Final Group Project Report

Public Transportation Database

Team: The Dingers
Members: Edward Berry, Ryan O'Shields, Patrick Horan

Purpose: Coordinate the logistics of all people's use of public transportation

Target User: Any Department of Transportation

Data to Use: Train, Bus, Plane, and Subway Information including capacities, routes, departure and arrival times, price, destination, and origin

Methods:

The beginning of this project seemed pretty straightforward, but we quickly realized how much coding and work needed to be done in order to make the project operate as intended. Heavy time investment and a fairly complex understanding of SQL and PHP were required.

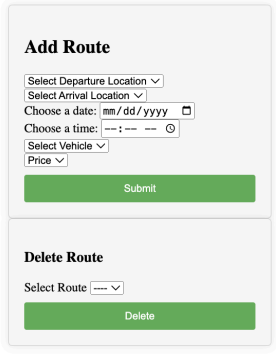
Lessons learned:

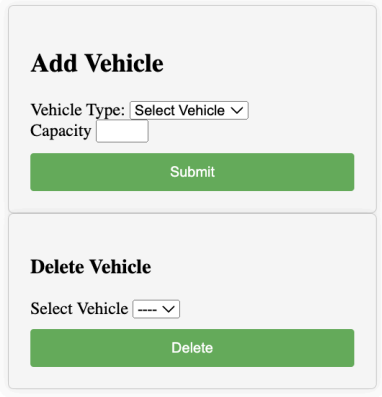
- Code in small increments
- Communication is paramount
- Time management
- Start small

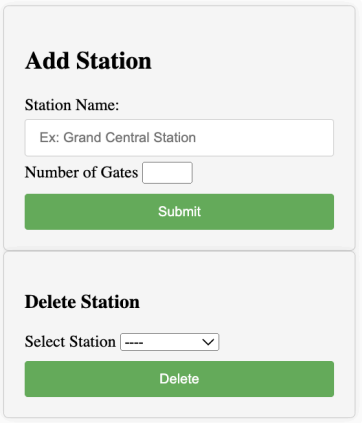
Schema:
Station(underline{StationID}, StationName, Gates)
Routes(underline{RouteID}, DepartureLocationID, ArrivalLocationID, DepartureTime, TransportType, OpenSeats, Price)
Takes(underline{TakesID}, PassengerID, RouteID)
Passenger(underline{PassengerID}, Username, Password)

Link to GitHub for various code that each of us worked on:
https://github.com/patrickvhoran/CMS375-Spring2024

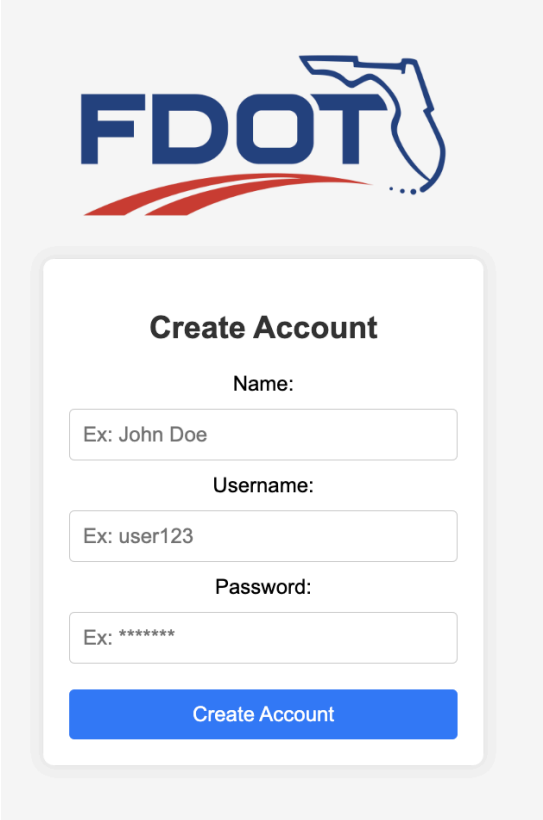
Experiments and Results:







These three functions allow the admin to add or delete Routes, Vehicles, and Stations from the database as needed. They provide a streamlined approach to interacting with data entries.

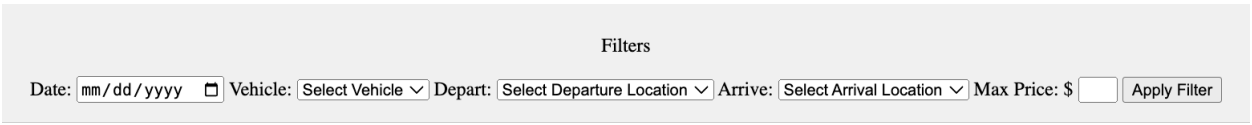


This function allows a user to create an account in order to begin using the service. It is meant to provide a quick and user-friendly launching point into the user's experience with the website.

