FOUR PILLAR ALERT SYSTEM

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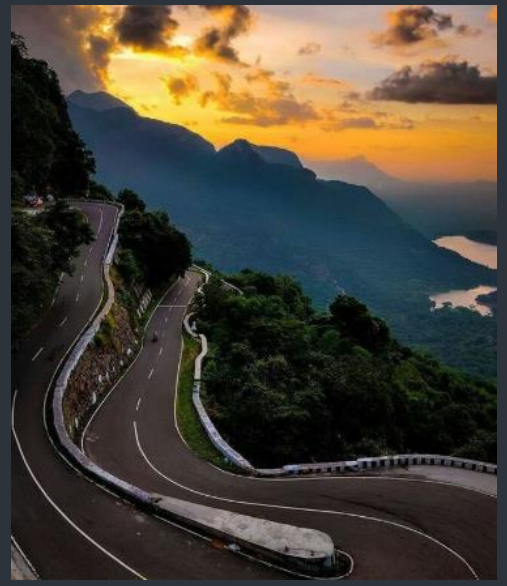
INTRODUCTION

- Blind turns, characterized by limited visibility, pose significant risks to drivers, pedestrians, and cyclists. Accidents at blind turns often occur due to the inability to anticipate oncoming vehicles or pedestrians, leading to collisions and potential fatalities. The Smart Road System seeks to tackle this problem by employing advanced technologies and intelligent infrastructure.



PROBLEM STATEMENT

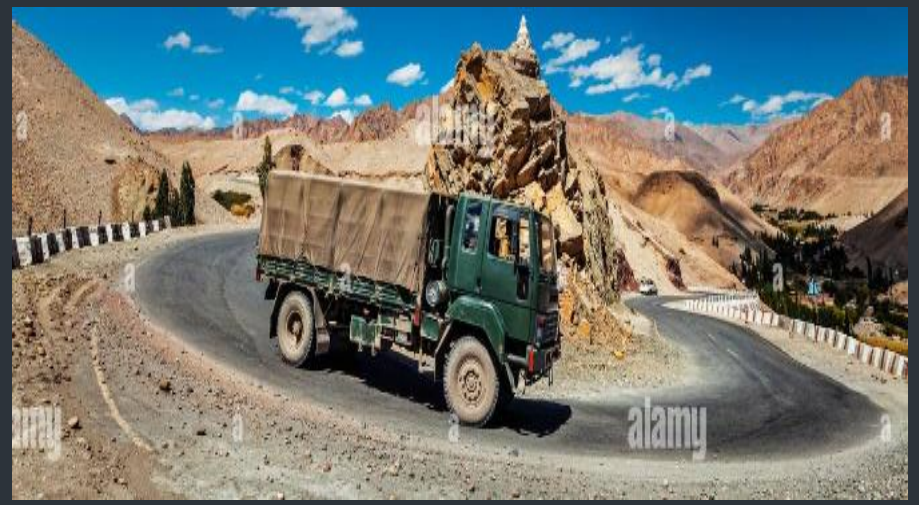
- There are many accidents occurring at sharp turns especially at narrow roads for example at ghat roads or hilly areas, Traffic Police intervention, convex mirrors installation, and other techniques, though helpful in these situations but they are not much efficient in preventing accidents. So, if you see there will be only one convex mirror place at the turning but the disadvantage of this convex mirror is until the vehicle come closer to the mirror they can't see other side. The drivers are not alert of the opposite vehicles. It become difficult to manage vehicles in severe and extreme conditions like rainfall, snow, foggy weather and high number of sharp curves and U-turns.
- Also at hilly areas due to narrow road it will get difficult for two vehicles to pass in opposite directions so even to reduce this problem we need to develop a system that can manage the flow of vehicles smoothly at narrows roads.

EXISTING METHODOLOGY

- ***Vehicle U-turn safety alert system :*** The vehicle U-turn safety alert system is a system for alerting a driver of a vehicle whether it is safe or unsafe to make a U-turn driving maneuver. Visual and audible alerts inform the driver as to whether the U-turn maneuver can be safely accomplished.

