

CARAKSHA

*“Agar karni hai apni suraksha,
Then use Caraksha!”*

*by
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PRODUCT PROPOSAL

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About this Product

Our product aims to provide a safety mechanism that could improve driver safety as well as the safety of the citizens on the road.

We identified three main reasons for car accidents in India-

1. Distracted driving
2. Drunk driving
3. Over speeding

Our product aims to reduce this by adding a device in the car at minimum cost that helps improve road safety.

- This will prevent road accidents due to over speeding, drunk driving, and distracted driving
- People will want their loved ones to be safe and not drink and drive, so they will buy it with their vehicles.
- These will be portable, so they will be able to connect these in their old vehicles.
- In case of accidents time would not be wasted in calling for an ambulance and health record of the person would be available on the screen.
- An external camera is also there to identify obstacles, potholes and quality of the road. This information linked with the GPS can help the government in mapping roads of the country with a better accuracy while saving time and money spent in surveys.

Here's our site- [CaRaksha \(vverma-27.github.io\)](https://github.com/vverma-27/CaRaksha)

Construction Method

The device will be placed in the car in the entertainment console. It has the following features:-

- Connected buzzers with sensors so that a warning can be given to the drivers in case of over speeding.
- If the driver consumes alcohol, there will be beeping sounds in the car and SOS will be sent to the emergency contact.
- If speed of the car is high and the car makes a hard brake, the car behind will automatically stop too (assuming it has the device too.)
- If the driver falls asleep (closes his/ her eyes for more than a few seconds) or takes his/ her eyes off the road for more than a few seconds, then the camera will detect it and the buzzer will start beeping.
- If there will be an accident, the health card (name, blood group, allergies, emergency contact) of the general driver(s) of the car will be displayed on the screen. SOS will be sent to family members and the nearest hospital will be contacted as well.
- A GPS tracker is placed to identify the location of the car and the nearby hospitals.
- There is also an external camera that is programmed with python to identify obstacles, potholes and quality of the road. This information linked with the GPS can help the government in mapping the roads of the country with a better accuracy. This saves time and money for surveys and the real time video processing will help the government save resources and at the same time not compromise the development of our country.

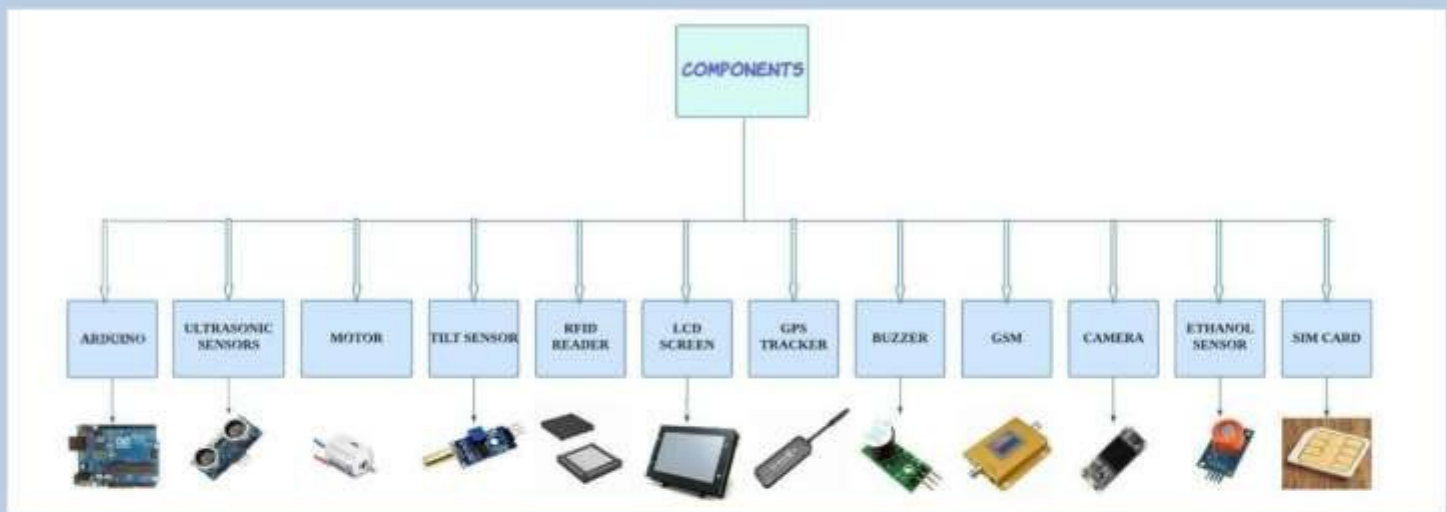
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Components for Manufacturing the Prototype

