Accident detection system

Team Name: Victims
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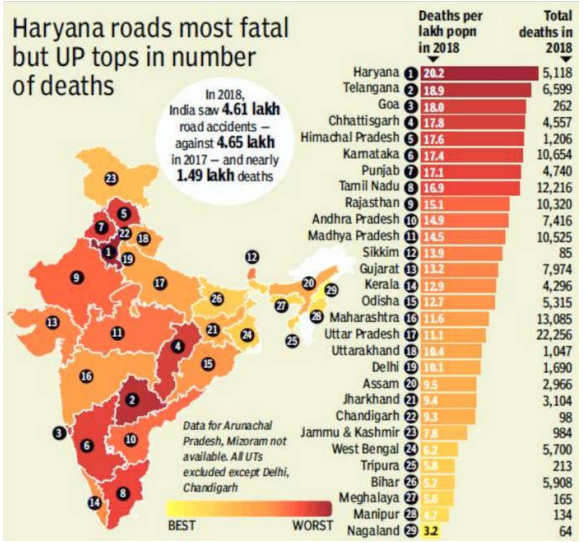
Problem Statement

Traffic collisions in India are a major source of deaths, injuries and property damage every year.

Life of an accident victim can be saved by administering timely medical aid. The 'GOLDEN HOUR', the first hour after the trauma is called the 'golden hour' Instant and proper first aid given to road accident victims during this hour increases the chance of survival manifold and reduce the severity of injuries. Many deaths and impact of injuries can be prevented with First Aid if casualties are treated immediately.

Statistics

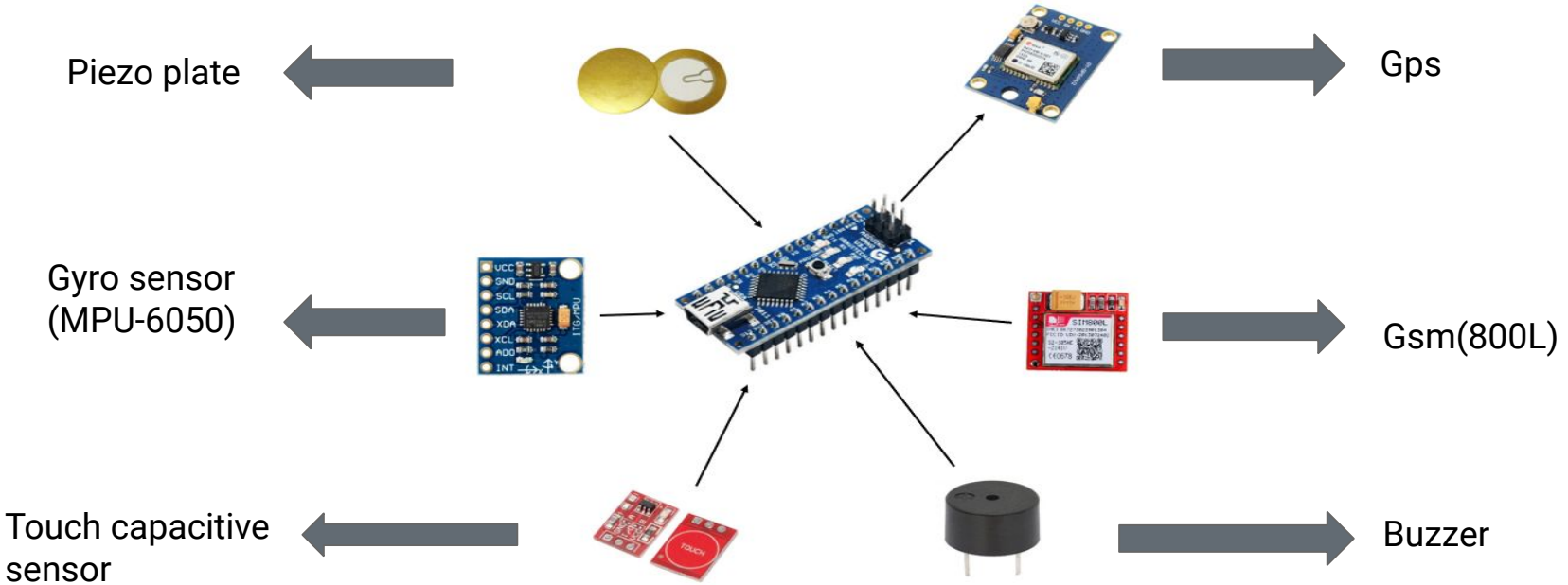
Year	Total Number of Road Accidents (in numbers)	Change	Total Number of Persons Killed (in numbers)	Change	Total Number of Persons Injured (in numbers)	Change
2015	501,423		146,133		500,279	
2016	480,652	-4.14	150,785	3.18	494,624	-1.13
2017	464,910	-3.28	147,913	-1.90	470,975	-4.78
2018	467,044	0.46	151,417	2.37	469,418	-0.33
2019	449,002	-3.86	151,113	-0.20	451,361	-3.85
Total in last five years	**2,363,031**		**747,361**		**2,386,657**	
Average	**472,606**		**149,472**		**477,331**	



