



inNoverse

POTHOLE DETECTION SYSTEM

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Acknowledgment

The main objective of our project was to design a pothole detection system that would benefit the people of our country in a sustainable and a cost friendly way.

We would like to express our immense gratitude to our course instructor ***Professor Udit Bhatia*** who has been very supportive and has guided us through every step of this journey.

The course has helped us acquire extensive knowledge on various principles of physics and electrical systems and has proved that ideas when put to reality gives one immeasurable satisfaction. Engineering is indeed the poetry of reality.

As a team we would also like to thank our teaching assistant ***Rupantar Choudhary***, who has been very approachable and a pillar of support.

We finally thank our institute for introducing this very exciting and wonderful course. We are now eagerly awaiting the adventurous 4 year journey ahead of us.

WHY POTHOLES ARE A MAJOR PROBLEM?

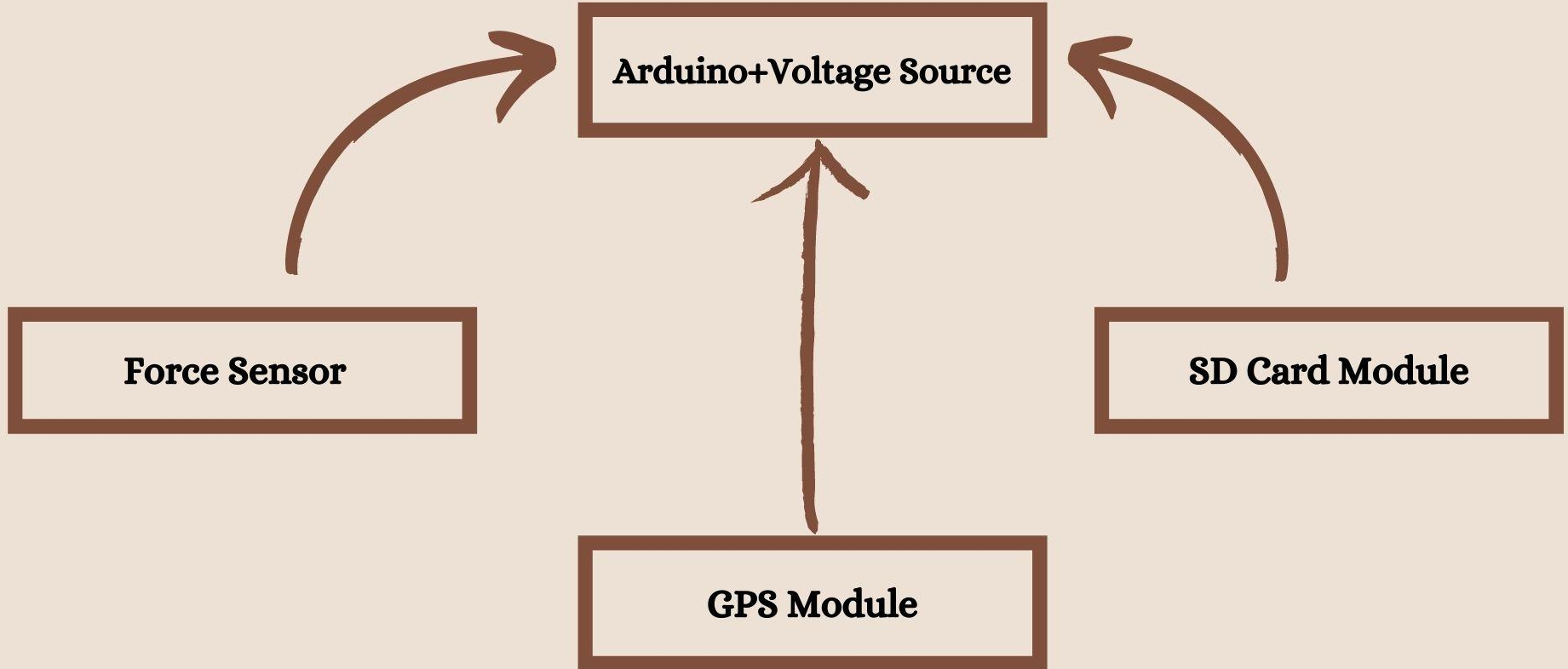
- **Potholes can cause damages that are wide reaching**
- **A pothole can lead to wheel and tire impairment, a loss of directional control and fatal accidents**
- **According to the Ministry of Transport and highways there has been a staggering number 4775 and 3564 deaths in the years 2019 and 2020 respectively because of potholes**

OUR IDEA

- It is based on the concept of Hooke's Law.
 $\{F=Kx\}$
- The suspensions will experience a change in force while going through a pothole.
- This change in force will verify the presence of a pothole.
- The location will be detected and stored for future reference.



