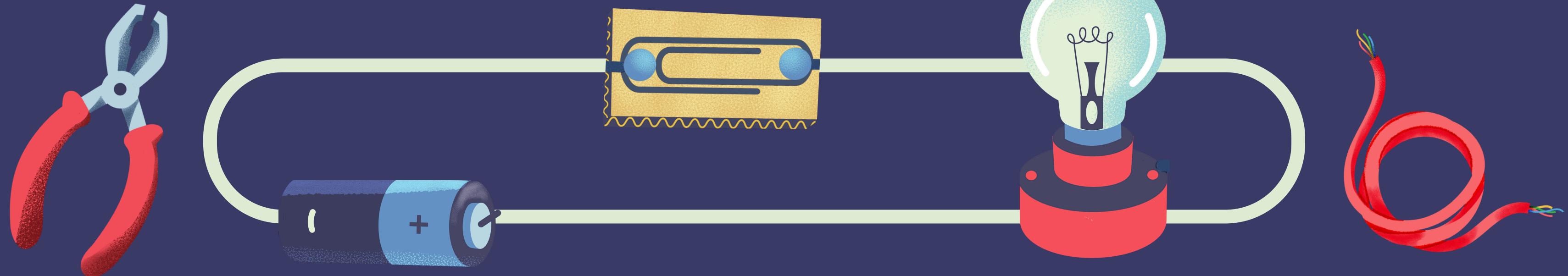


Basic Engineering Circuit

Automatic Railway Gate System (ARGS)

Presented by : The Dominions



Batch 11, Sem II, Section B



GROUP NAME: THE DOMINIONS



Batch 11, Sem II, Section B



Hein Si Thu Tun
TNT - 2208

- Construction and Decoration Department
- PowerPoint Slide Creator
- Material Supplier



Soe Htet Aung
TNT - 2238

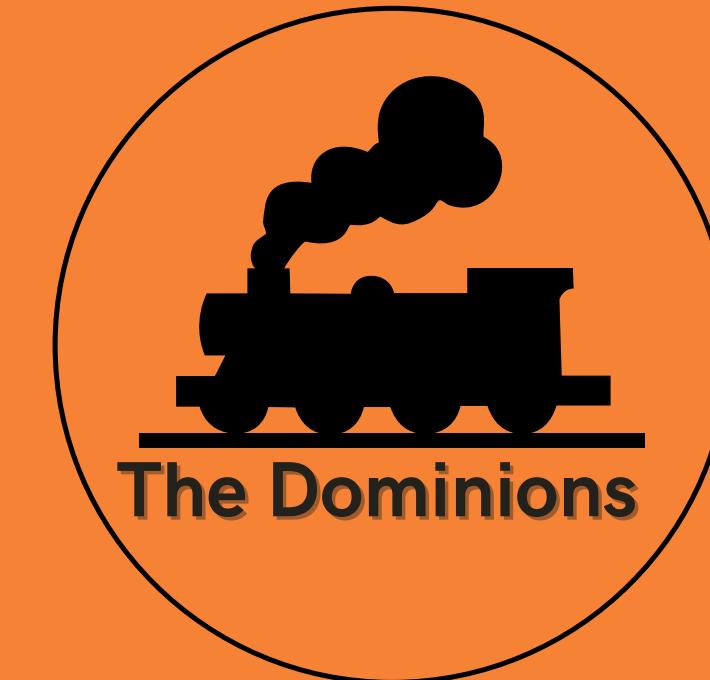
- Construction and Decoration



Aung Myo Pyae
TNT - 2180
(Leader)

- Head of the Project
- Circuit Designer
- Coding & Simulation Tester
- Material Supplier
- PowerPoint Slide Creator (Final)
- Decoration Refiner

Team Members



Hnin Aeint Shoon TNT - 2201

- Construction and Decoration Department



Thae Nu San TNT - 2175

- Construction and Decoration Department
- Material Supplier



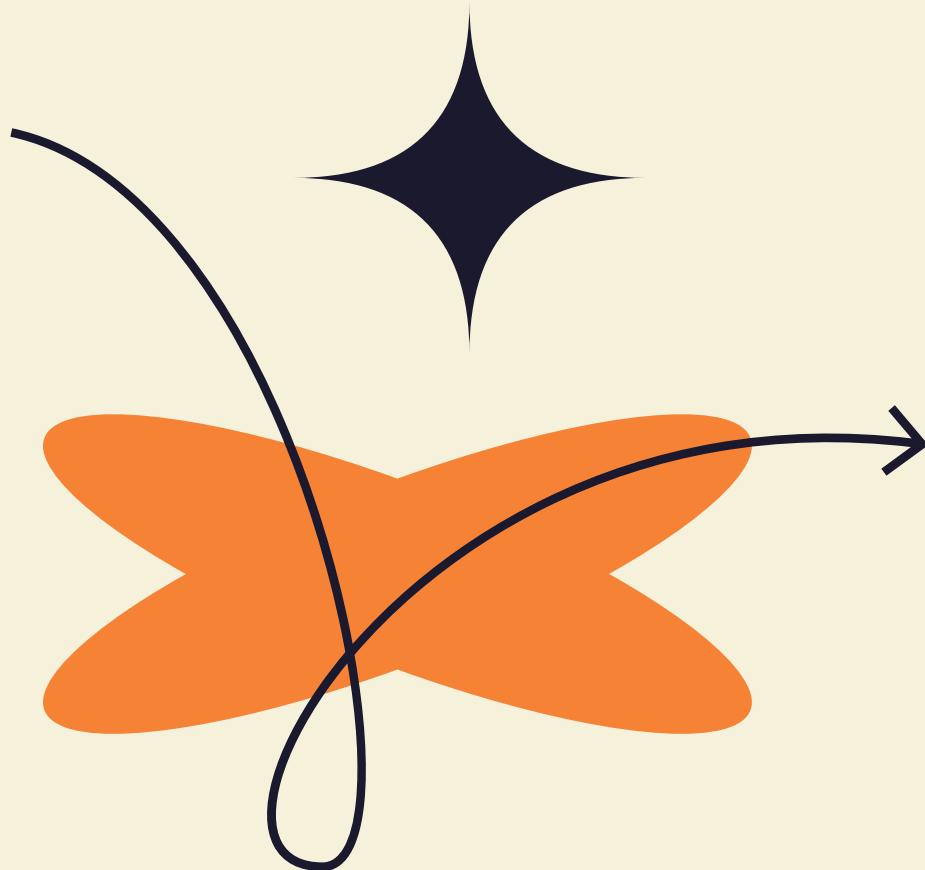
Htoo Yati Lin TNT - 2152

- Construction and Decoration Department
- Material Supplier

Team Members



Contents



Project Objectives



How we got the idea?