- **Arduino-** For image processing
- **Ultrasonic Sensors-** To sense nearby cars
- **Motor-** For speed
- **Tilt sensor-** For detecting accidents
- **RFID Reader-** To sense other cars in vicinity
- **Lcd Screen-** To display health card
- **GPS Tracker-** To show nearby hospitals and speed limit of roads
- **Buzzer-** To sound an alarm
- **GSM-** To insert the Sim card
- **Camera-** To see the driver's eyes and facial expression
- **Ethanol Sensor-** To sense if the driver consumes alcohol
- **Sim card-** To send SOS and calls to the emergency contacts saved and the nearest hospital
- **Raspberry pi-** For video processing

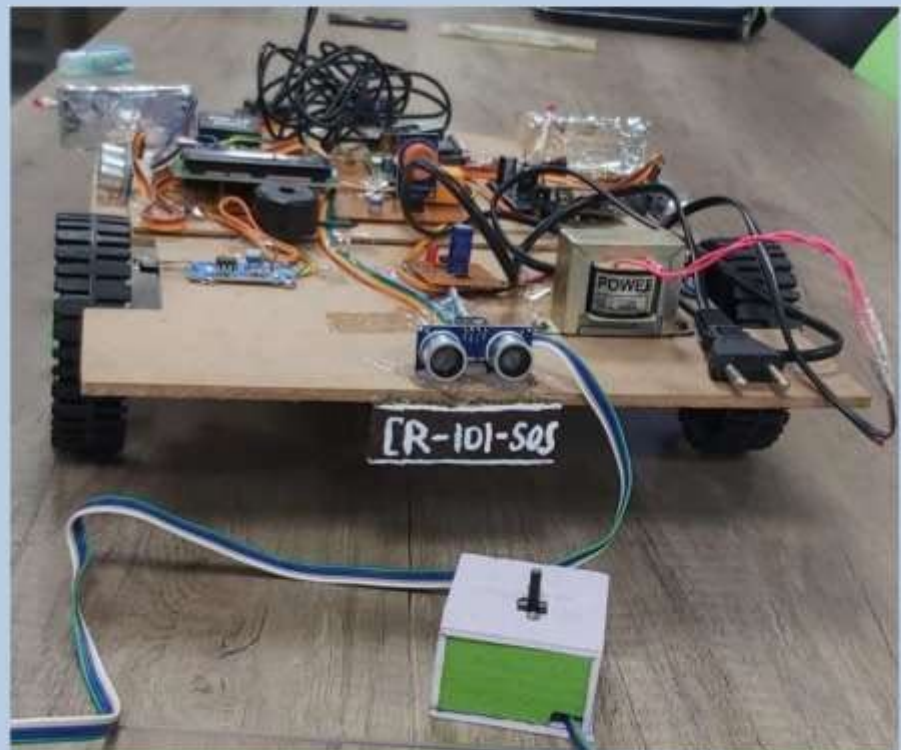
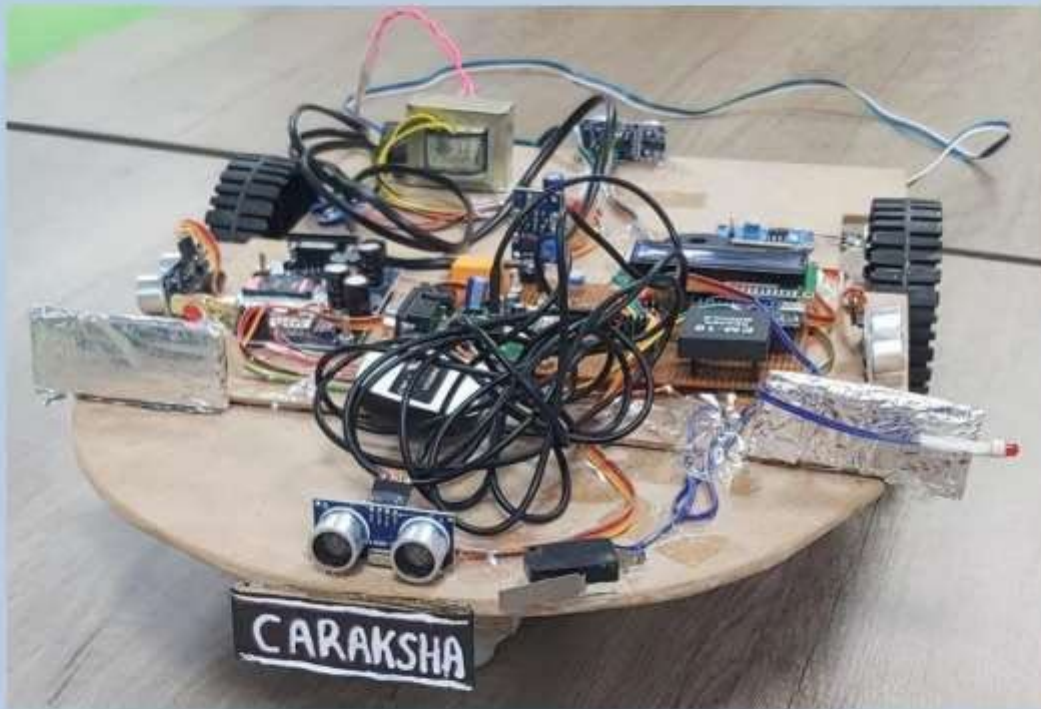


