SMART TRAFFIC LIGHT SYSTEM WITH ACCIDENT DETECTION AND EMERGENCY RESPONSE INTEGRATION

LOGISTICS PROJECT MANAGEMENT

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PROJECT SCOPE

The Smart Traffic Management System will be designed to **improve logistics efficiency, safety, and emergency response** through:

🧠 **AI-Powered Traffic Signals** – Dynamic adjustments for optimized flow, prioritizing trucks & emergency vehicles.

🚨 **Accident Detection & Response** – Real-time sensors & cameras for instant accident detection and signal adjustments.

📡 **Real-Time Traffic Data Monitoring** – IoT-based congestion tracking with alerts & rerouting for logistics operators.

PROBLEM STATEMENT

🚦 **Traffic Congestion & Logistics Delays**

- Fixed traffic signals slow freight deliveries.
- Increases fuel costs & disrupts supply chains.

🚑 **Emergency Response Delays**

- Static signals block ambulances & fire trucks.
- Slower medical aid can lead to life-threatening delays.

⚠️ **Lack of Real-Time Accident Response**

- Traditional systems don’t detect accidents.
- Causes bottlenecks & secondary crashes.

PROJECT OBJECTIVE

ENHANCE LOGISTICS AND CARGO DELIVERY EFFICIENCY

- AI-driven traffic signals reduce congestion.
- Optimized routes improve delivery schedules & cut costs.

PRIORITIZE EMERGENCY VEHICLES

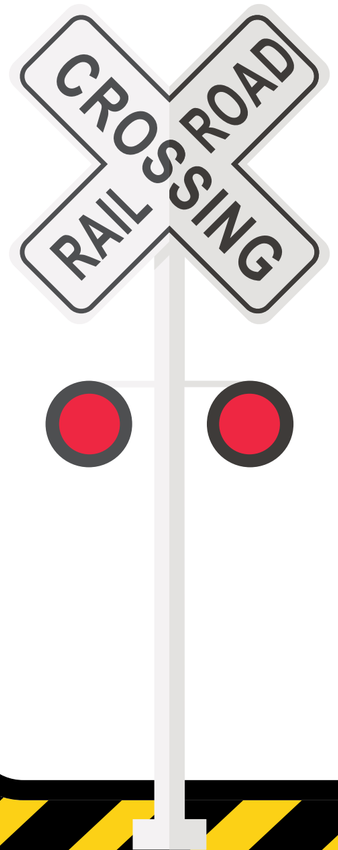
- Smart signals clear intersections for ambulances & fire trucks.
- Faster response times save lives.

AI-POWERED ACCIDENT DETECTION

- Real-time alerts & signal adjustments for quick response.
- Enhances road safety & reduces accident risks.

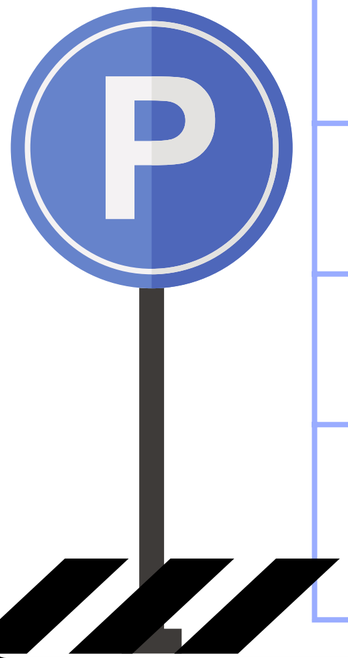
BUDGETS

Item	Quantity	Estimated Per Unit Cost (RM)	Total Cost (RM)
Toy Cars	15 units	5	75
Toy Figures(People)	10 units	3	30
Model Trees	5 units	3	15
Cardboard Sheets	2 sheets	2	4
Artificial grass	3 pieces	5	15