Process of the Project



Circuit Components & DIY Models



Conclusion

Project Objectives



- Design and Development : Efficient railway gate control circuit to manage train and car transportation traffic safely.
- Automation : Automate the opening and closing of the railway gate.
- Safety : Ensure the safety of passengers.
- Power Efficiency : Optimize the power consumption
- Cost Effectiveness : Minimize the costs and the maintenance of the things
- User Interface : Easy to control and monitor the system

HOW WE GOT THE IDEA?

- The first idea for creating an automatic railway gate system involves designing a system that automatically controls the opening and closing of railway gates at a level crossing.
- This system uses sensors, such as infrared sensors, placed at a certain distance from the crossing to detect the approach of a train.
- When a train is detected, the sensors send a signal to a microcontroller, which triggers the gates to close, ensuring the safety of vehicles and pedestrians.
- Once the train passes and clears the crossing, the sensors detect its absence, and the microcontroller signals the gates to reopen.
- This project not only demonstrates the application of basic electronic components and programming but also highlights the importance of automation in enhancing safety and efficiency in railway operations.

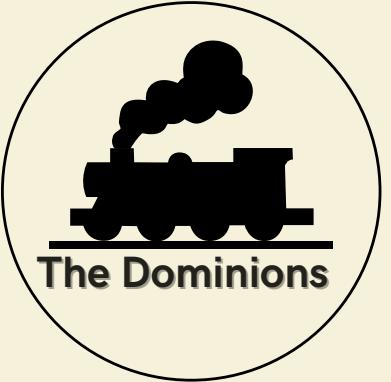


AUTOMATIC RAILWAY GATE SYSTEM(ARGS)

PROCESS OF THE PROJECT



- 1 Automatically opening and closing the railway by detecting
- 2 Used two IR sensors on each of the tracks to detect
- 3 Connected to Arduino Board which is also known as the brain of the system
- 4 When the train approaches, break IR rays and receive signals
- 5 Finally, it decides whether it needs to open or not but distance measuring

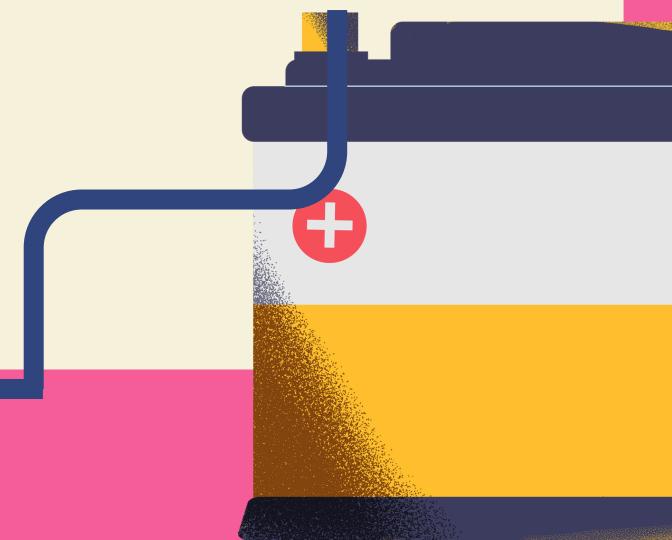


COMPONENTS OF THIS PROJECT



Raw materials and circuits board are included!

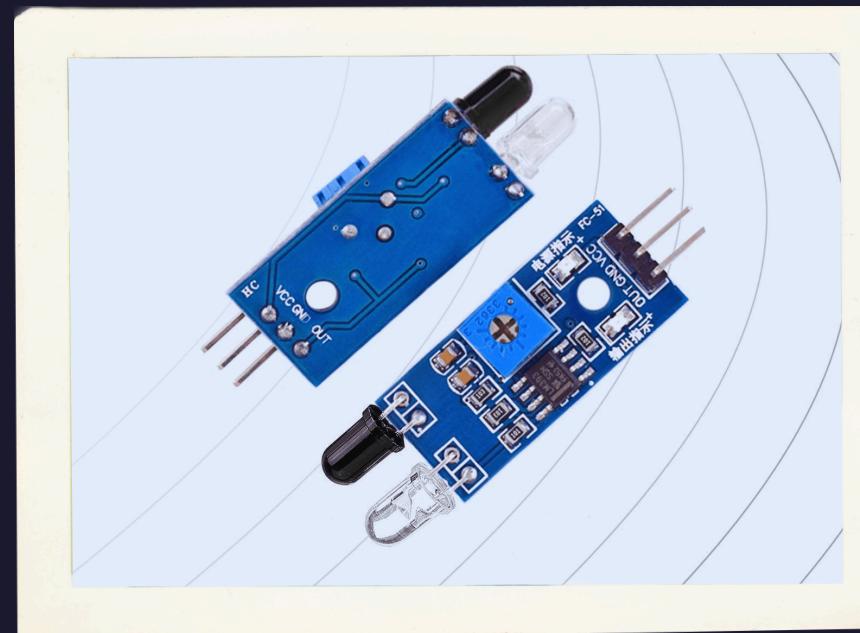
- Arduino UNO R3 Development Board
- 2 IR Sensors
- 2 Servo Motors (SG90)
- 2 Traffic Light Modules (Own Creation)
- 5mm LEDs (Green, Yellow, Red)
- 5mm White LEDs for Streetlights
- 2 Breadboards
- 9V Panasonic Batteries
- Jumper Wires
- Simple Wires
- L7805 Regulator IC (9V to 5V voltage Reduction)
- Resistors (220 Ohms)
- 2 DIY Tunnels (Own Creation)
- Fake Grass
- Mini Train Compartments
- Train Tracks
- Plastic Board for Flyover
- 2 Mini Cars
- Other Decoration Materials