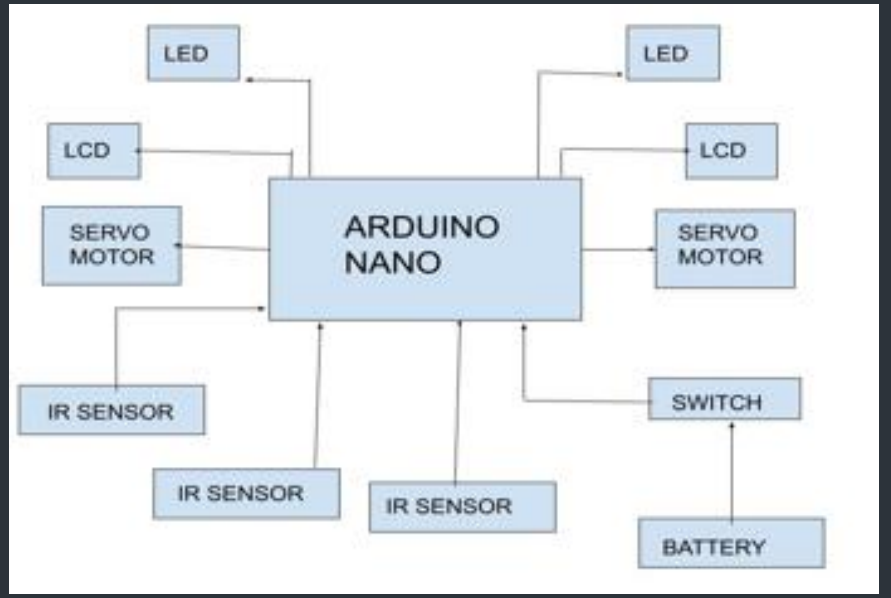
ABSTRACT

- A four pillar vehicle alert system ,this system is helpful to reduce the accidents at Blind curve and hair pin bend roads. When a vehicle is detected at one side of the road Alert signal will be provided and vehicle will be stopped on the other side of the road to prevent an road accidents and traffic congestion at blind curve.

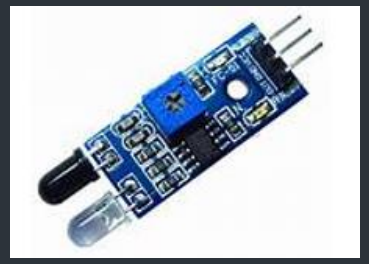


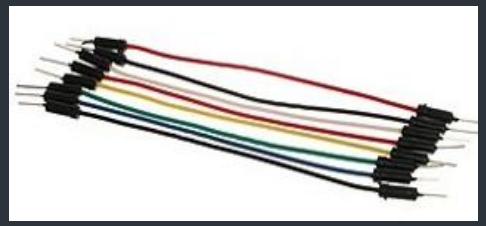
PROPOSED METHODOLOGY

- ***WORKING :*** The working of Four pillar system (Alert system) is simple. When a vehicle is detected using IR sensor either at downhill or uphill, then a alert signal is displayed on other side of the hill and the gate is closed until the vehicle is detected on other side. At the same time a RGB led light will blow as an indication of second alert.

