API & Backend - Max

PostgreSQL Database with schema for storing each parking spot and info about it
Schema for each user and personal data about them
Spots can be temporarily linked to a user with a permanent history of who has had possession of a spot

RESTful API for communicating with client apps to serve data
All computations and fetching data from Didax school api are done automatically on a backend server
Backend server processed with an ubuntu dedicated server with an elastic IP
Each user has an API key with their own permissions
Admin panel hosted on server for management as a web app
Scheduler on server for managing computations (such as tandem and carpool compatibility calculations, requests to rent spots, etc with priority using a priority queue)
Manage billing with stripe
Server backend logic uses SQL data about spots and users upon request, to calculate compatibility for carpool/tandem, renting, calling external apis such as didax, authentication, etc.

Design & UI - Lauren

Tandem - Nathan

- Chat emotes
    - No custom chats
    - Move your car!
    - Leaving soon!
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- What tandem partners are most compatible with each other
    - Compare compatibility by schedule
        - When they come and when they leave
        - extracurricular activities
        - Going off for lunch
        - Seniors should be paired with other seniors
        - Juniors can be paired with juniors + sophomores
        - Sophomores can be paired with sophomores + juniors
        - Arrival time
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Carpool - Daniel

- Factors for choosing carpools (in order by weight)
    - Location
    - Class schedule
    - Extracurricular commitments
    - Give priority to seniors w/ carpools or just seniors in general

- Miscellaneous factors
    - Fetch average gas prices in the area from license plate using public vehicle api and then get combined city/highway to calculate approximate gas price
    - Chat for communicating with partner
- Hae a bio section for music, etc.

Parking Spot Rental - Daniel

- Availability
    - Cancellation day before: full refund
    - Cancellation day of: renter gets fine
    - Spot ownership and renting documented with blockchain
- Report system
    - If a student finds a spot they rented blocked, automatically reassign them to an open spot, and then pay the open spot owner with the orignal spot paymnet
    - If a student other than the original renter blocks the spot, fine that student directly and ban their license plate until they pay
    - Take photo for review using web3 photos for verification
- Renting system
    - Spots that are available are highlighted in green, which they can do and they get a confirmation
- Spots get more expensive by distance
    - Market rate can be fine-tuned

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