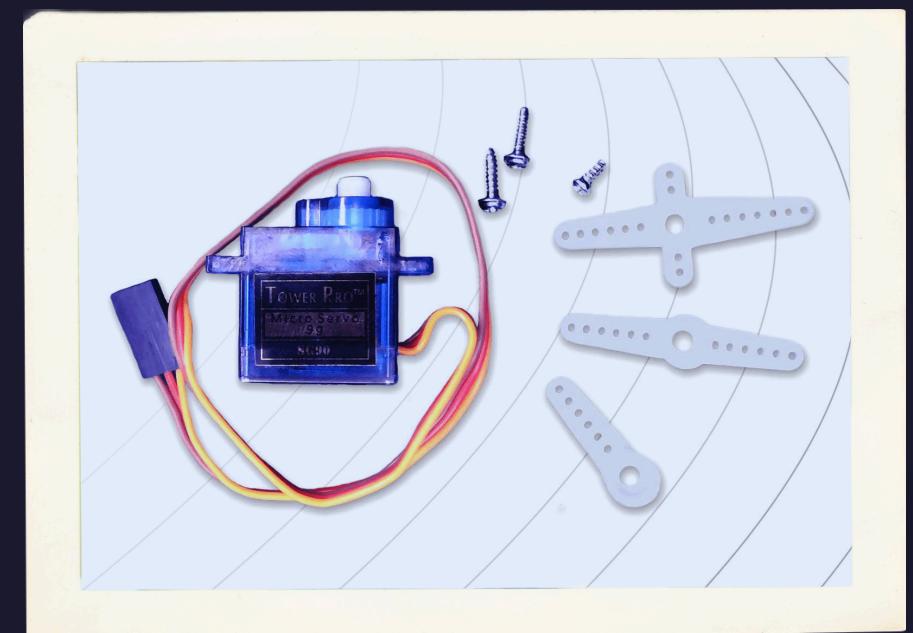
Components



**Arduino UNO R3
Development Board**



IR Sensor

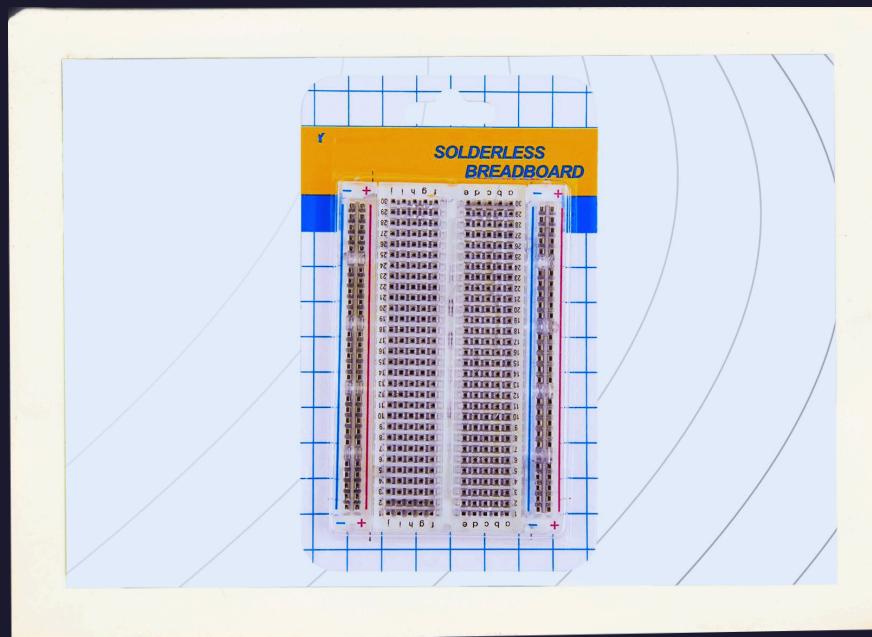


Servo Motor (SG90)



