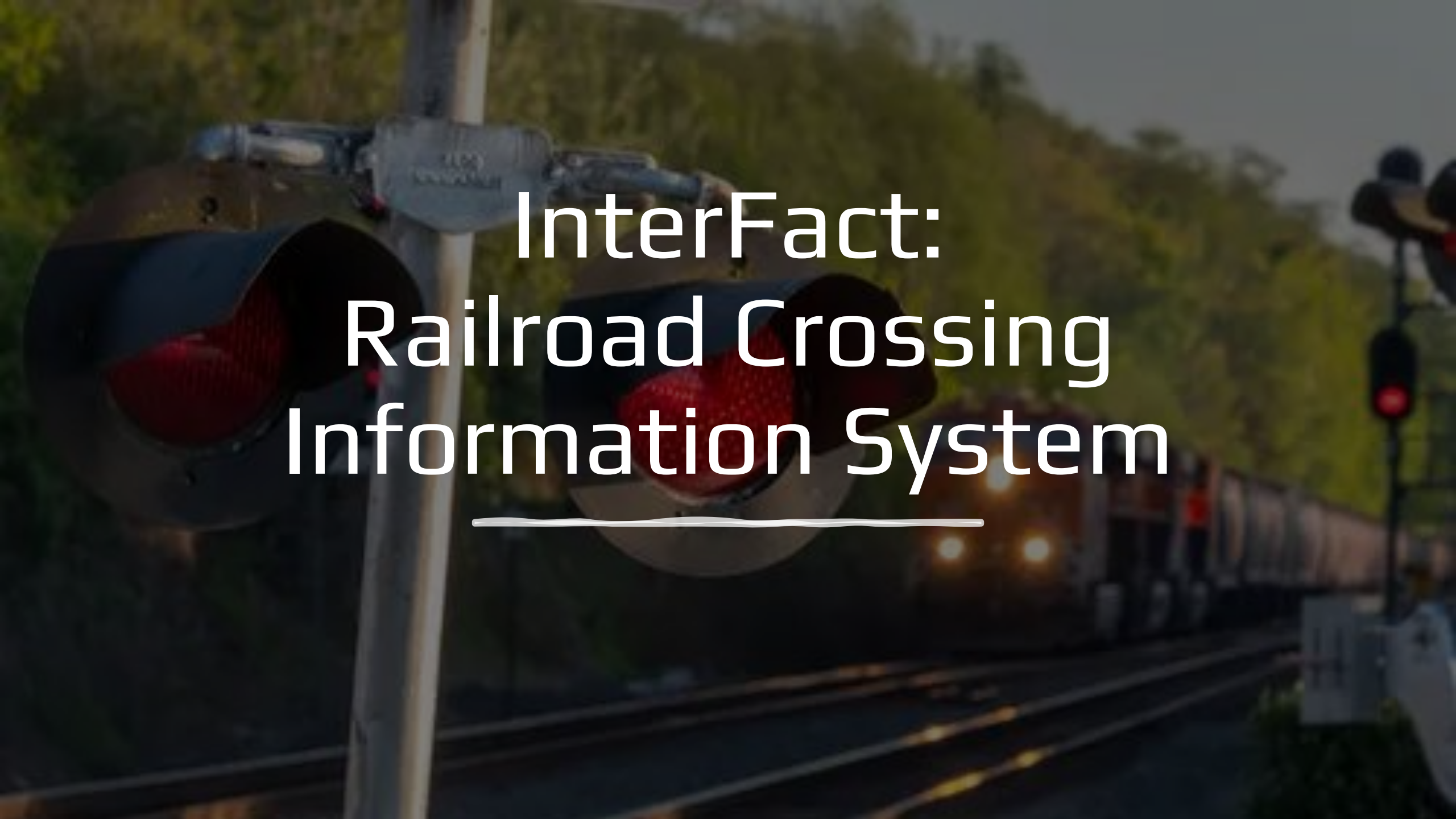


InterFact: Railroad Crossing Information System

Team Members

- Mason
- Brooke
- Ethan
- Bella
- Tanner

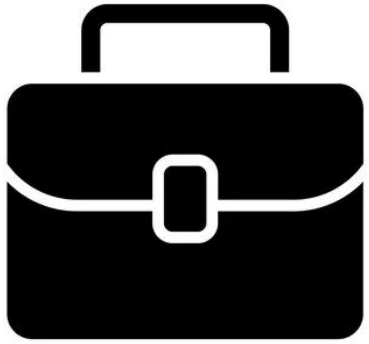
InterFact Client Information:

Mr. Kyle Johnson

CIO for the Muncie office of Emergency Management

Works with Emergency Operations / First Responders overseeing GIS mapping data, web applications, & other services for the Delaware Country Emergency Management Agency

Business Requirements



BR1:

Dispatchers being able to quickly see which train intersections are blocked

BR2:

Implement the Interfact project features into an API that can be smoothly integrated into any system

Use Case

- ***UC1:*** A dispatcher needs to find the quickest route possible for first responders to travel to a target location while avoiding blocked & closed railway intersections.
- Only use case for the client at this time.

