

A short horizontal bar with a blue left half and a red right half.

# Chevron Coding Challenge

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# Team Introduction

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Computer Science  
Senior



Max Ercolani

Geophysical Engineering  
Sophomore



Michael Maggiore

Computer Science  
Senior



## Problem Description

As new **energy** technologies are being built, it is important to educate young adults about the importance and benefits of **carbon** offset projects in their local area





## GreenGrid

An easy-to-use maps app for iPhone that includes markers for **carbon** offset projects and utilities with additional carbon offset information



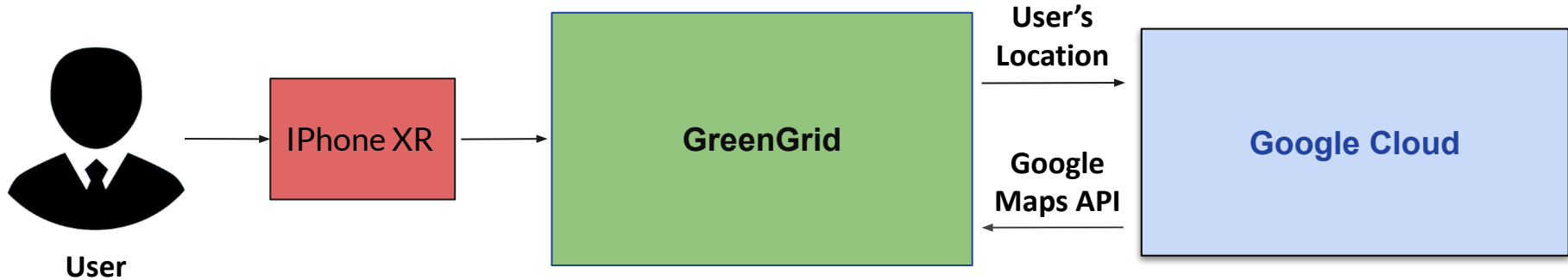


## Technical Info

- Swift
- Xcode
- Google Cloud
- Google Maps API



# App Architecture





## Cost of Implementation

- Data costs
- Time
- Apple's App Store Fee (\$99 per year)



# Data Info and Collection





# Transportation

Various carpool, rideshare, and electric charging opportunities are available to the public around Golden.

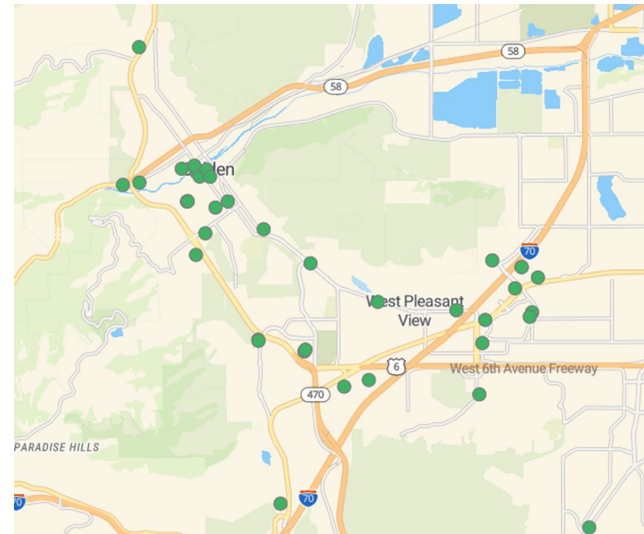
These opportunities and stops were added to the app from already existing GIS data on the web.

Sources:

[https://afdc.energy.gov/fuels/electricity\\_locations.html](https://afdc.energy.gov/fuels/electricity_locations.html)

<https://www.rtd-denver.com/system-map>

<https://www.cityofgolden.net/media/Ore-Cart-Routes-2023.pdf>



EV Charger Stations in Golden  
[https://afdc.energy.gov/fuels/electricity\\_locations.html](https://afdc.energy.gov/fuels/electricity_locations.html)



# Solar



Solar Panel Array on Green Center CSM  
<https://www.mines.edu/sustainability/initiatives/solar/>

Fortunately, many organizations, companies, and homeowners have installed solar panels in Golden.

Because of the great number of these, and the difficulty in documenting them all, we have only included the solar panels that are operational on the Colorado School of Mines Campus. The locations and power output of these panels were listed on the school's website.

Sources:

<https://www.mines.edu/sustainability/initiatives/solar/>



## Other Data

Other sources of carbon offsets and related sustainability projects were added because of the influence on the city of Golden, such as the Coors Brewery Overhaul. Information for these points of interest were collected from the respective official websites and news sources.

Sources:

<https://www.epa.gov/ghgemissions/overview-greenhouse-gases#carbon-dioxide>

<https://www.cityofgolden.net/live/sustainability-initiative/community-gardens/>

<https://www.molsoncoorsblog.com/golden-brewery-g150-sustainability>



# App Demo (on iPhone XR)





## Challenges and Learnings

- iOS App Development
  - Learning a new language (Swift)
  - Xcode only available on MacOS
  - Gathering data



## Future Ideas

- Expand outside of Golden
- Addition to existing map apps



# Thank you