**5mm LEDs
(Green, Yellow, Red, White)**

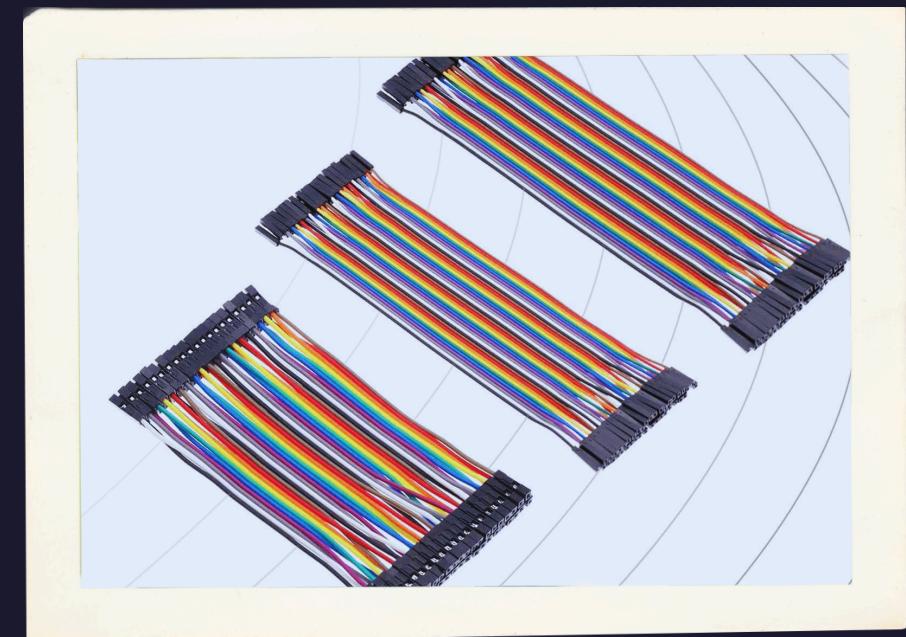
Components



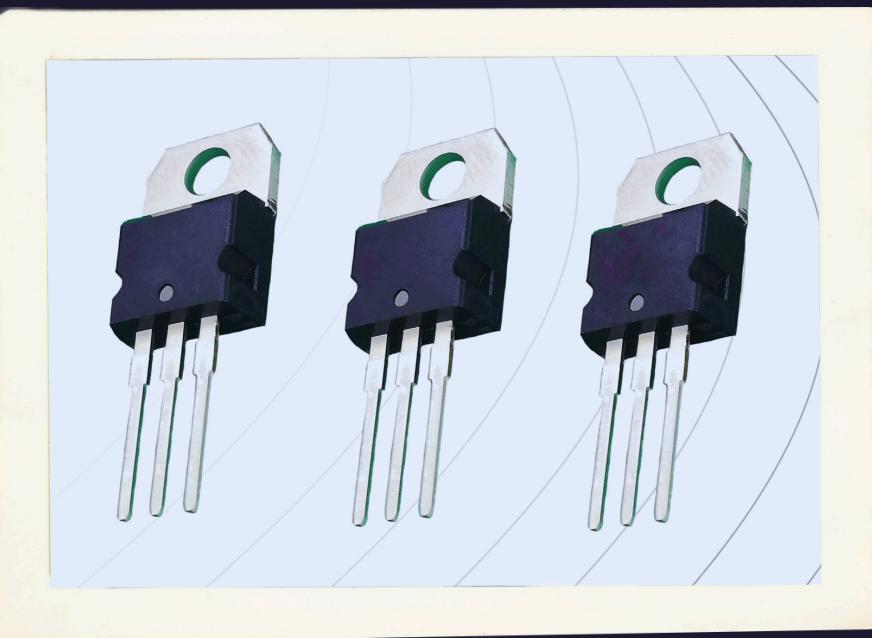
**Transparent
Breadboard**



**9V Panasonic
Battery**

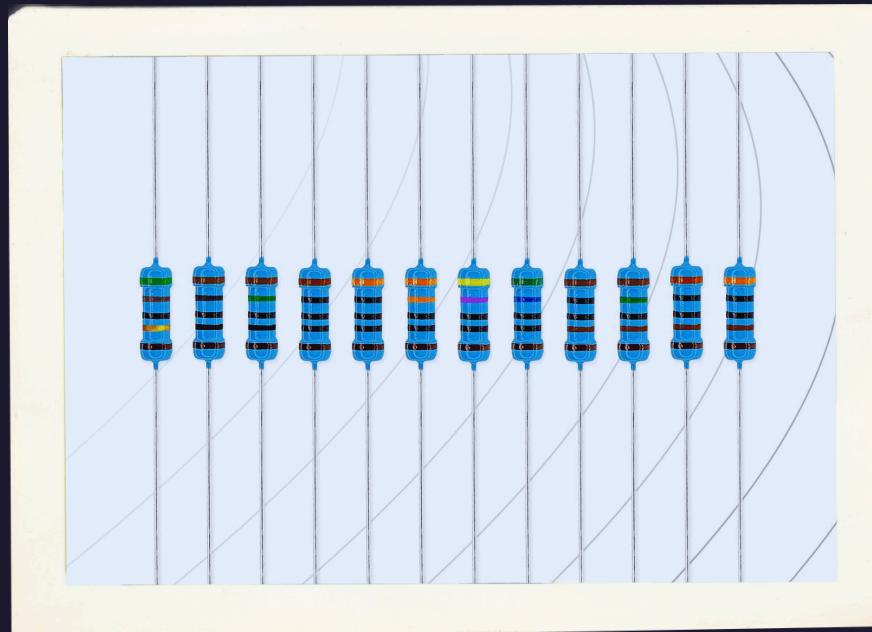


Jumper Wires

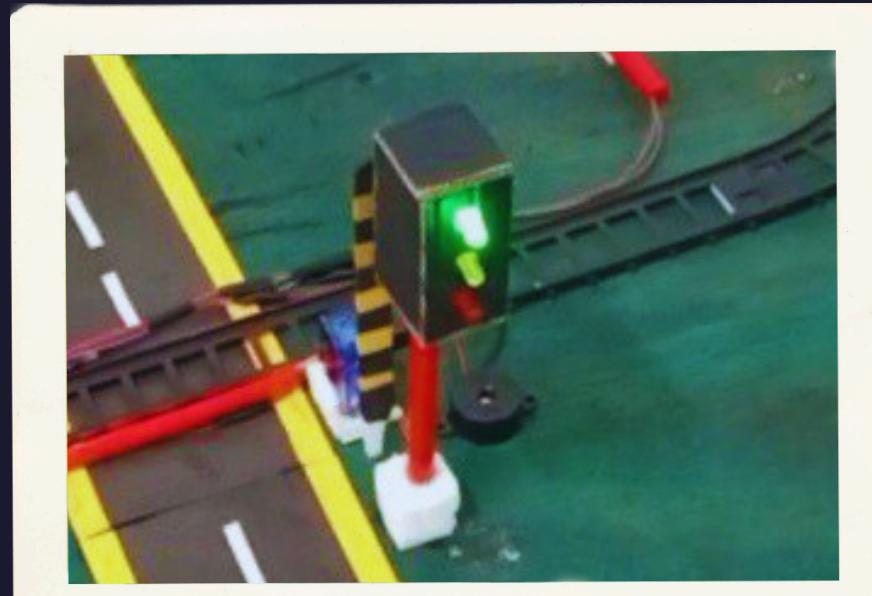