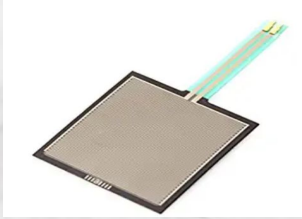
POTHOLE DETECTION SYSTEM



Introducing the Components

FORCE SENSING RESISTORS

FSRs are low cost sensors used to detect physical pressure or weight



GPS MODULE

A satellite based navigation system that provides location and time information



Used to communicate with memory card and

ARDUINO UNO

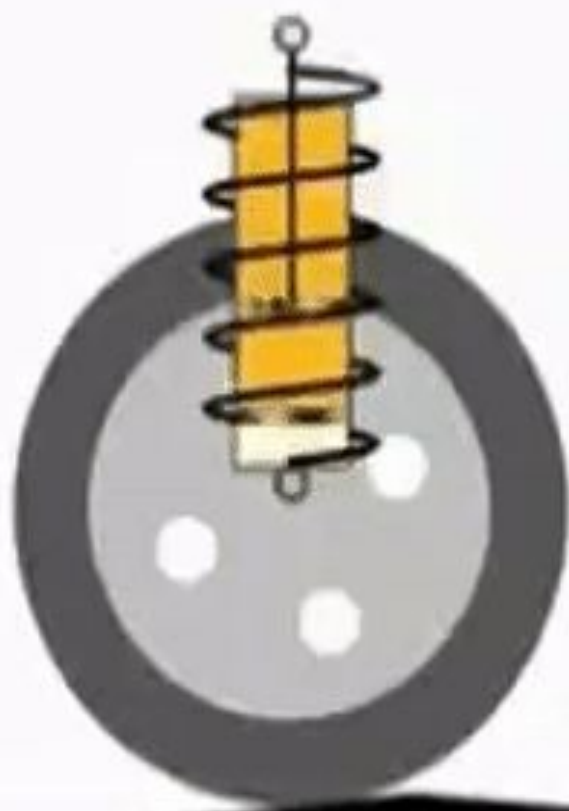


A low cost, easy to use programmable microcontroller board

SD CARD MODULE

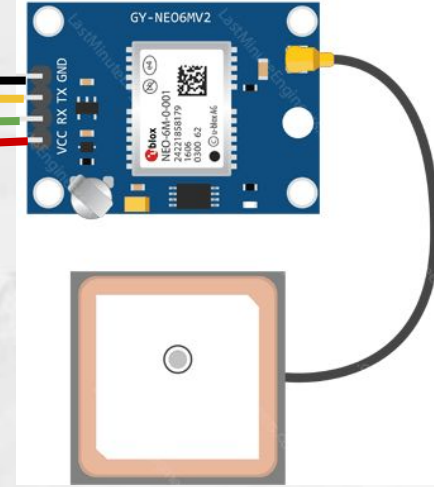
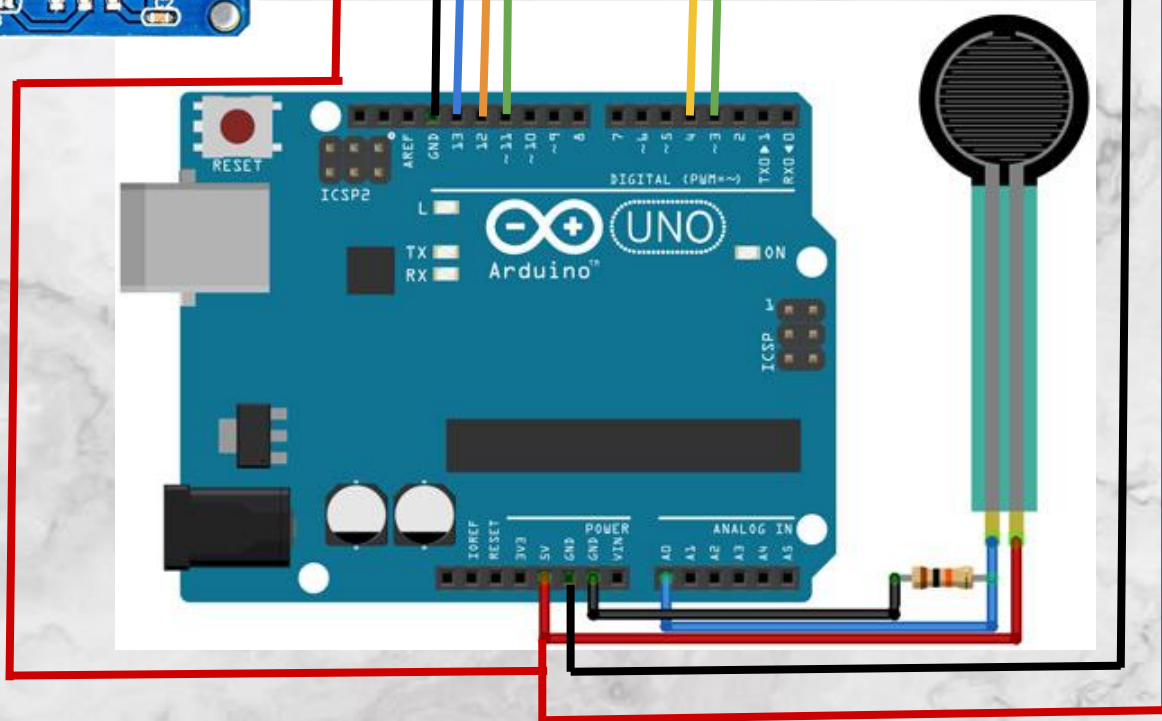
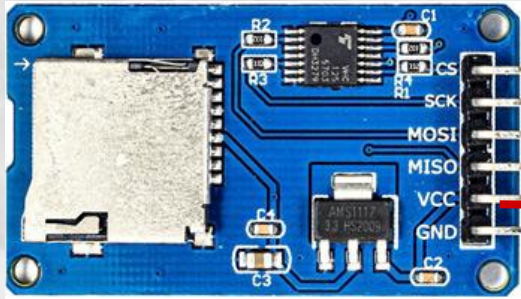


