Team 1

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Railway System

Project Description

Our team’s project focuses on improving traffic with our self-made system. Focuses on improving the situation regarding railroad crossing interweaving, creating a proper automatic traffic control system while minimizing traffic jams.

Items required

- Esp32(38 pins) *Type C*
- Expansion board
- MG908 9g Metal
- LED lights
- Buzzer
- Wire jumper M/M, M/F, F/F
- Resistor

Work Flow

1.Default State (Gate Open)

- The green LED is ON.
- The red LED and buzzer are OFF.
- The servo motor holds the popsicle stick barrier in the "open" (vertical) position.

- The IR sensor is aimed across the "track," waiting to be triggered.

2. Train Approaches (Gate Closing Sequence):

- The train breaks the beam of the IR sensor.
- The system immediately turns the green LED OFF.
- The red LED begins to blink, and the buzzer starts beeping for a short warning period (e.g., 3 seconds).
- After the warning, the servo motor smoothly rotates 90 degrees to lower the barrier into the "closed" (horizontal) position

3**. Train Passing (Gate Closed):**

- While the IR sensor continues to detect the train, the barrier remains down.
- The red LED stays solid ON, and the buzzer is silent (or stays on, your choice).

4**.Train has Passed (Gate Opening Sequence):**

- The end of the train passes the IR sensor, and the beam is restored.
- The system turns the red LED OFF.
- The green LED turns ON.
- The servo motor rotates back 90 degrees, lifting the barrier to the "open" position.
- The system returns to the default state, ready for the next train.

Team

- **Bong Satya** acting as grandmaster aka team leader
- **David** works as the treasury and slide designer
- **Bong Linna** acts as the board manager
- **Lysha** assisted with slides and is assistant of Bong Satya