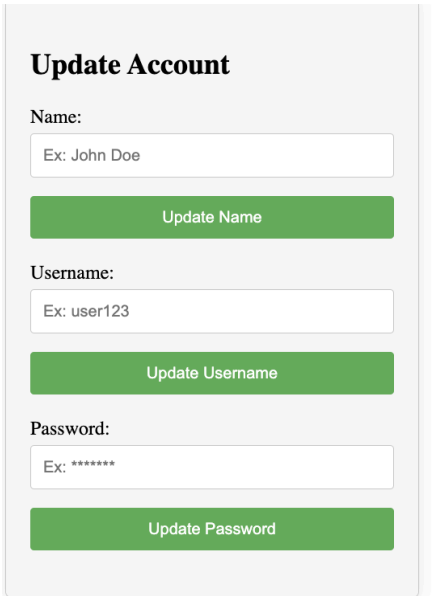
	Departure Locaiton	Arrival Locaiton	Departure Time	Transport Type	Open Seats	Price
☐	Station I	Station A	2024-03-28 15:00:00	Plane	79	80.00
☐	Station D	Station A	2024-04-30 15:11:00	Plane	332	130.00
☐	Station H	Station A	2024-04-29 04:42:00	Bus	20	60.00
☐	Station E	Station B	2024-03-28 11:00:00	Train	39	20.00
☐	Station D	Station B	2024-05-05 13:28:00	Bus	15	40.00
☐	Station G	Station C	2024-03-28 13:00:00	Train	59	30.00
☐	Station C	Station D	2024-03-28 10:00:00	Plane	100	100.00
☐	Station B	Station D	2024-04-30 14:35:00	Train	48	200.00
☐	Station A	Station E	2024-03-28 08:00:00	Train	47	25.00
☐	Station H	Station F	2024-03-28 14:00:00	Bus	24	12.50
☐	Station D	Station G	2024-03-28 16:00:00	Train	70	35.00
☐	Station B	Station H	2024-03-28 09:00:00	Bus	30	15.50
☐	Station F	Station I	2024-03-28 12:00:00	Bus	20	10.00
☐	Station J	Station J	2024-03-28 17:00:00	Bus	35	17.50

Register

This function displays all the Routes in the database and allows the user to select one or more routes and register for the route, which provides a way to make reservations on the trip the user wants to take.

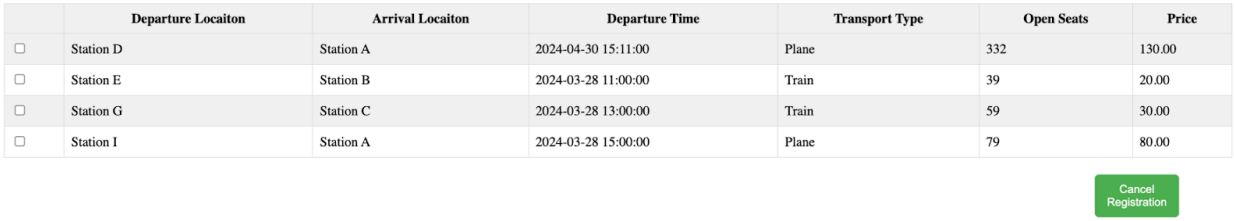


This function allows the user to apply filters to the routes that are displayed according to their wants and/or needs for a trip in order to make the reservation process easier.



This function allows users to make changes to their account. It requires password confirmation before each change is made to the database. It provides an easy way to update or correct any information you would like to make to your account.

My Routes



	Departure Locaiton	Arrival Locaiton	Departure Time	Transport Type	Open Seats	Price
☐	Station D	Station A	2024-04-30 15:11:00	Plane	332	130.00
☐	Station E	Station B	2024-03-28 11:00:00	Train	39	20.00
☐	Station G	Station C	2024-03-28 13:00:00	Train	59	30.00
☐	Station I	Station A	2024-03-28 15:00:00	Plane	79	80.00

This function displays all routes a passenger is signed up for. If a passenger selects one or more routes and clicks Cancel Registration, the user's reservation will be removed and the database will be updated accordingly.

Discussion and Conclusion:

We learned the challenges in building a full-stack product, such as the maintenance of connecting html or php web pages to a local server like XAMPP. Even when our code was correct, sometimes there would be an error in the XAMPP server or mySQL database running in the background, so we understand the importance of having your project set up properly from the start. Although it is obvious, we learned that the more functionality and options that you want to add to your product, the more code you have to write and it can scale exponentially if you don't manage it. Leaning on our teammates and online resources, we were able to overcome the obstacles we ran into when coding the update, delete, insert, and select functions, and in the end, we built a great product for a department of transportation.

Resources:

We don't have specific links to which ones we used, but in general our process to solve issues or code new features was to utilize YouTube videos, stack overflow articles, and Reddit. All three were helpful when coding the front-end and back-end.