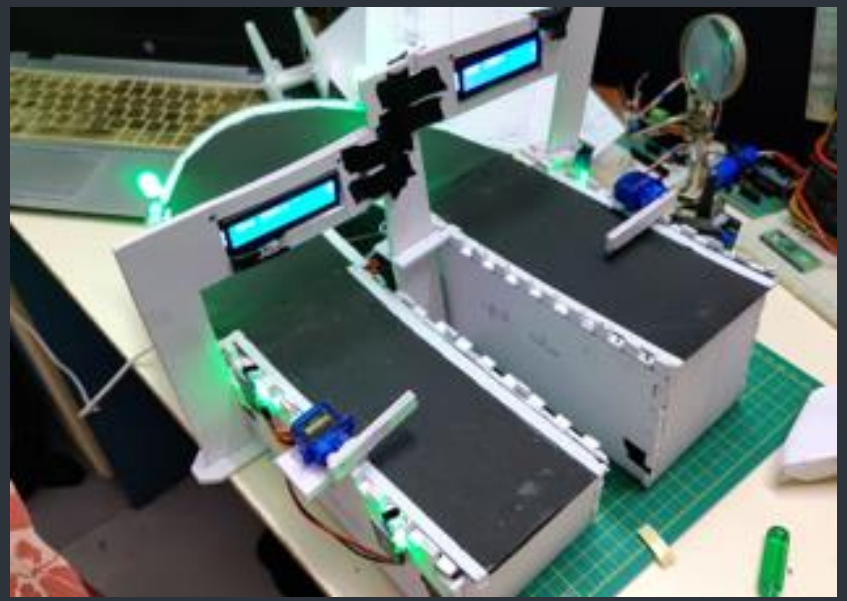


COMPONENTS

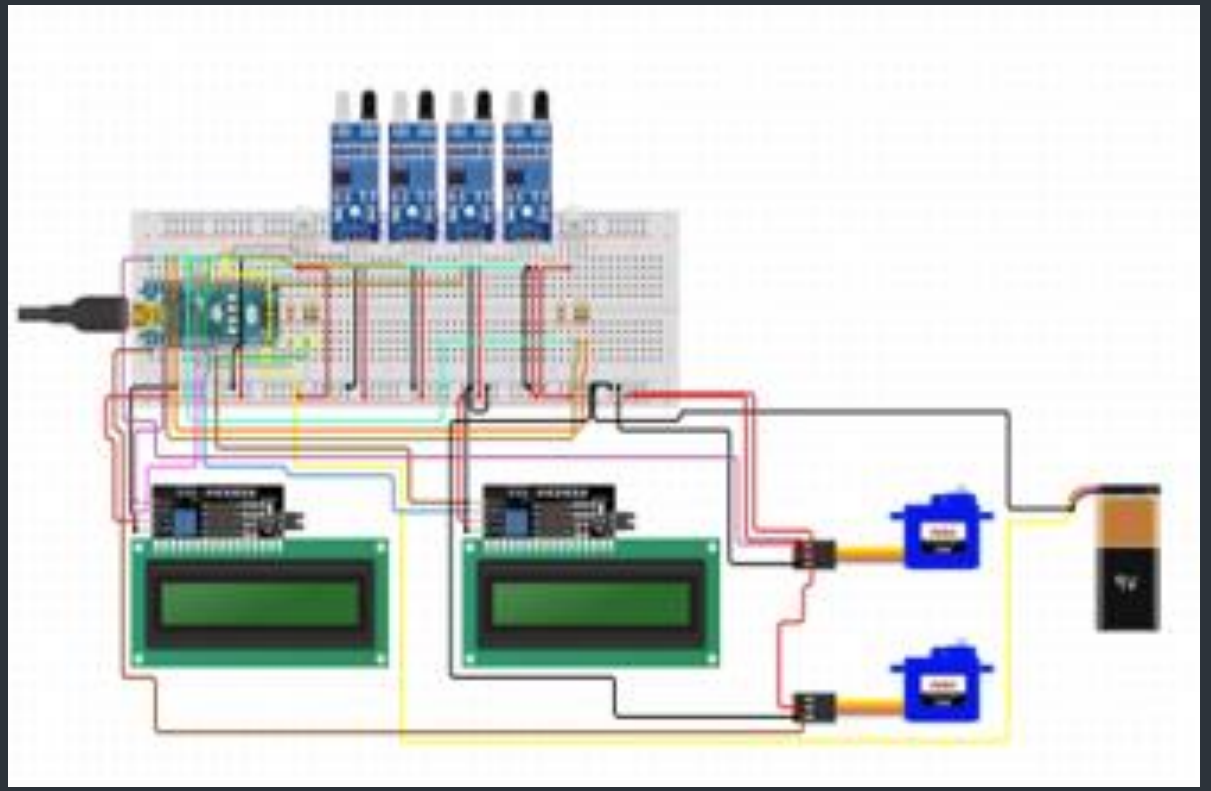




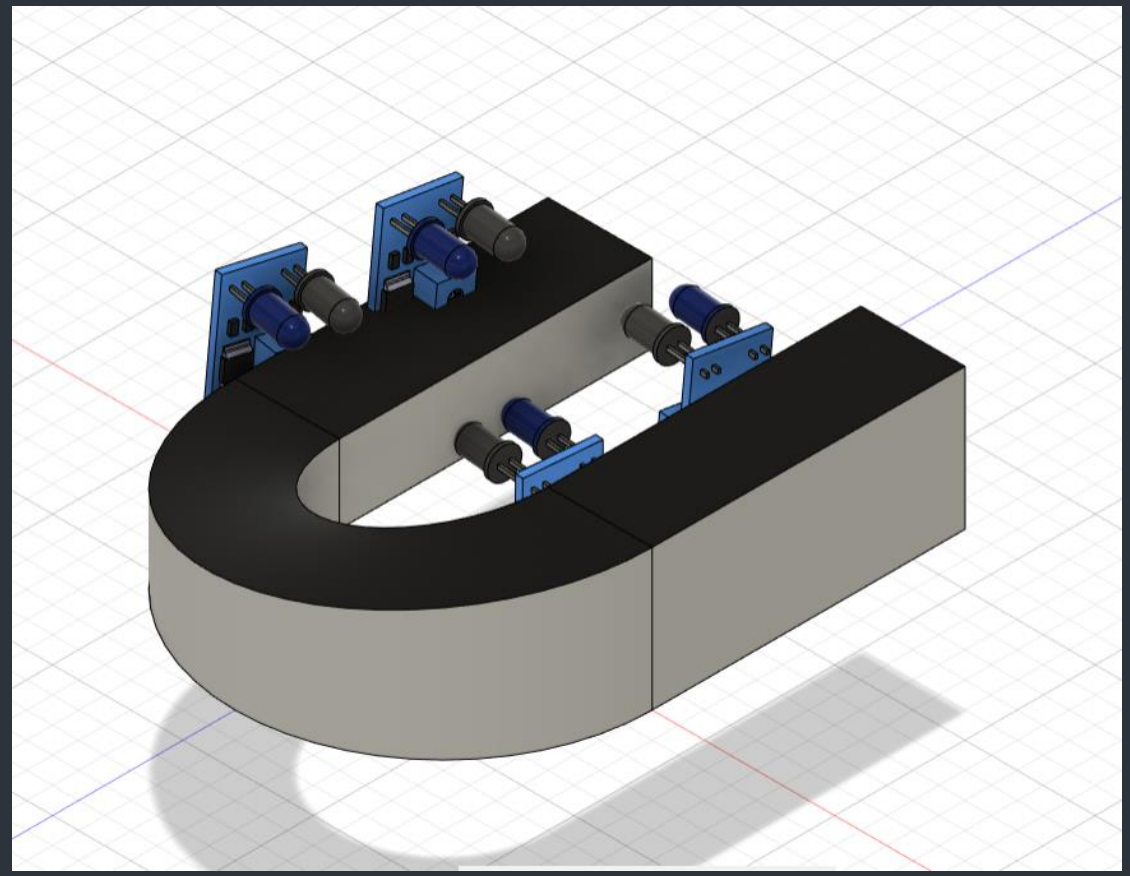
PROTOTYPE



CIRCUIT DIAGRAM



CAD MODEL



ECONOMICS

Cost of the prototype:-Rs.2,000

While implementing it to product level and adding extra features:Rs.2,50,000(approx).

It is helpful for companies like TATA, Hindustan Construction company and many more.

Commercial Application: Malls and parking lots.

Use case: Govt. and private sectors.

CONCLUSION

- ***Conclusion:*** This system will reduce the accident risk in sharp curves. Additionally, It will also help in reducing human intervention on traffic counts, management and helps in decision making.

- ***Future Enhancement:*** This data can be used for enhanced traffic management, road use, traffic flow on single line tunnels and restricted areas by employing Artificial Intelligence and machine learning tools. The prediction on traffic jams, increased flows

THANK YOU