SMART INDIA HACKATHON 2024

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STIMULUS AID

- **Problem Statement ID – SIH1535**
- **Problem Statement Title- STUDENT INNOVATION**
- **Theme- SMART VEHICLE**
- **PS Category- Hardware**
- **Team ID-**
- **Team Name : TEAM HAWK**

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Detailed explanation of the proposed solution

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We the team HAWK is working to create the inbuilt feature on cars in which a sensor would detect a crash and alert the nearby hospitals. The crashes are classified into 3 types –

Type 1

Impact force is Less than 20 G

Type 2

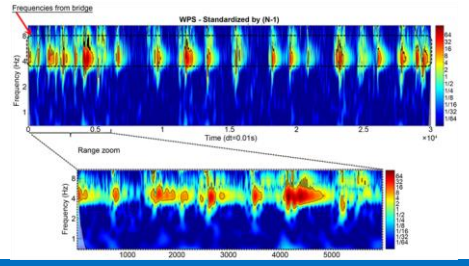
Impact force is 20 to 40 G

Type 3

Impact force is more than 40 G

- ## How it addresses the problem solution

- According to surveys 463 deaths happens per day due to road accidents in India. About 50% of deaths can be averted if victim receive definite medical care within first few hours. For such problems inbuilt features will be good idea to perform.
- Many of the time accident occurs in the places where no public is present to help the victim.



- ## Innovation and uniqueness of the solution

- Direct connection with hospitals
- Cost effective

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TECHNICAL APPROACH

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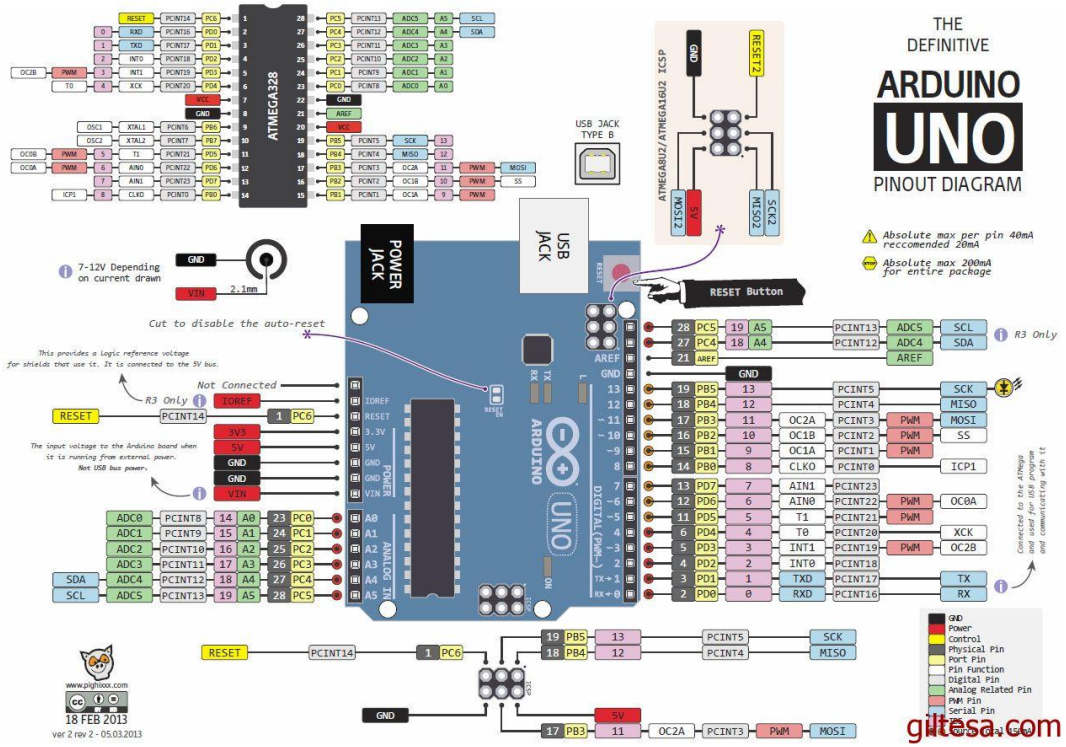
Technologies and components required

- Arduino Uno
- GSM Module (SIM900A)
- GPS Module (SIM28ML)
- Accelerometer (ADXL335)
- 16x2 LCD
- Power Supply
- Connecting Wires
- 10 K-POT
- Breadboard or PCB
- Power supply 12v 1amp