**L7805 Regulator IC
(9V to 5V Reduction)**

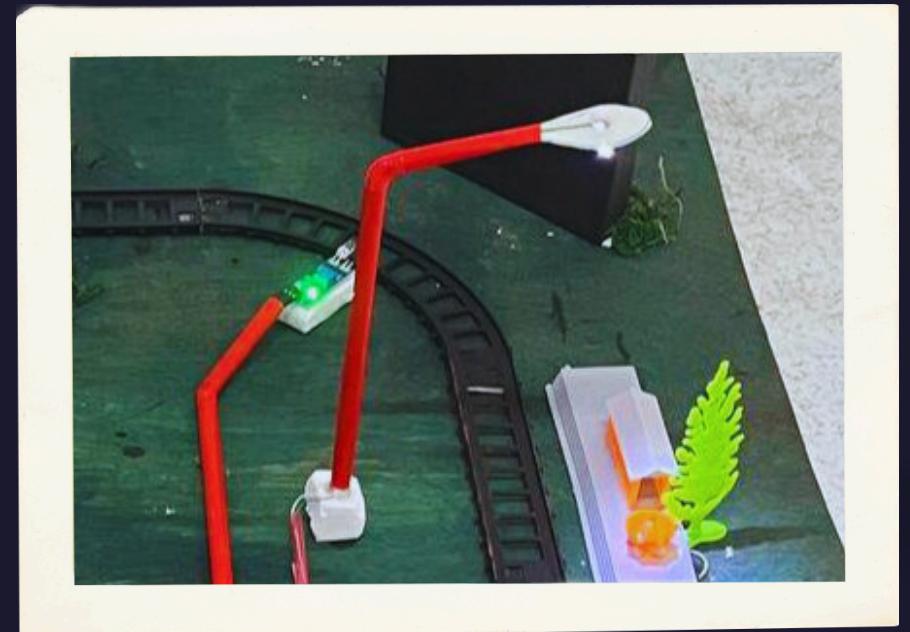
Components



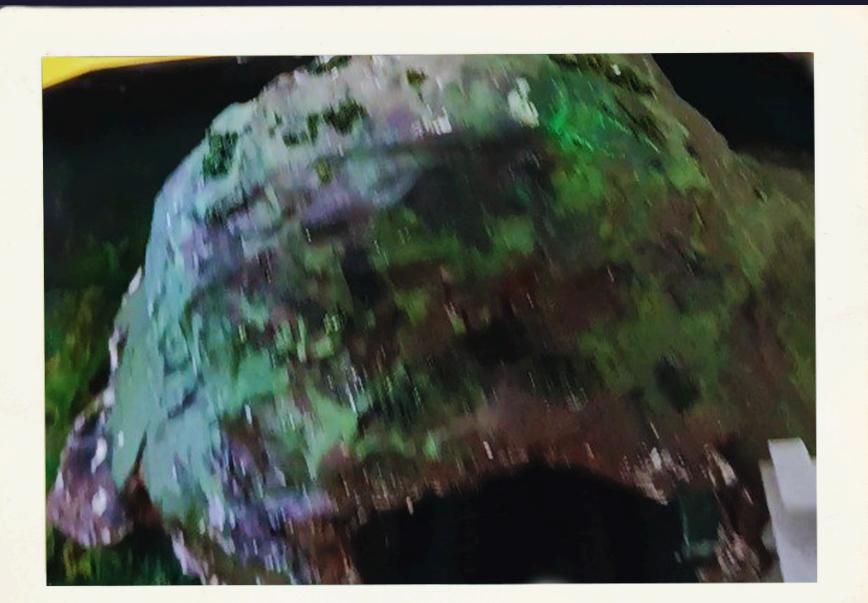
Resistors (220 Ohms)



**Traffic Light
Modules (DIY)**



Streetlights (DIY)

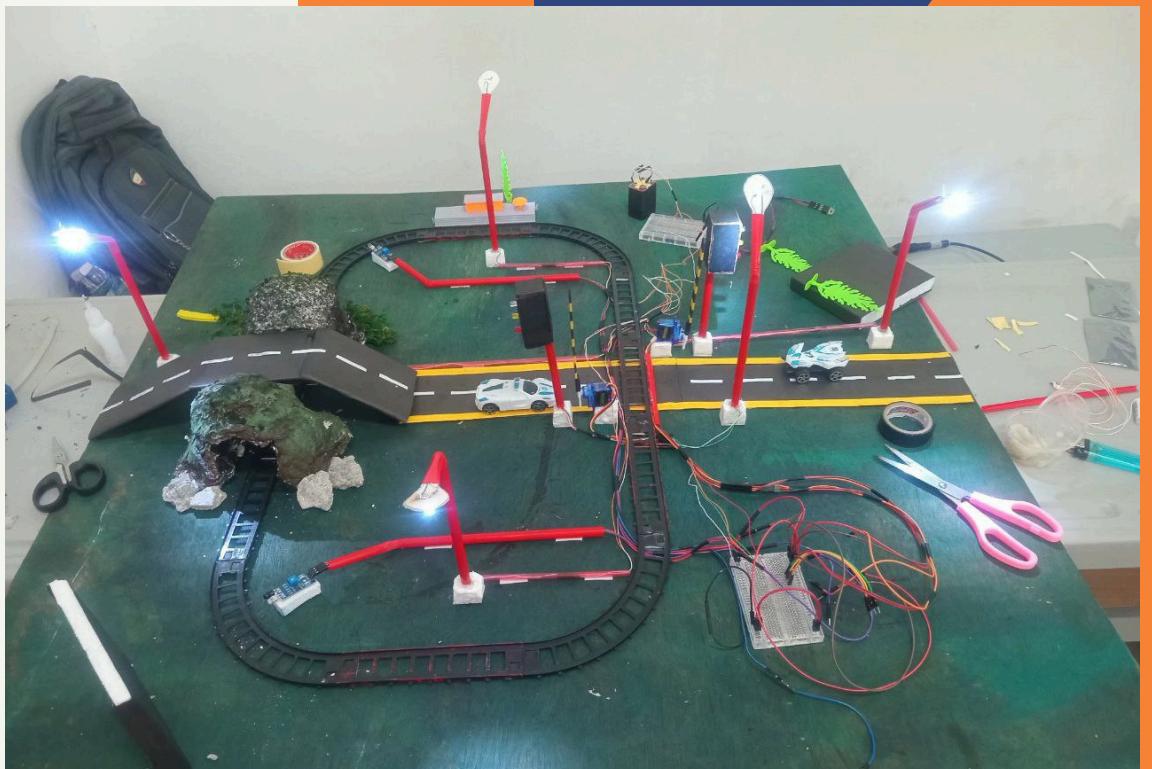
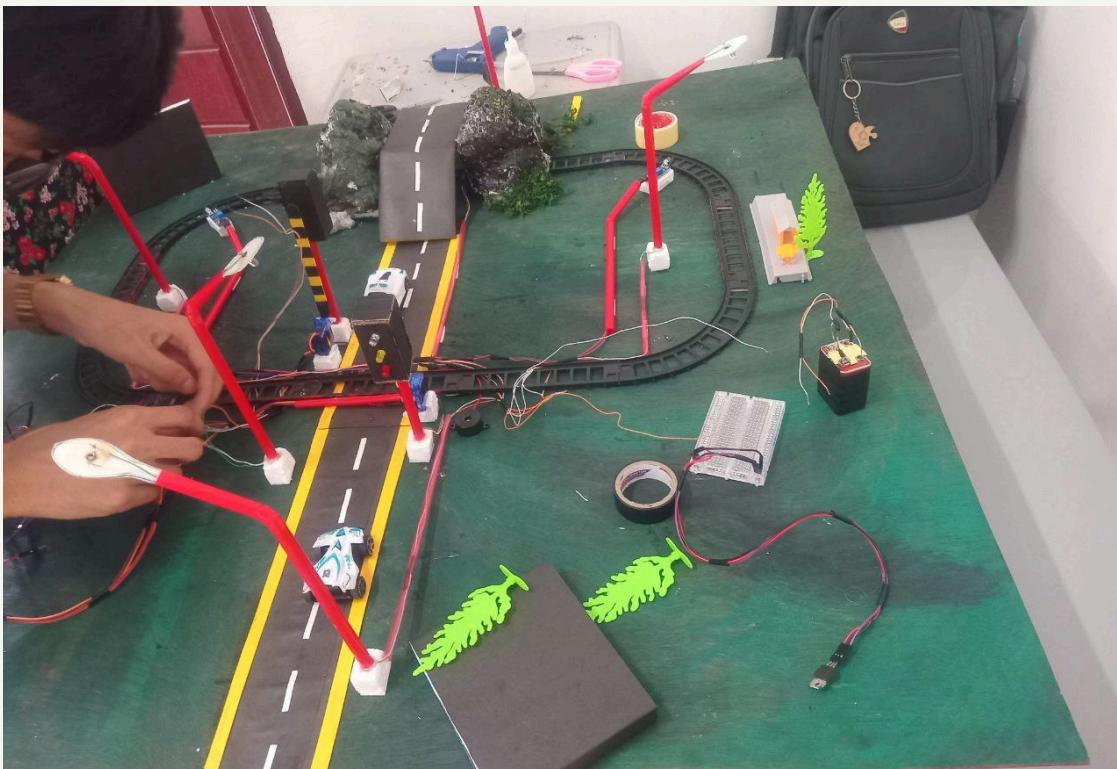


