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Report and Plan

Progress Report

* Bootcamp
  + Three independent parts
    - API/Data collection - gets data from TrafficLand API and store the image information in the database as well as create API to connect to the database
    - Machine Learning - be able to detect cars in a single image, sending detections to API, beginning color detection
    - Front end - have a tool that can display an image of a car with its labels, already stored somewhere, and get information manually about the car (without the API)
* 30%
  + Integration
    - Frontend and Backend services integrated on local database system
    - Usage of image and camera logistics API to display the latest downloaded image from TrafficLand services
  + Machine Learning
    - Able to detect cars
    - Able to download images from API
    - Run Car detection on images and output bounding boxes
    - Working on color and size detection
* 40%
  + Machine Learning
    - Honing color/ size detector to give us a better distinction
    - There is a pipeline between the API and the machine learning
      * machine-learning can get images and cameras from the API, and can send bounding boxes/detections to database with POST request
  + Data Collection:
    - Using a NoSQL database instead of SQL so that the JSON is retrieving document data instead of converting it
      * Will result in faster API collection
  + Front-end:
    - All the camera metadata will be added to the frontend web app
    - This includes orientation, location, full name, last updated time, etc

2-week plan

* 1st week:
  + Data Collection
    - Have image data collection optimized to be faster than our 40% demo
    - Have all the endpoints for the API for machine learning to POST bounding boxes
  + Front-End
    - Integrating the detected images into the frontend
    - Integrating the detected car labels in table format into the frontend
  + Machine Learning
    - Good color detection results → Better than our 40%
* 2nd week:
  + Integration:
    - Server logistics → will take time to set up a live server
      * Want to instead have everything locally
    - Will have fully integrated local version
      * Ready to deploy once we get the server set up
  + Data Collection
    - Have image data collection optimized to be faster than our 40% demo
    - Have all the endpoints for the API for machine learning to POST bounding boxes
  + Machine Learning
    - Sending all information to Database and pulling information from the database in one place
    - Starting height detection
  + Front-End
    - Start creating initial queries for car detection EDA (exploratory data analysis)