write or read information on them

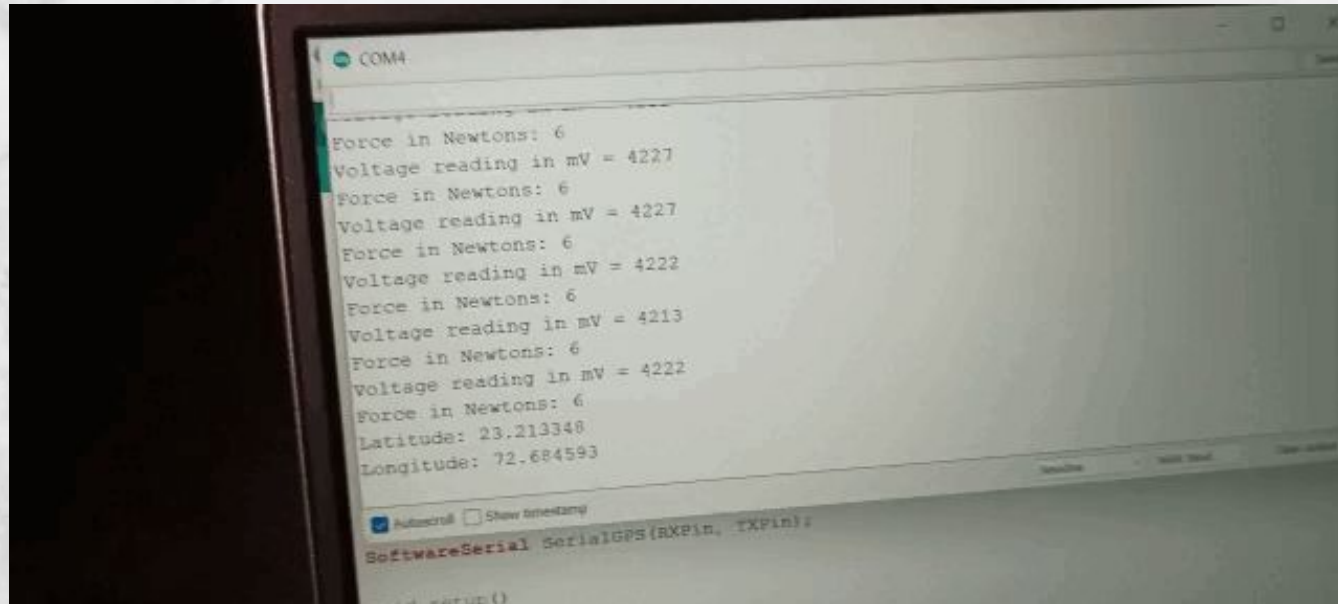


Suspension

CIRCUIT DIAGRAM



Locating the pothole



Our Business Model

WHAT DO WE OFFER TO CUSTOMER?

- Geospatial data (comprising the location of potholes on the regular roads)
- Survey data about the terrain of roads
- Accident-prone areas database

WHO IS OUR TARGET CUSTOMER?

- The common people and we will use google maps to get to them
- Ministry of Road Transport and Highways, Government of India
- Local Municipal Authorities

HOW IS THE VALUE PROPOSITION CREATED?

- Our data would be sold to the mapping firms who would make updations on the regional maps about the same
- Municipal authorities would use our data to find locations to fill the potholes

WHY IS IT PROFITABLE?

- We will provide our data to mapping companies and ,take some royalty from them.
- Our product is cost effective

THANK
YOU