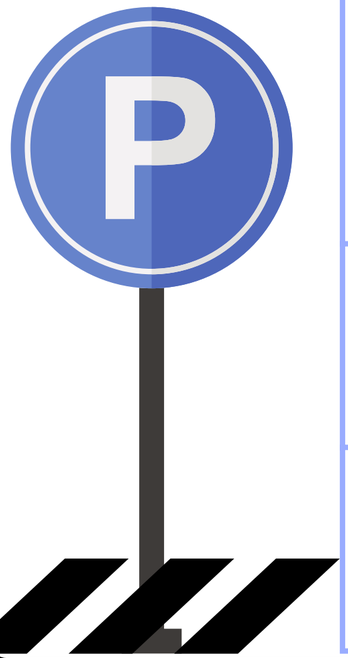
BUDGETS

Items	Quantity	Estimated Per Unit Cost (RM)	Total Cost (RM)
Brreadboard	1 units	3.80	3.80
Toy Traffic Signs	20 units	2	40
Traffic Light Models	4 units	11	44
Hot Glue & Glue Gun	1 set	20	20
Ultrasonic Sensor	1 units	3.20	3.20



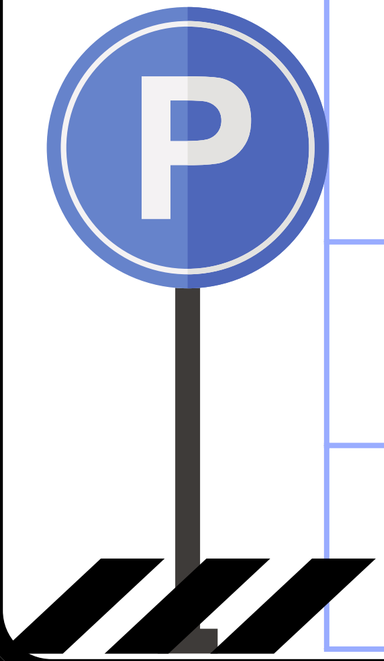
BUDGETS

Items	Quantity	Estimated Per Unit Cost (RM)	Total Cost (RM)
Wires	1 units	7	7
Buildings	9 units	2	18
Camera	1 unit	10	10
Printer Cable	1 unit	4.50	4.50



BUDGETS

Items	Quantity	Estimated Per Unit Cost (RM)	Total Cost (RM)
Mini Ultrathin Speaker 36mm	**1 units**	5	5
Arduino Standard	1 unit	28	28
Marker	1 unit	5	5
TOTAL ESTIMATED BUDGET			**RM327.50**



MATERIAL NEEDED

Toy figure (people)

Toys Car

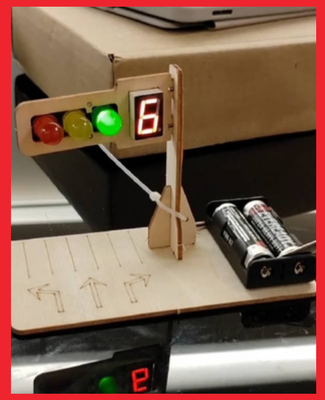
Tree and building

Camera

Toys traffic sign

MATERIAL NEEDED

Cardboard



Traffic lights (red-green light models)

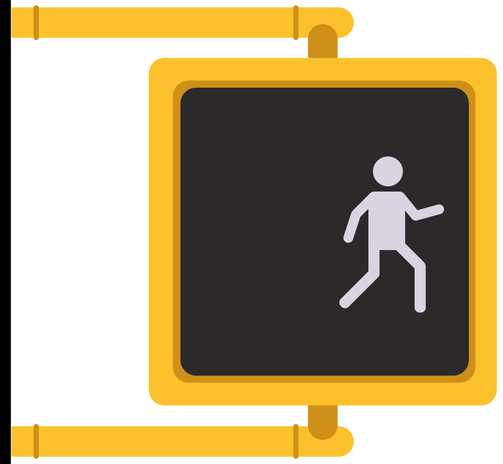
Artificial grass

Sensor

Wiring and HT16k33

CONCLUSION

The Smart Traffic Light System uses AI and IoT to improve road safety, reduce congestion, and enhance emergency response. By dynamically adjusting signals and detecting accidents in real time, it optimizes traffic flow and prioritizes critical vehicles.



THANK YOU