Tunnels (DIY)

WORKING IN PROGRESS

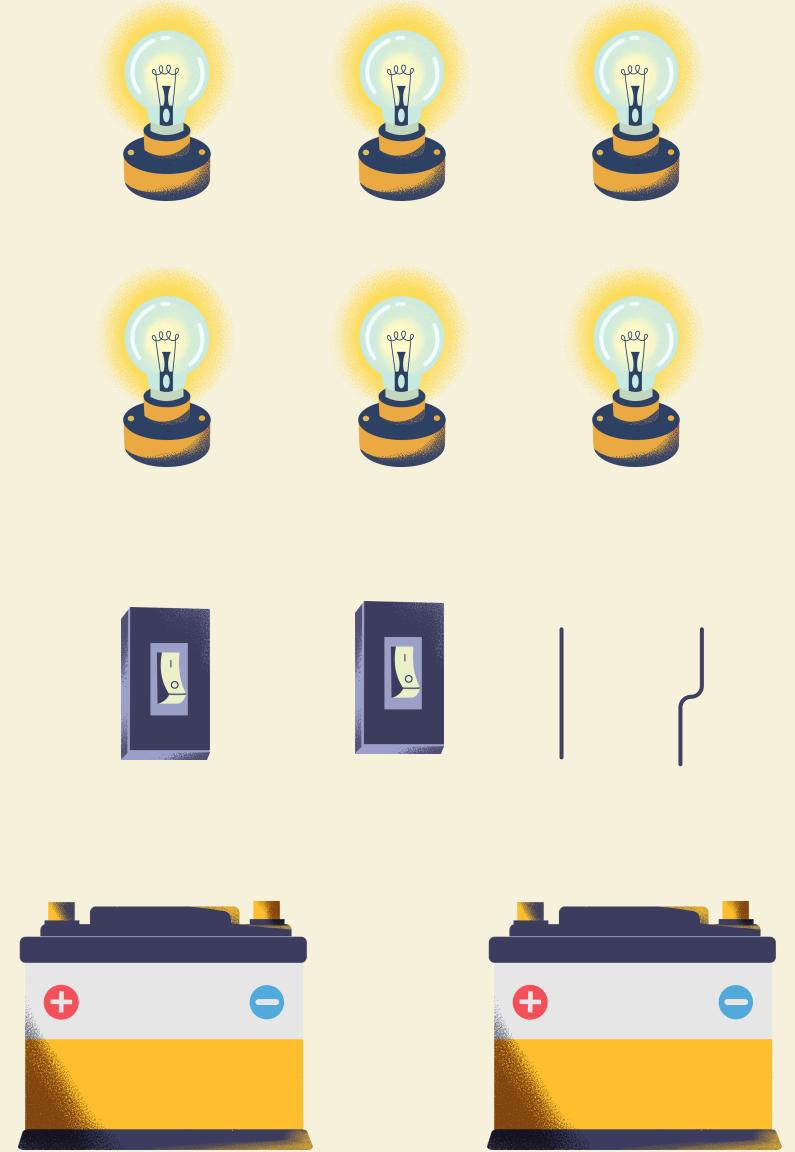


Team coordination and effective communication are crucial for the successful development of the automatic railway gate system project. Each team member is assigned specific roles, such as circuit design, sensor integration, microcontroller programming, and testing, to ensure that all aspects of the project are covered. Regular meetings are held to discuss progress, share updates, and troubleshoot any issues that arise. The team also collaborates closely during the testing phase, ensuring that all components function together seamlessly. Open communication and a collaborative spirit help maintain momentum and ensure that the project stays on track, allowing the team to meet deadlines and achieve the desired outcomes efficiently.

