

MICHIGAN STATE
UNIVERSITY

Alpha Presentation
Car-Net DriveView Social Competition
App

The Capstone Experience

Team Volkswagen

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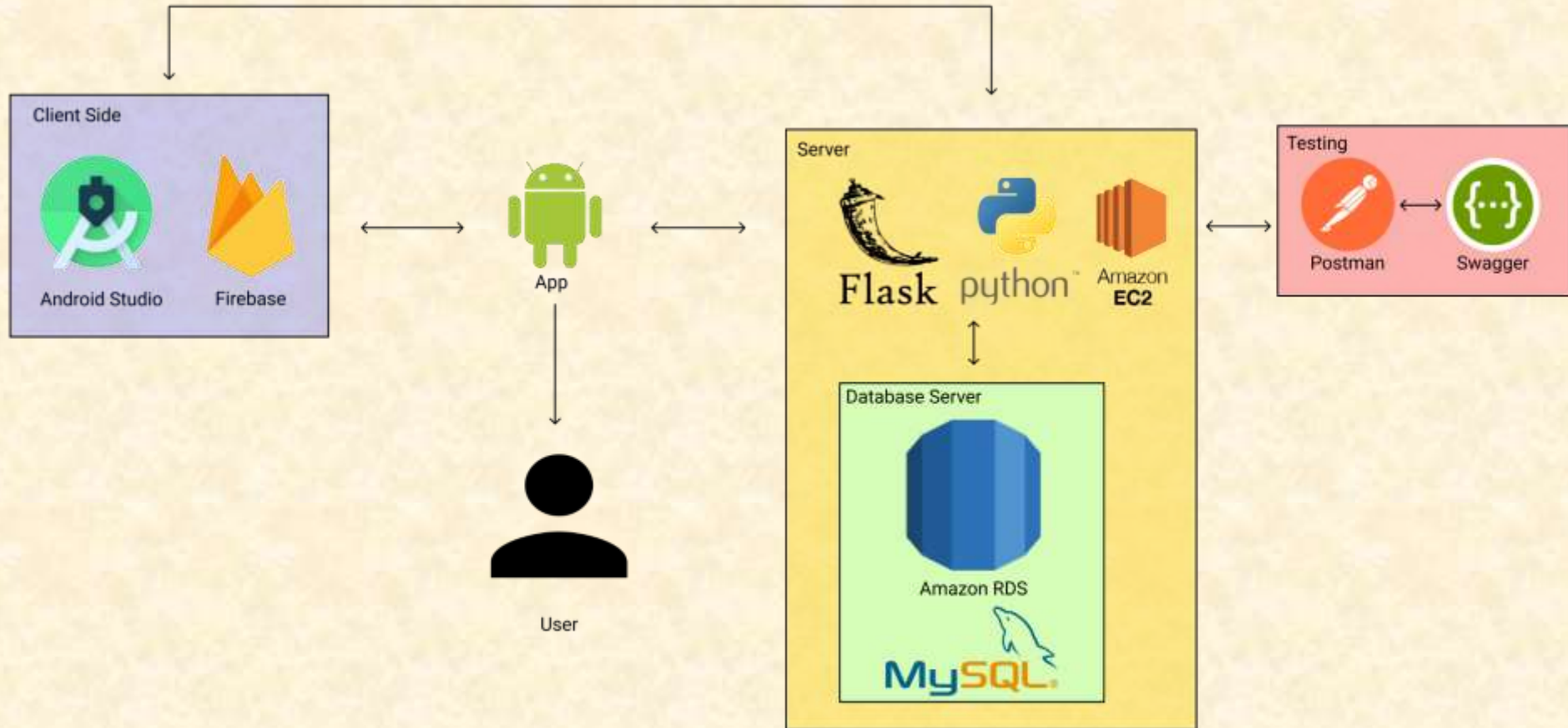
From Students...
...to Professionals