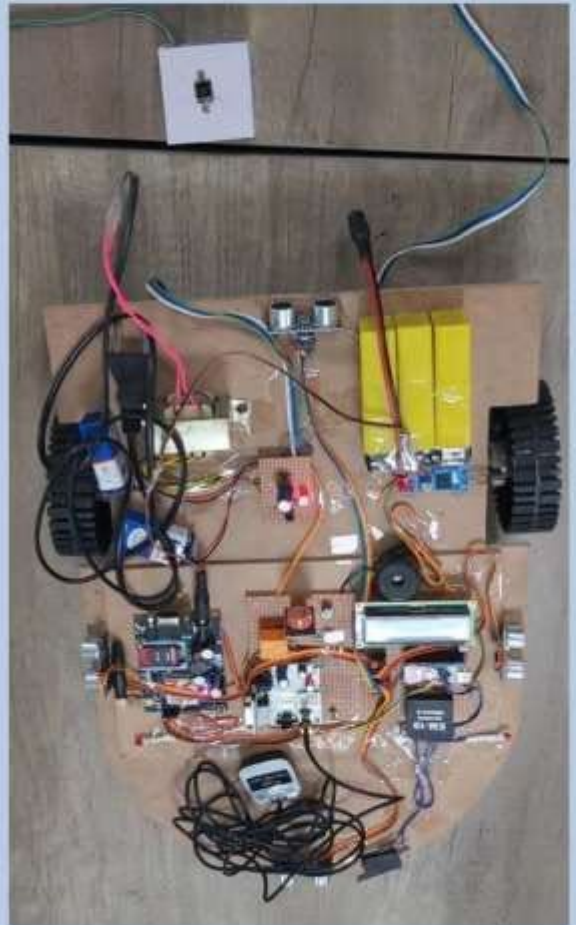
Cost Details of the Product

- **Arduino~ ₹650**
- **Rassberry Pi~ ₹4000**
- **Ultrasonic sensors~ ₹480**
- **Motor~ ₹400**
- **Camera~ ₹400**
- **Ethanol Sensor~ ₹180**
- **LCD Screen~ ₹150**
- **Buzzer~ ₹30**
- **Tilt sensor~ ₹250**
- **RFID Reader~ ₹545**
- **GPS Tracker~ ₹1300**
- **GSM~ ₹1050**
- **PCB~ ₹100**
- **Wheels~ ₹80**
- **Additional costs~ ₹4000**

Cost of the entire product~ ₹14,000 approx. (including manufacturing costs)

Prototype Blueprint







**THANK
YOU!**

