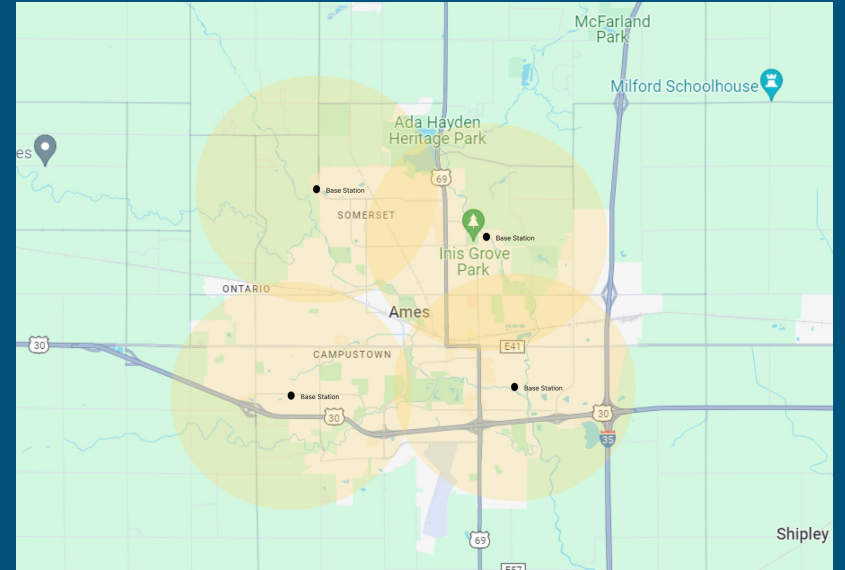# Continuous Visualization of CyRide Through an Interactive Map

Team 22: Endi, Braden, Evan, Andrew
Advisor: Selim
Client: Soliman

Project Overview

Provide a visualization of Cyride movement through a UE (user equipment) device that transmits its location when in range of given base stations (signal towers). This is called ARA and provides a wireless network to track locations. When outside of that range, it will predict the movement using GPS locations and machine learning. The application will show which method is being utilized, providing insight into the tracking methods so users can have accurate bus tracking.

Ideation

- Client/Advisor Meetings
    - Project Breakdown/Slides
    - Clarifications
    - Brainstorming
- Group Meetings
    - Task breakdowns
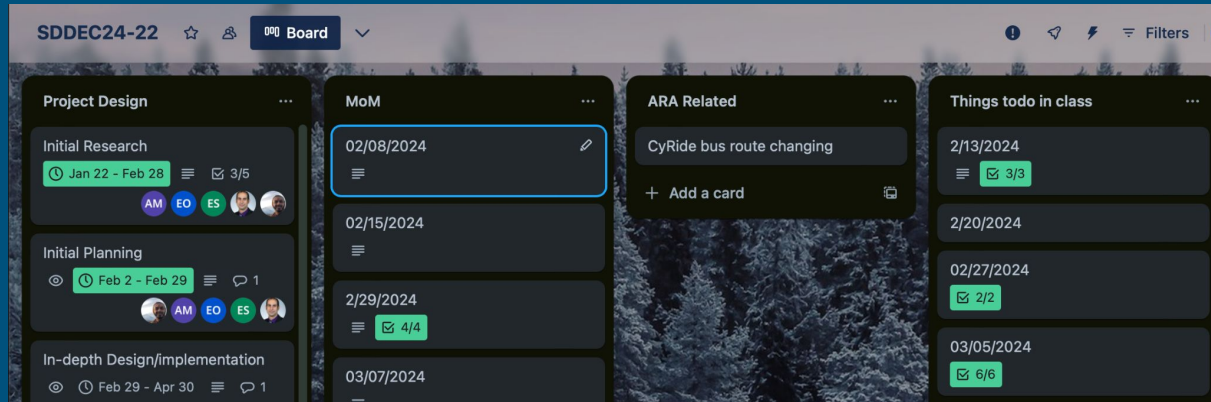   - Technology discussions

Week 7:

- GPS on can identify location, when the bus not there- it does not show bus at all.
- ML for predicting bus location around the routes. Not too hard in that direction.
- Not wifi—ARA coverage ("not wifi exactly").
- fix workflow for separate link to real time bus and predicting bus – move lines around, if check route, move back to beginning.
- mention signal strength when in coverage or not
- more technical stuff when trying to visualize and that stuff

- only 1 bus can focus on
- just "signal", "longitude", "latitude" api calls (json format)
- insights ue data be good
- soliman discuss with team about ue data (replace new gps signal)
- update website

Ideation

- Trello/Meeting Notes
  - Research
  - Planning
  - Implementation
  - Prototyping
  - Questions
- Agile
  - Weekly Check-ins

Potential Idea/Solution

- Bus Tracking
  - UE Signal Coverage (active/inactive)
  - Machine learning with UE inactive
  - Google Map bus locations
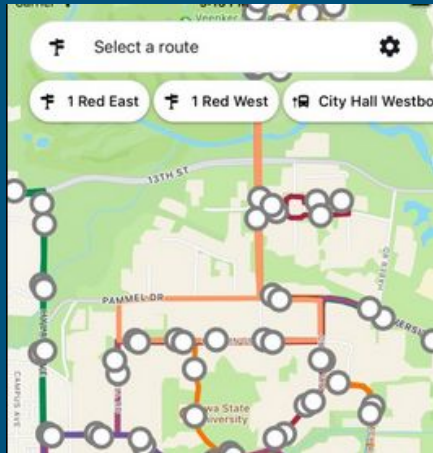- Tech Stack
  - React, Python, MySQL

Market Research

- CyRide
  - Provides real time bus locations using GPS coordinates and machine learning algorithms. This gives predictive updates on bus arrival times while providing accurate location data.
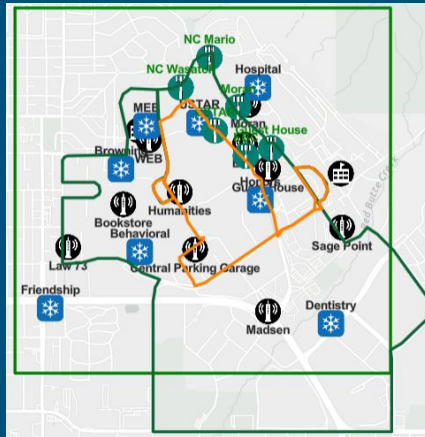
Market Research

- AmesRide
  - Lightweight application that uses modern technologies to present a updated solution to tracking bus locations. It updates the locations using data from CyRide.

Market Research

- Powder
    - Uses the ARA network to provide bus locations within the towers range in the city. This uses the same technology that our project will utilize. They only provide a simple web UI with a simple user interface.

Conclusion

Any Questions?