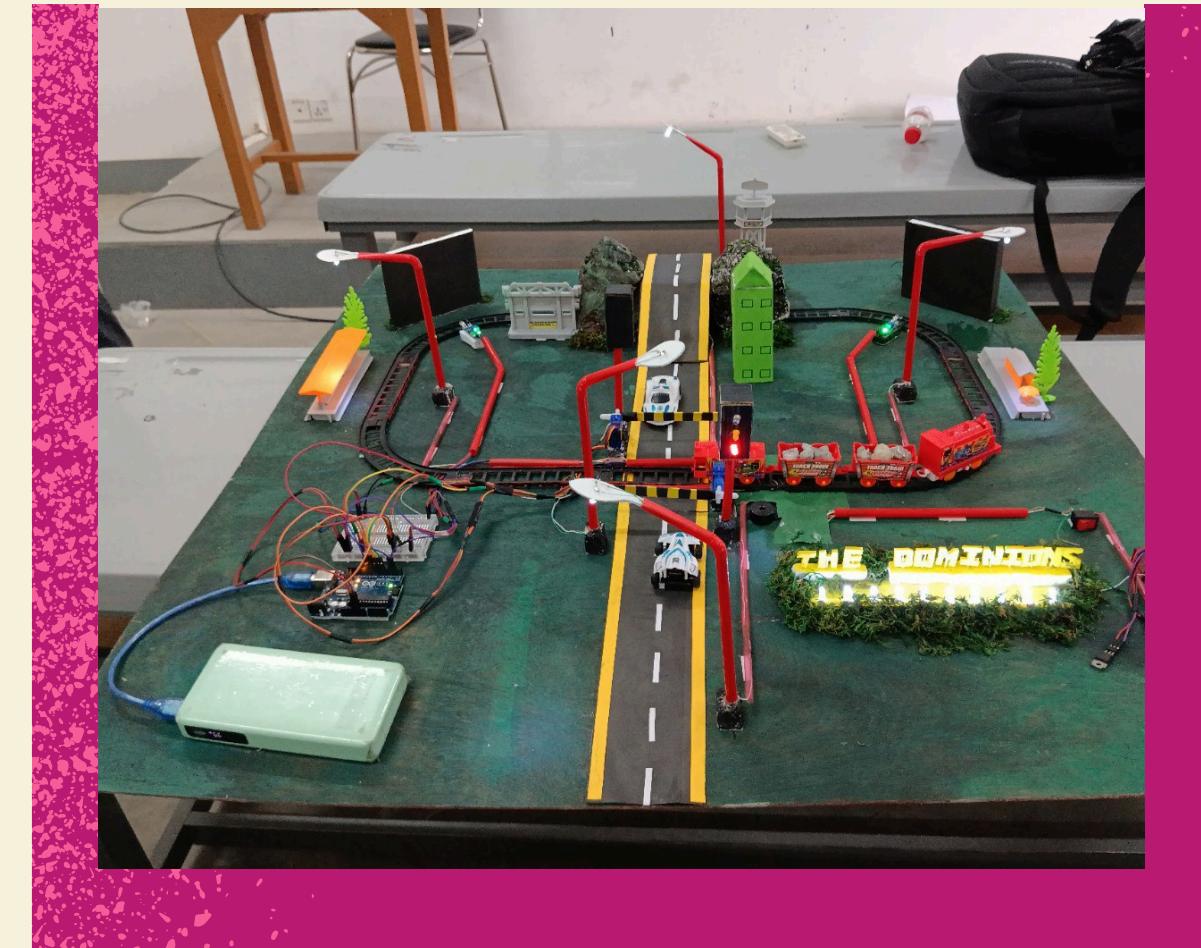
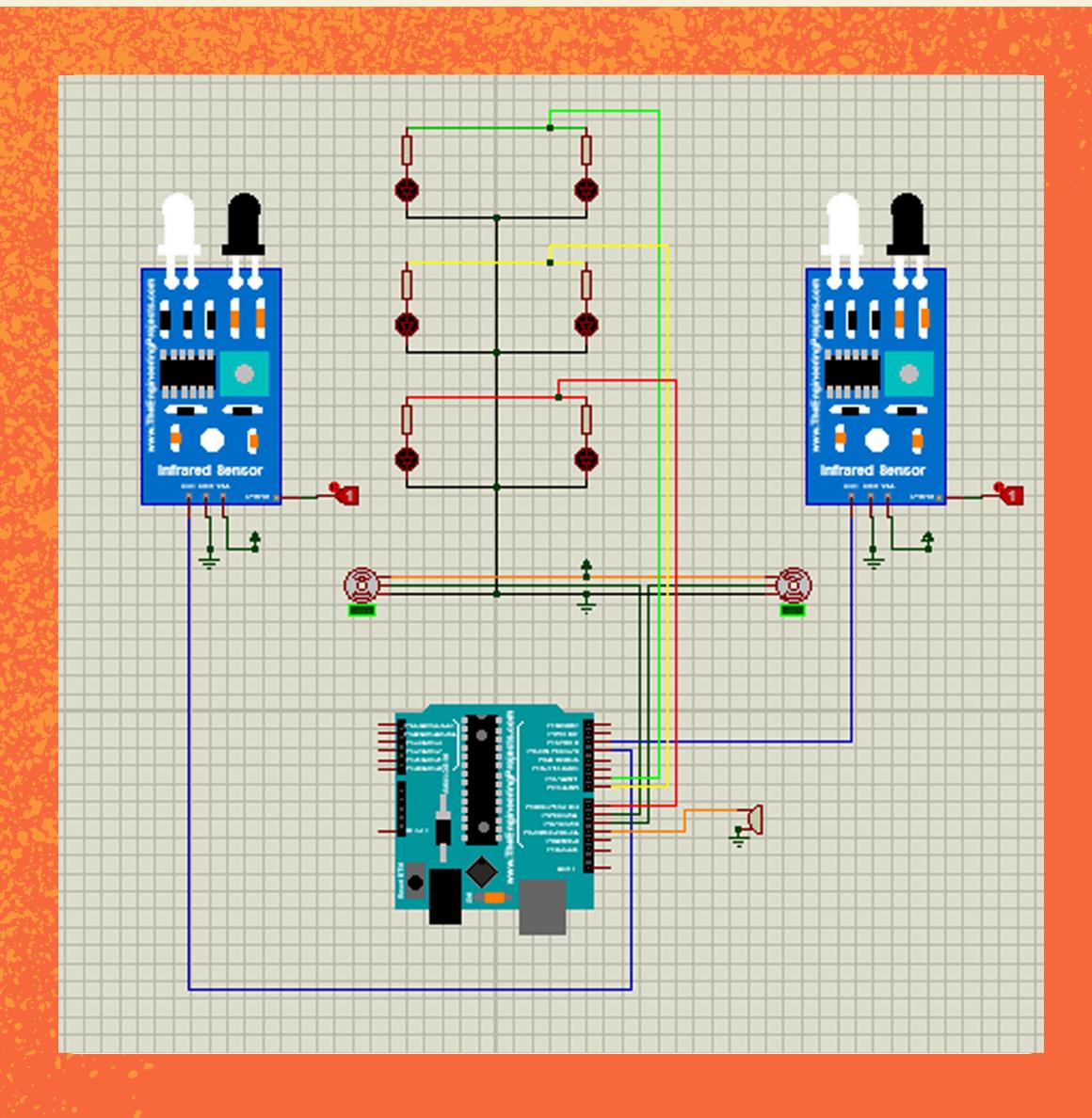