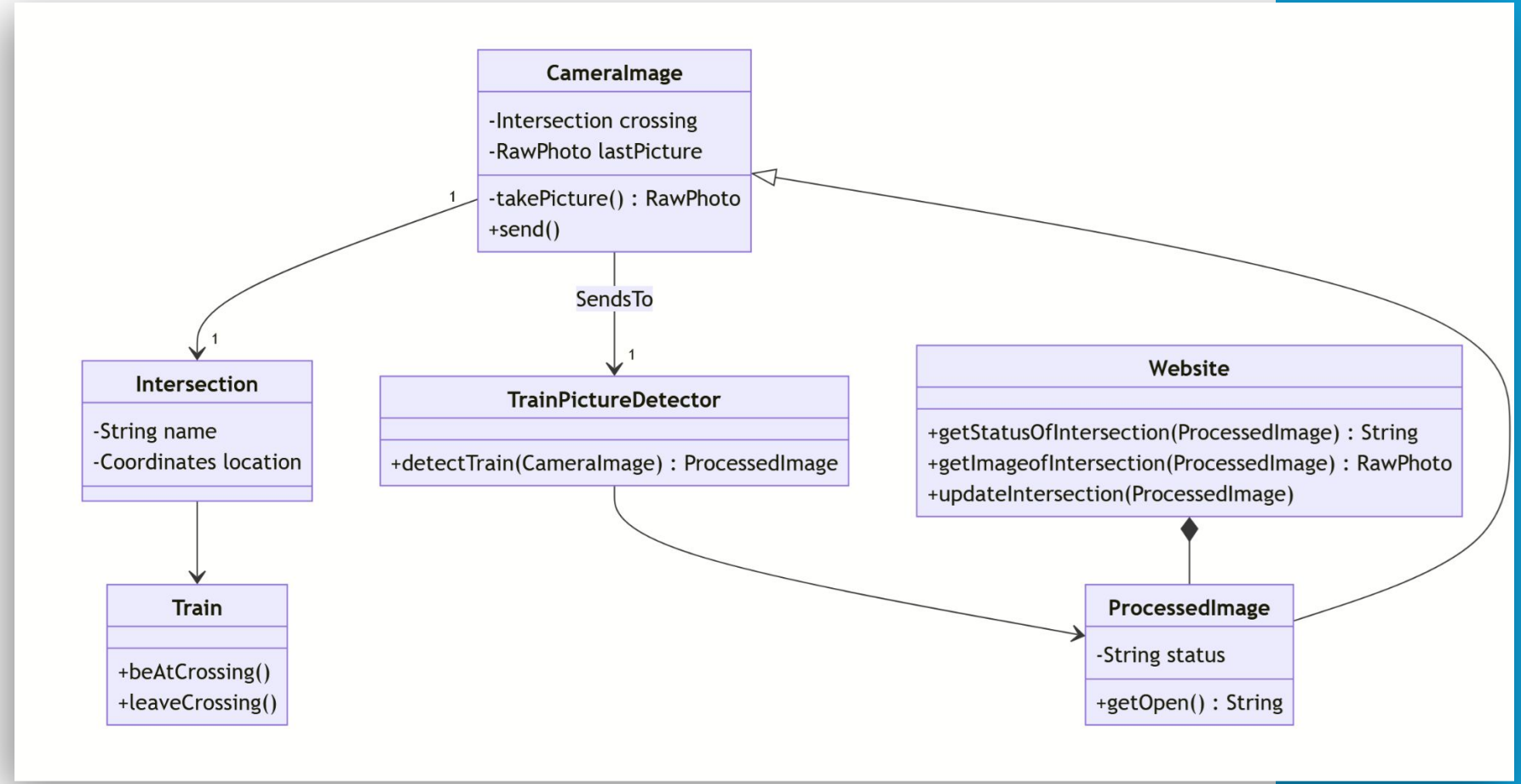
Functional Requirements

- (HIGH) View an interactive & responsive map with marked railroad crossings & their status.
- (HIGH) Project features are encapsulated within an API that contains endpoints for crossing locations, crossing status, & recent crossing images
- (MEDIUM) Select specific railroad crossings to view its coordinates/street name & the latest image from its camera feed.
- (LOW) Predict which crossings will be blocked by seeing which intersections have been crossed and when.

Non - Functional Requirements

- (HIGH) Intersection indicators must load in under 5 seconds
- (LOW) The system should be able to be updated without system downtime

Domain Model



TechStack

- *Front-End:*
  - Angular
- *Server:*
  - Firebase
    - Cloud Firestore
    - Cloud Functions
    - Real-time database
- *Programming Languages:*
  - Python

Prototype

1st Iteration Features

- View railway intersections on a map of the city
- Indicators will display via color their blocked status
- Ability to click on indicators to populate a window with pertinent information & a recent picture.

Mentor Feedback

- Feedback :
  - “Your domain model should be based on more real world applications rather than technical details”
  - “Double your time estimates, then double them again…”
- Changes Made:
  - Domain model is more practical & outlines more real world uses

Client Feedback

- Feedback:
  - “Our dispatchers operate on a closed system, could we use a plugin for our existing ArcGIS system?”
  - “I think a standalone system would be more beneficial…”
- Changes Made:
  - Migrating project to a web app based stand alone system.

Everyone's favorite Chicken Picture

Brooke

Mason

Bella

Ethan

Tanner