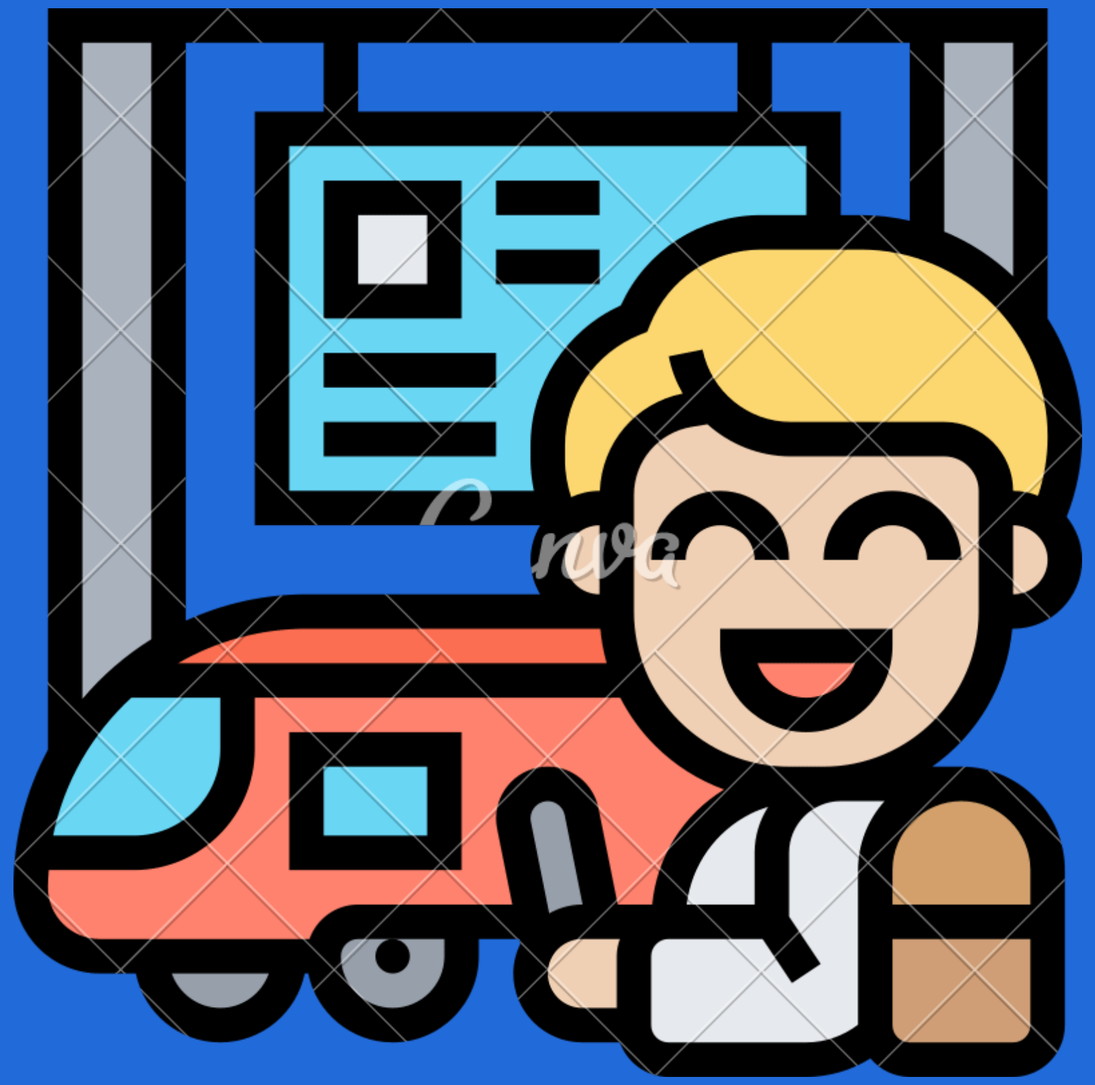
Automated Gate & Train Tracker



PROGRESS PRESENTATION

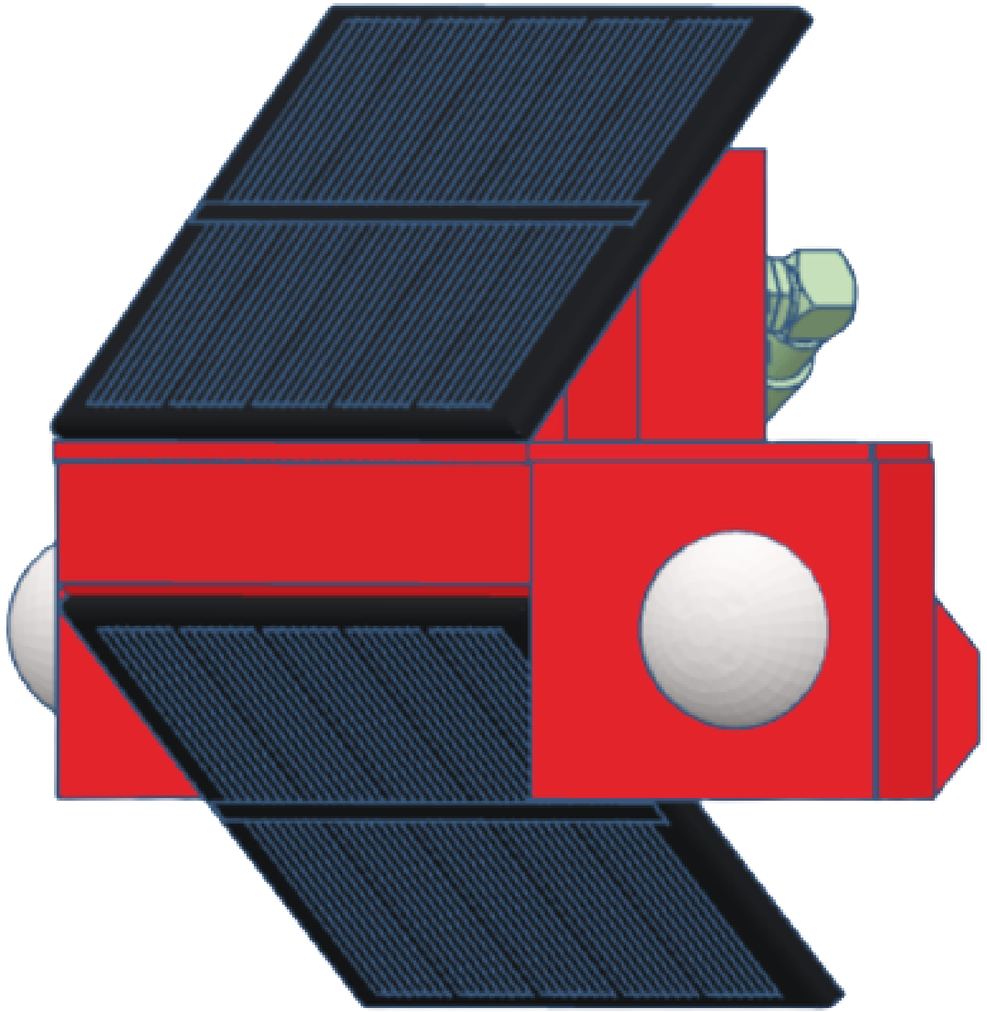
Introduction to IOT

Group AO

What is
AUTOMATED GATE & TRAIN TRACKER?

A device that can track locations of trains and apply automation for railway gates and get train stopping stations and much more...

Also assures the safety of passengers, street vehicles, and saves the time of substation passengers.



What components DO WE USE?

PIR sensors: allows us to determine the speed and direction of a train.

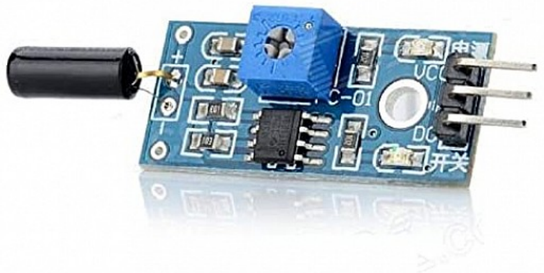
Vibration sensors: allows us to confirm whether the object passing by the sensors is a train or not.