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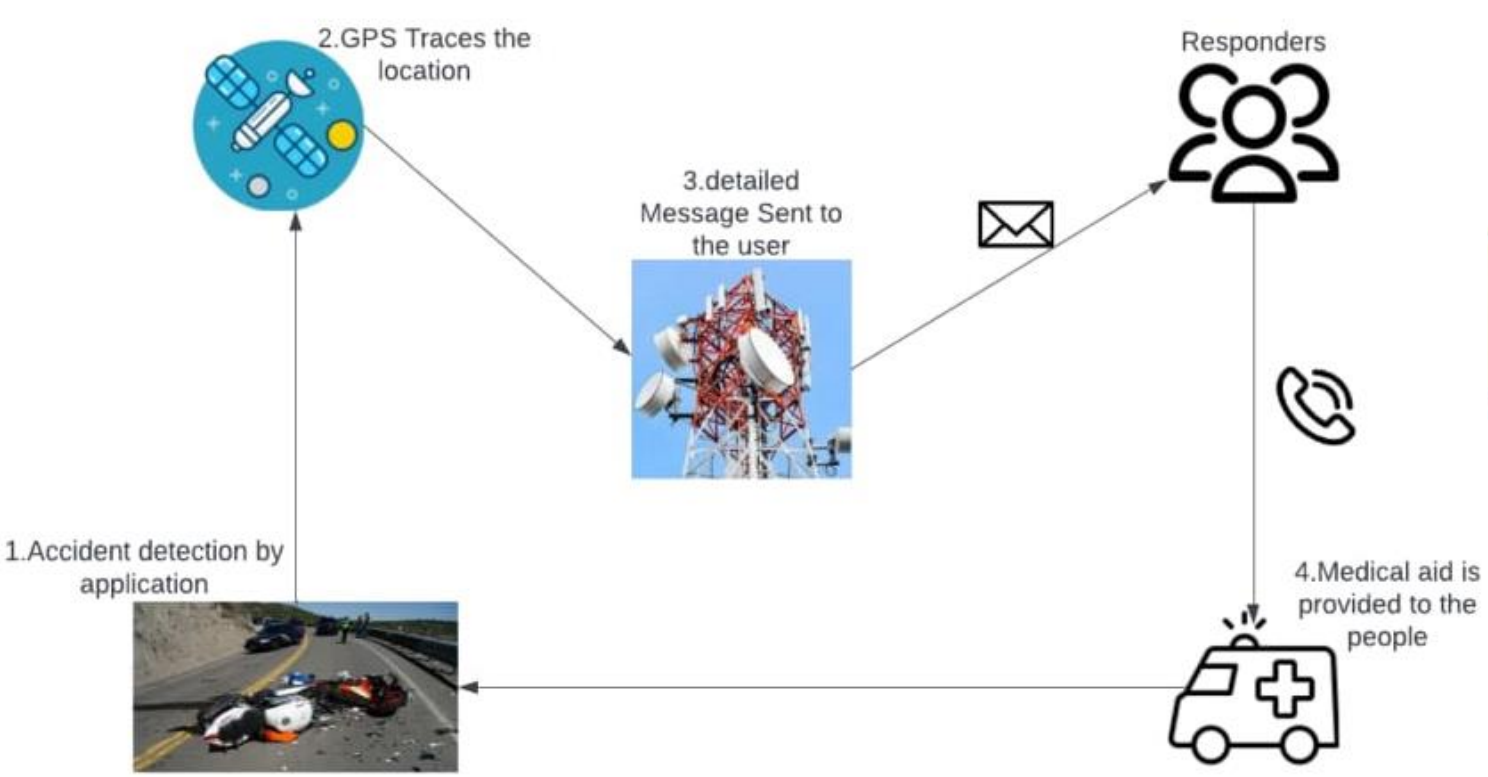
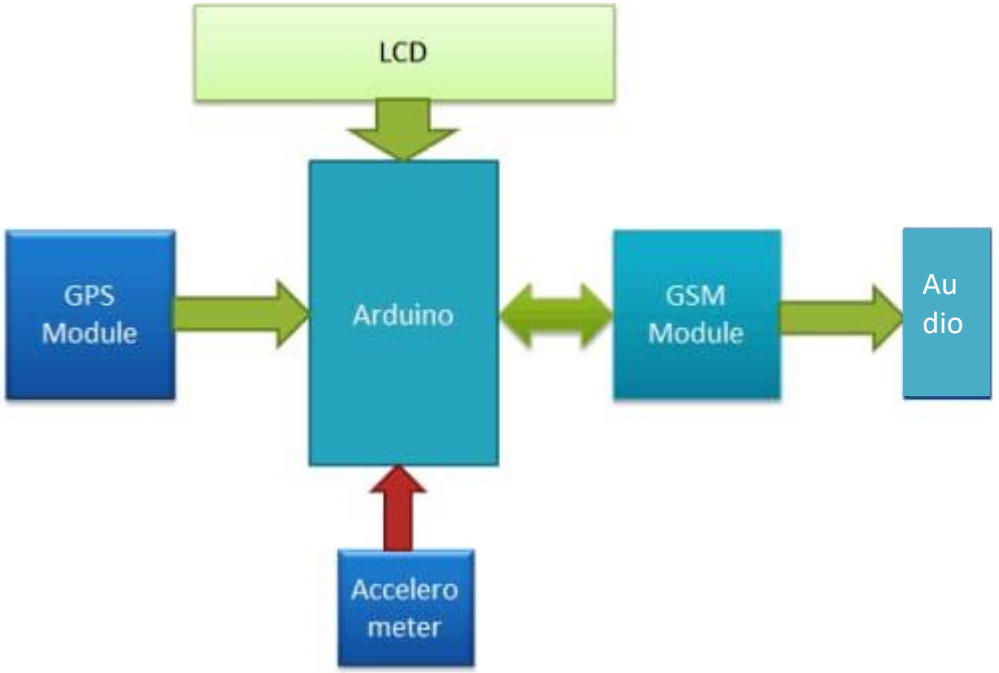
Methodology and process for implementation (Flow Charts/Images/ working prototype)





