through lists of public transportation schedules or vehicle locations, while conditional statements can be used to select the appropriate route based on user preferences.

Functions - Functions can be used to perform specific tasks, such as calculating the distance between two coordinates or retrieving data from an API.

Schedule of Activities

Task number	Planned action	Planned outcome	Time estimated	Target completion date	Actual Completion Date
1.	Project Proposal	Showing Project description with brainstormed idea	3 days	3/20/23	3/20/2023
2.	Flowchart	Showing process of the program to make the coding easier	3 days	3/23/2023	
3.	Actual Coding	Coding the actual program with the database file	1 ½ week	4/1/2023	
4.	Debugging	Debugging the current program, fixing all the incorrect, typos or bugs	1 week	4/8/2023	
5.	Presentation	Presenting the program with its uses, how it works and show the results of the output	1 day	4/10/2023	

References

Published by Statista Research Department, & 28, N. (2022, November 28). *Philippines: Minimum fare by type of public transport 2022*. Statista. Retrieved March 20, 2023, from https://www.statista.com/statistics/1329307/philippines-minimum-fare-by-type-of-public-transport/#:~:text=As%20of%20October%202022%2C%20the,was%20two%20Philippine%20pesos%20higher.

https://www.lrta.gov.ph/tickets-and-fares/