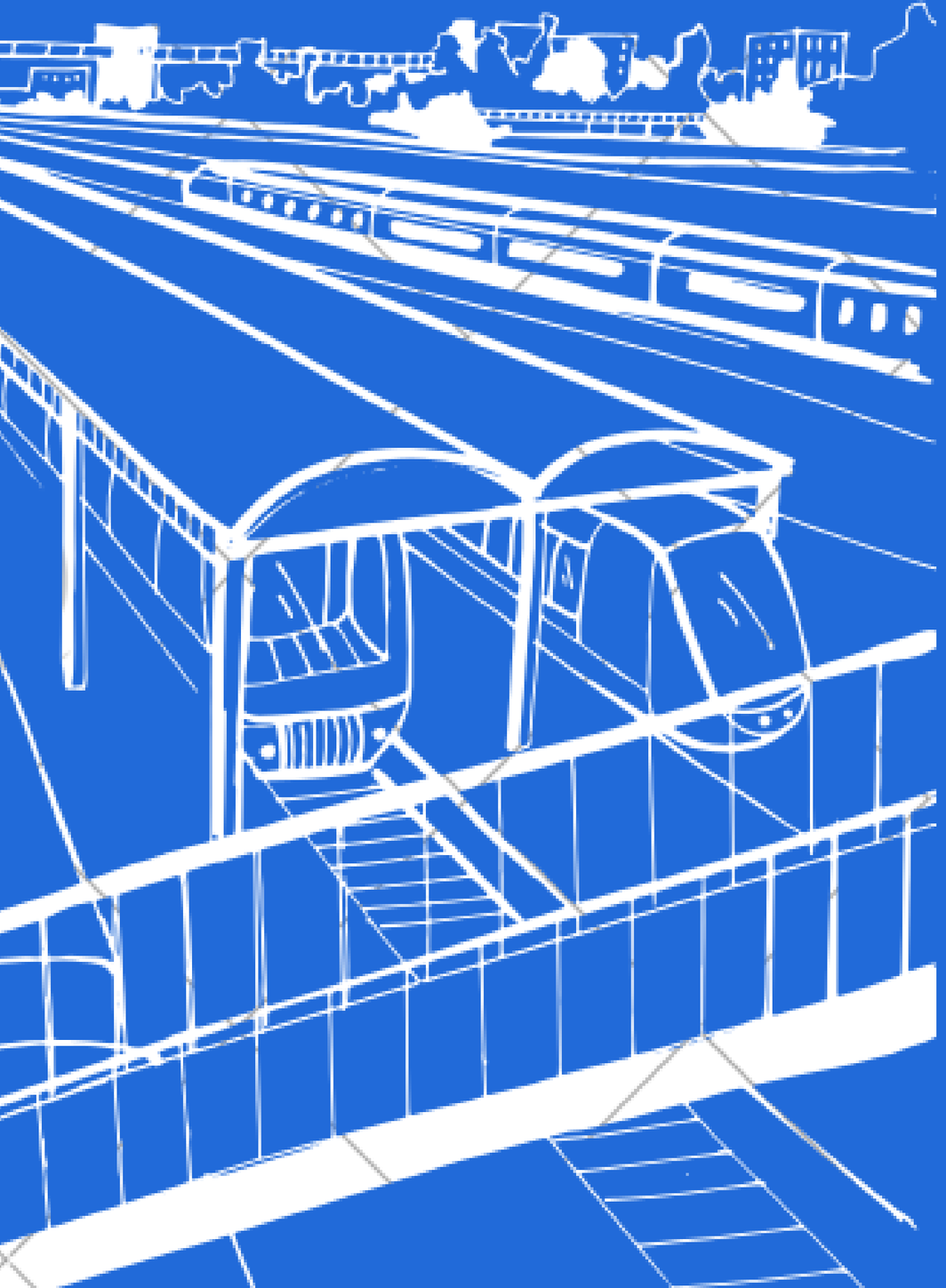
Ultrasonic sensor: allows us to confirm the tail or the end of a train.

GSM module: allows us to pass the collected data to the database.

Arduino NANO board: allows us to pass actions or tasks to all the sensors.

Mini solar panels: allows us to charge the inbuilt batteries of the device.





Why is it important?

Due to unprotected, unemployed, defected railway gates in Sri Lanka many accidents and crashes has occurred.

Due to the time it takes to find train stopping information and to find substation locations.

To get a clear idea of the train arrival time within railway gates. And to reduce street traffic.

Main objectives...