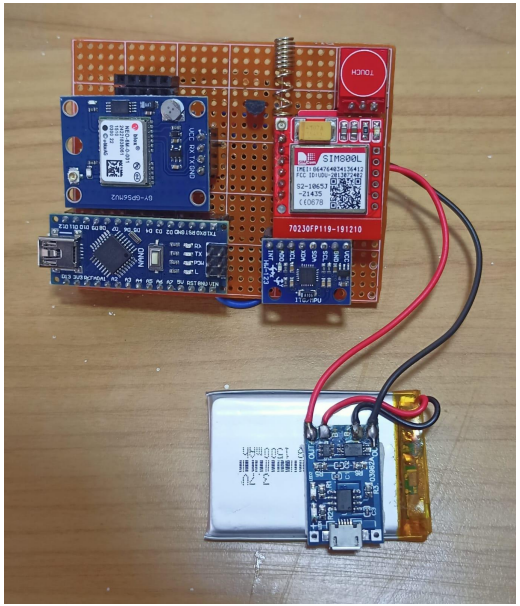
Solution Overview

- A module is integrated in the helmet.
- The module is used to detect the impact by the following cases
- One is the piezoelectric plates which calculates the change in the pressure which ensures that there is some impact.
- Another one is the gyro which senses the angular velocity that gives us the sudden change in the rotation again that ensures that there is some accident.
- If the impact is detected and it is beyond the threshold limit then the GSM will send the required data as a SOS.

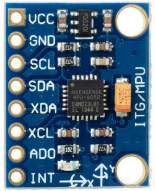
Tech stack


Piezo plate
Gyro sensor
(MPU-6050)
Touch capacitive
sensor
Gps
Gsm(800L)
Buzzer

Design



Working



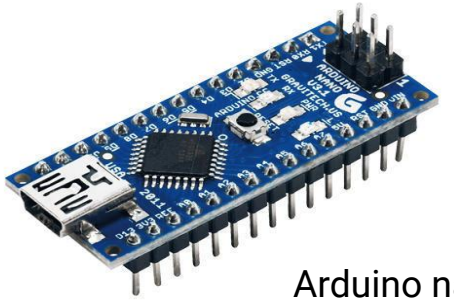
Gyro

Gps

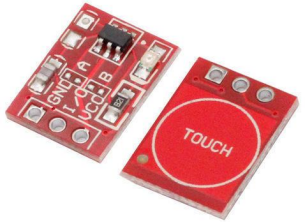
Buzzer

Gsm

Piezo plate



Arduino nano



Capacitive touch

Future enhancement

- The next gen prototype will be completely fabricated inside the helmet.
- Will replace the current microprocessor to lily so that it can be placed enoughly inside the helmet with respect to the space.
- It will be internet enabled to increase our accuracy of detection.
- After tackling with all the problems then we will be going for the smart helmet with more functions.
- And building a software where we can decrease the accidents as much as possible.

	Designing	Implementation	Prototyping & Development
Time	1 - 2 weeks	2 - 6 months	6 months - 1 year
	In this Phase, we design the full model	Here we go into test phase and try out the model to further refine it	In the Phase , we refine the model and go into the reducing the cost

Thank You

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