Project Overview

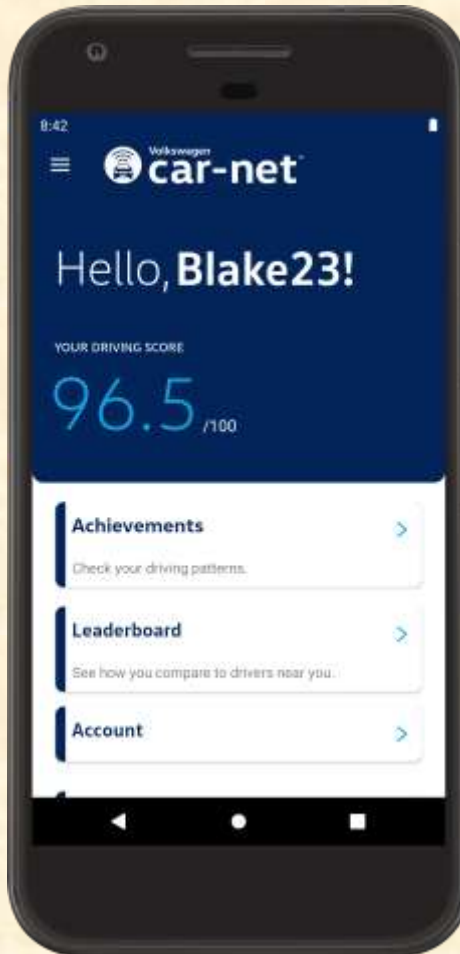
- Encourage safer driving by scoring users based on how safe they drive
- Scores are calculated based on achievements as well as sensor data from the car such as blinker status, seatbelt status, speed and door locks among others
- By completing daily or weekly achievements, users can improve their driving performance for safer driving
- Rank users on a leaderboard based on these scores
- Users can compare their scores directly with other users as well