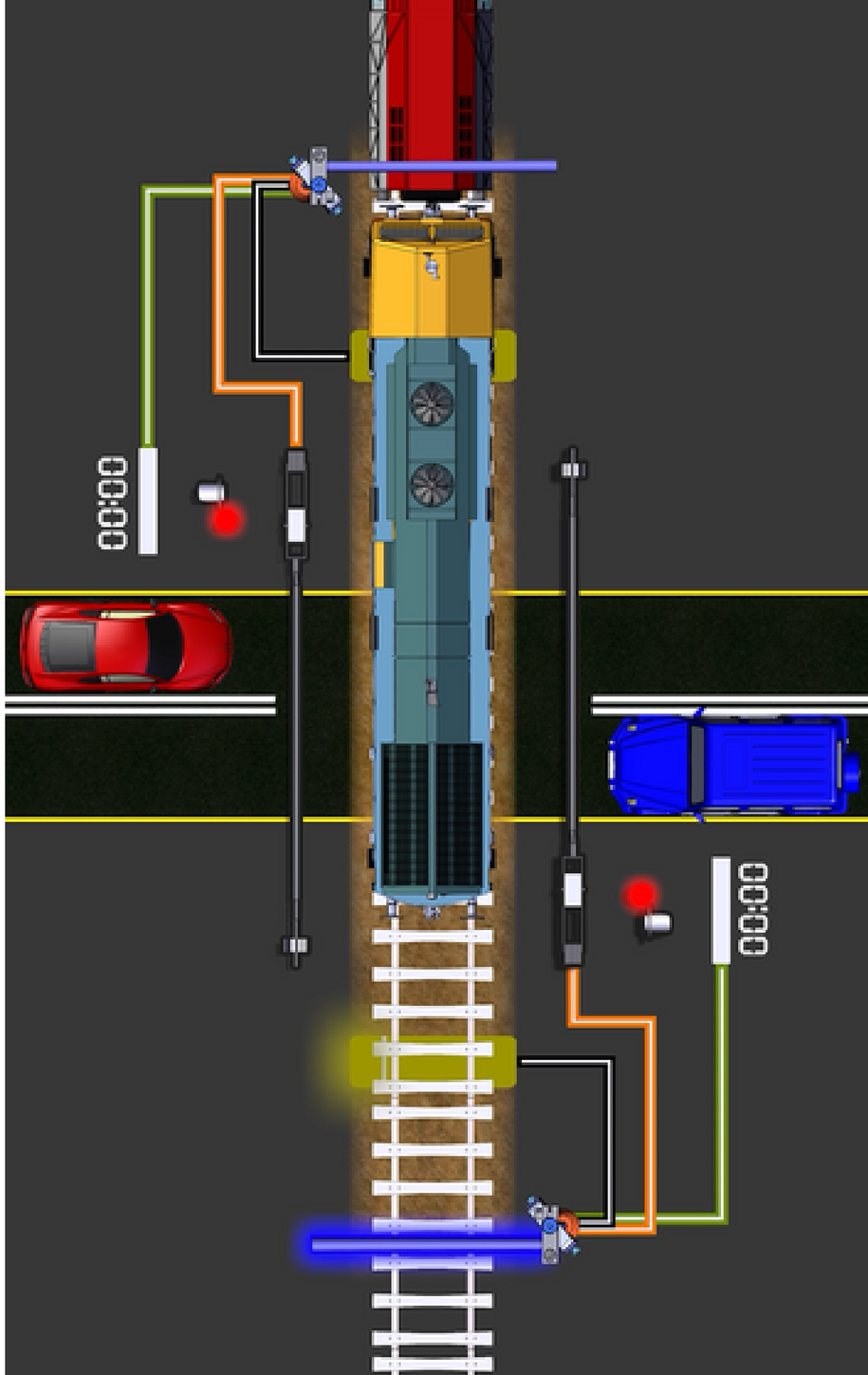
As the major point, these devices should be capable of identifying real trains.

Should be capable of getting train speeds, direction, and passthrough information.

Approximate time of arrival should be calculated with the given data and displayed within the rail gate.

Users should be capable of viewing approximate train locations through the website.

Train stopping stations & skipping stations should be displayed to the users through the web application.