IDEA TO REALITY

We make our idea into the materialistic output which is a great success to us.



SIMULATION OF OUR PROJECT

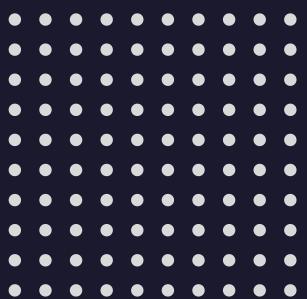
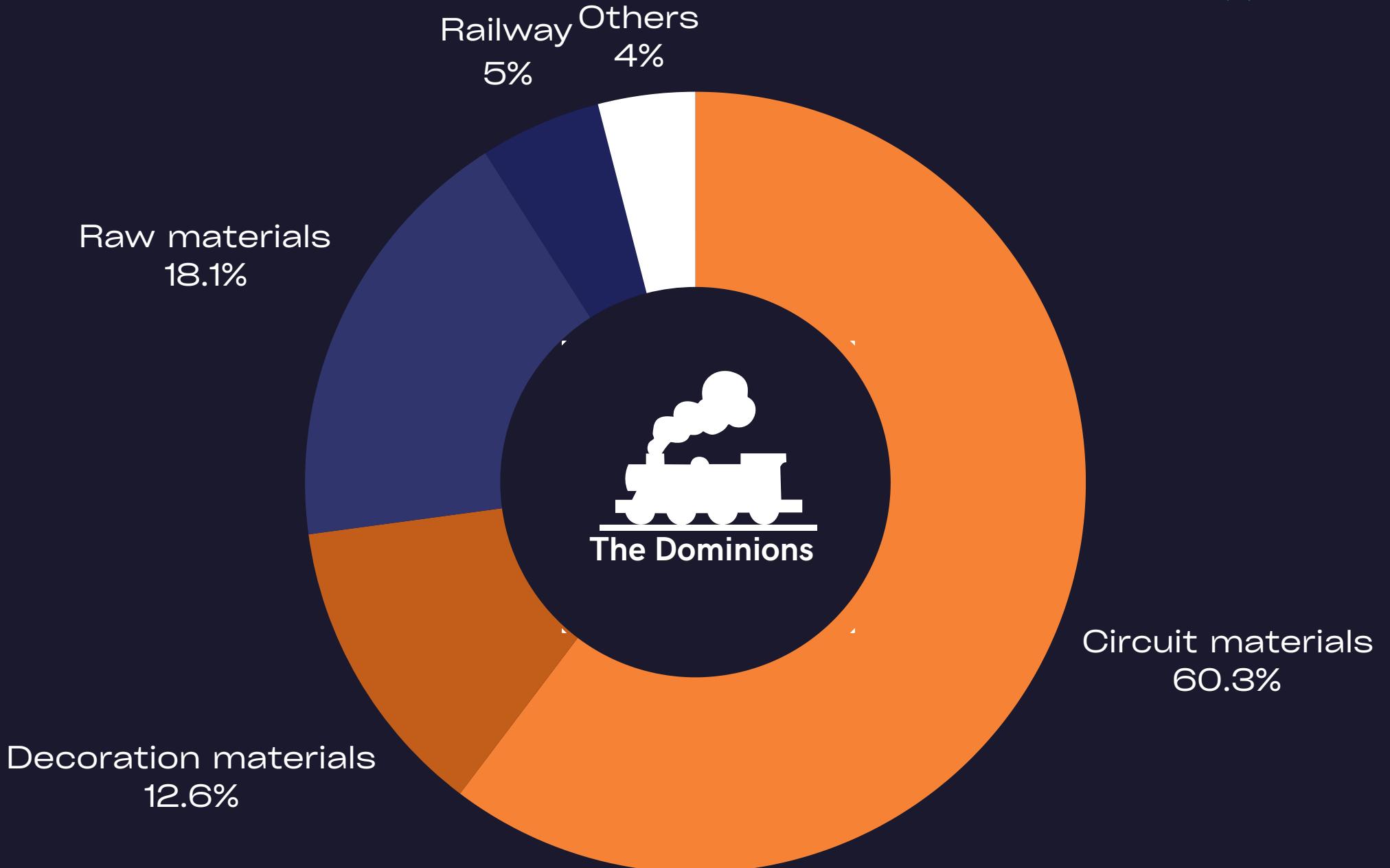


PRACTICAL FINAL OUTPUT

ESTIMATED BUDGET

We minimize our spending to save our budget, so we prioritize self-making things and focus on own creation.

The Estimated Amount of Our Project is Two Lakhs Kyats Only (200,000 Kyats)



THANK YOU