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FEASIBILITY AND VIABILITY

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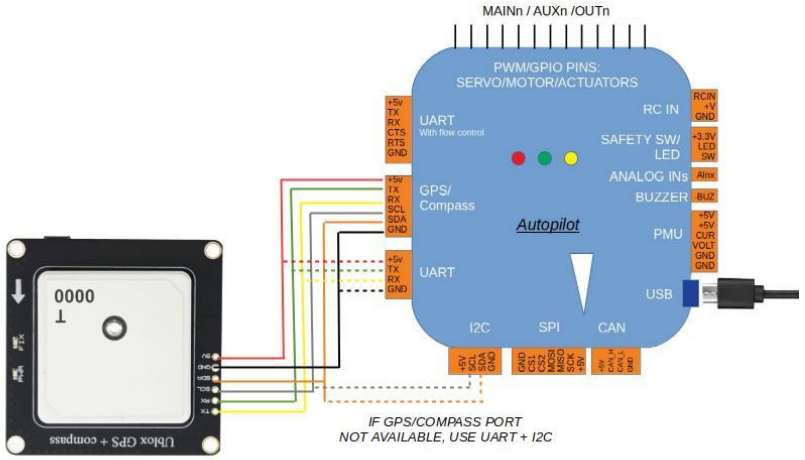

- ## Analysis of the feasibility of the idea

- Creating such a sensor for smart vehicles is feasible with the present available technology like accelerometer, GPS, etc.

- ## Potential challenges and risks

- Making the device sturdy enough to withstand the crash and be functional.
- Keeping the solution cost efficient so that it can be used in every vehicles and tackling the loop holes in its smooth functioning
- Getting connections with the hospitals extended all over India will be a heavy task.
- Non availability of nearby hospitals.

- ## Strategies for overcoming these challenges

- Requesting the government to provide the list of hospitals as well as their contact.

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IMPACT AND BENEFITS

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Potential impact on the target audience

- It Will provide better accessibility to medical care in case of an emergency.
- It would be easier to track the victim for the rescuer.

- **Benefits of the solution (social, economic, environmental, etc.)**

- Death rate due to on road accidents will reduce.
- Will provide assurance to the driver and passengers about their safety

- **Details / Links of the reference and research work**

- https://circuitdigest.com/microcontroller-projects/arduino-based-accident-alert-system-using-gps-gsm-accelerometer

- https://www.cgierbil.gov.in/hospitals-in-india.php