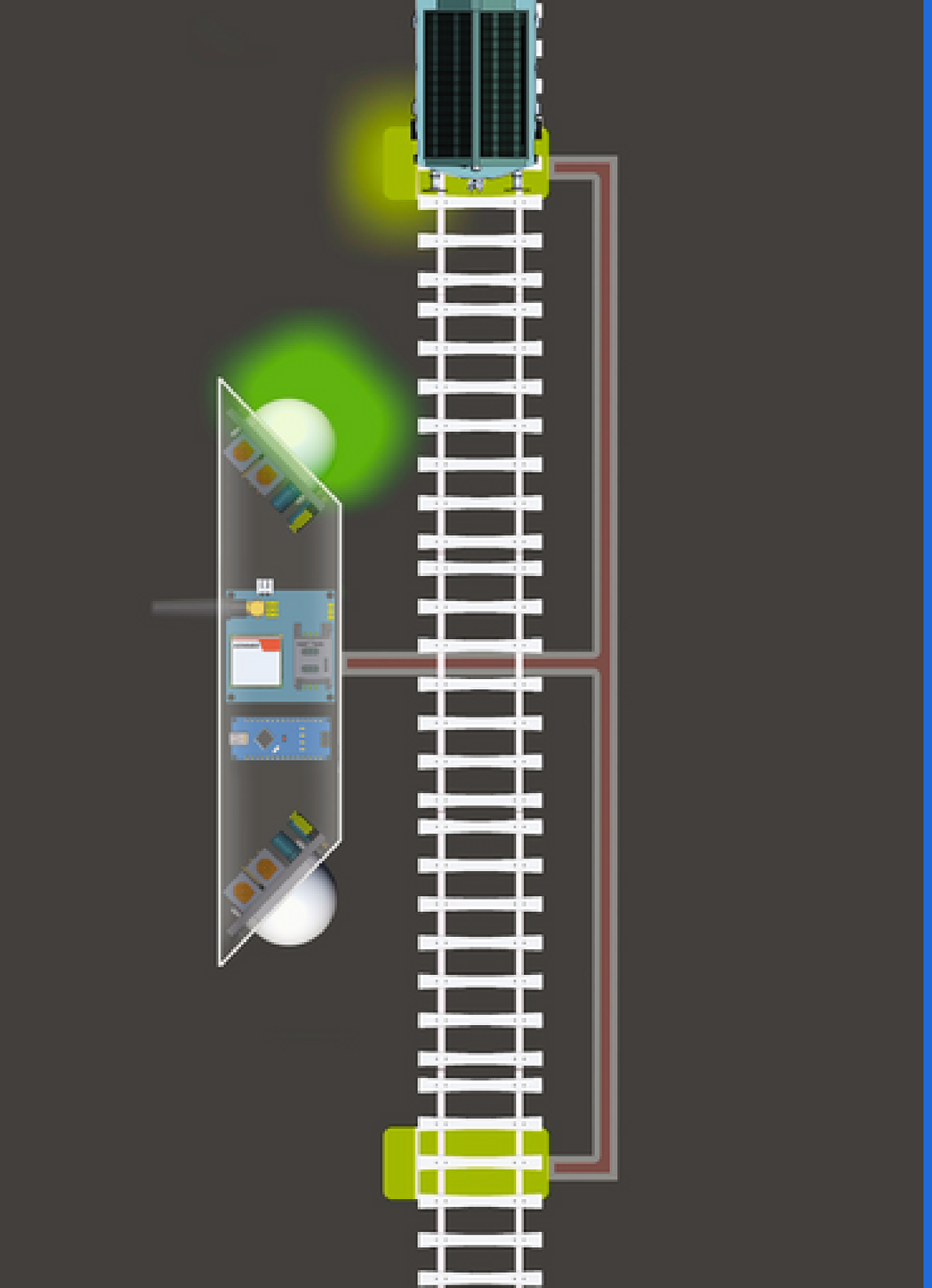


Hardware progress

COMPONENT REQUIREMENT INFORMATION GATHERING	100% - Finalized required hardware components
HARDWARE PURCHASE & COMPONENT GATHERING	100% - Gathered all hardware components
MODEL DESIGNING & PRINTING	100% - Designed & printed necessary casings
INDIVIDUAL COMPONENT BASIC TESTING	100% - Full tested individual components

Software progress

90% - Tested almost every component	ARDUINO SERIAL MONITOR TEST
30% - In progress	PROCESS CALCULATION FUNCTIONS
10% - Structured on paper for now	DATABASE & WEB DEVELOPMENT
0% - Hasn't started yet	FINAL TESTING & PROTOTYPE IMPLEMENTATION



Scope of the project

Since the devices are traced by their unique IDs, train locations can only be taken approximately.

The web application may not be accessible to the passengers or other users who aren't connected to a cellular or WIFI network.

Train arrival time stamp could slightly change due to speed changes of the train.

We hope that this implementation would help to solve the current safety issues and time wastage the people get while looking for train locations, substations and stops.

Group members

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