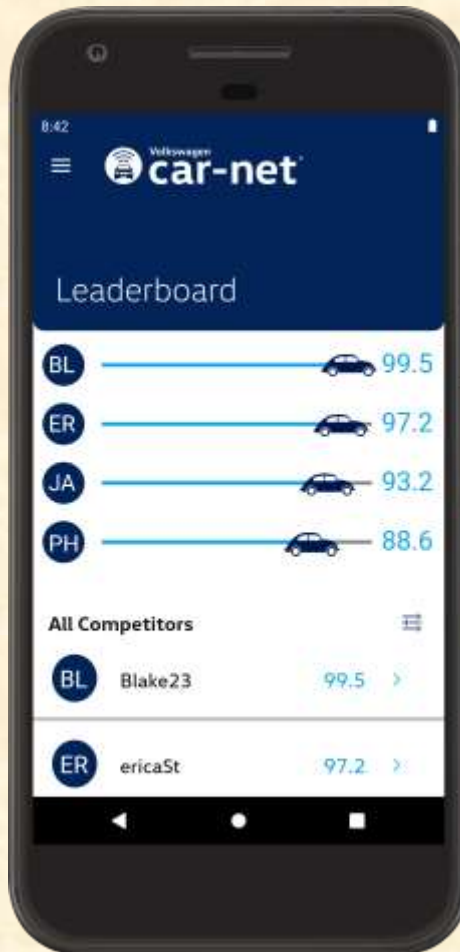
System Architecture



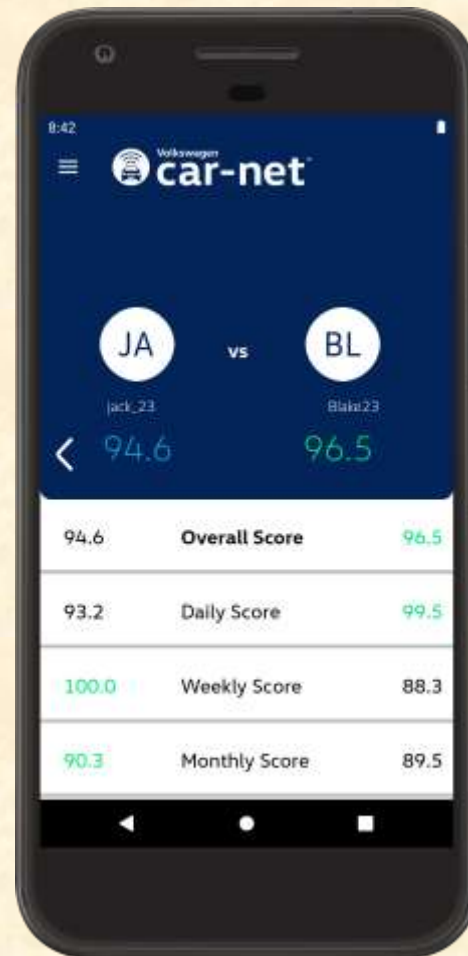
Home Screen



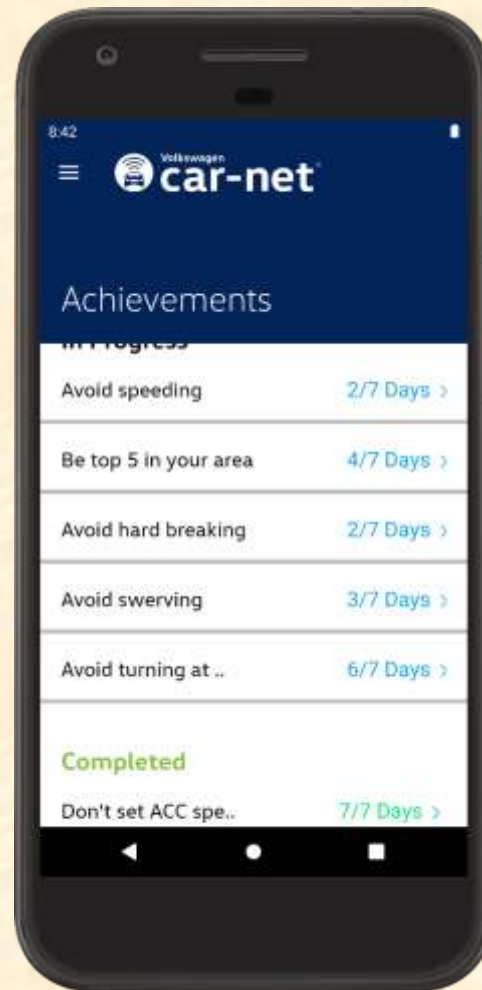
Leaderboard Screen



User vs Me Screen



Achievements Screen



What's left to do?

- Fine tune our algorithm for determining driving score
- Rework the flow of the app in some pages
- Clean up pages and finish functionality for them
- Convert database to real data



Questions?

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Algorithm

- Generates a driving score based on sensor data and achievements completed
- Split the data into three categories:
 - Extreme: Speed, seatbelt, doors
 - Ignorance: Blinker status, ACC, brake lights
 - General Safety: Oil and coolant temperature, MPG
- Calculating the score:
 - Mileage Multiplier, Score for each category and Previous driver score



Algorithm

- Extreme:
 - » Max can be .12
 - » $extremeScore = (previousScore - calculatedExtremeData - 0.4)$
- General Safety:
 - » Max can be .1
 - » $generalSafetyScore = (previousScore - calculatedGeneralData - 0.2)$
- Ignorance:
 - » Max can be .1
 - » $ignoranceScore = (previousScore - calculatedIgnoranceData - 0.2)$
- Driving score:
 - » $subtractions = (mileageMultiplier) * (extremeScore + generalSafetyScore + ignoranceScore)$
 - » $drivingScore = previousScore - subtractions$
- If you have been a safe driver, you don't lose points



Algorithm

- Your score will increase given you have driven safely
 - If your previous score is unchanged:
 - » $drivingScore = (previousScore * 0.01) + previousScore$
 - And if you have completed achievements
 - » $drivingScore = (previousScore * 0.025) + previousScore$

