

ACCIDENT DETECTION SYSTEM (ADS)

First Project Progress Review Presentation

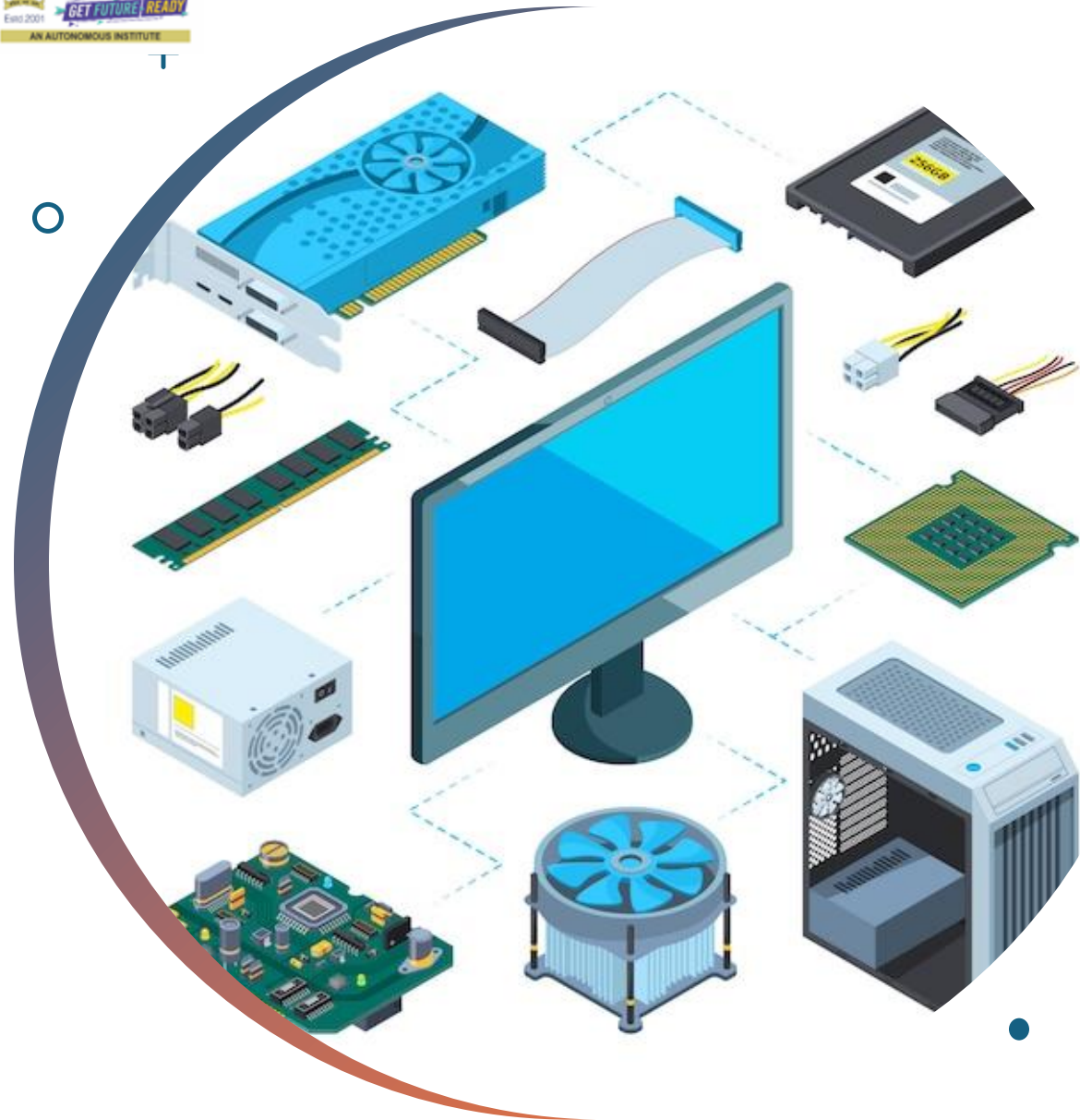
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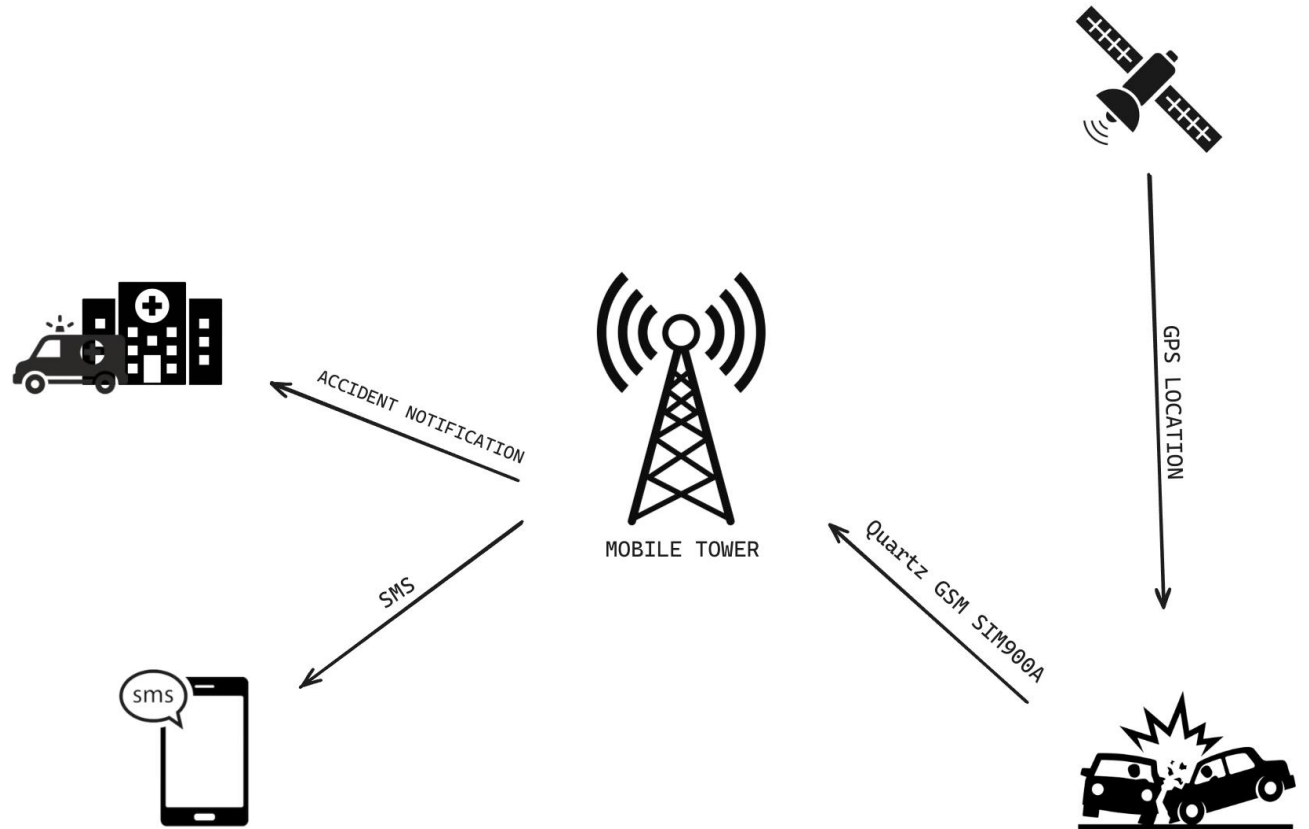
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Problem Statement

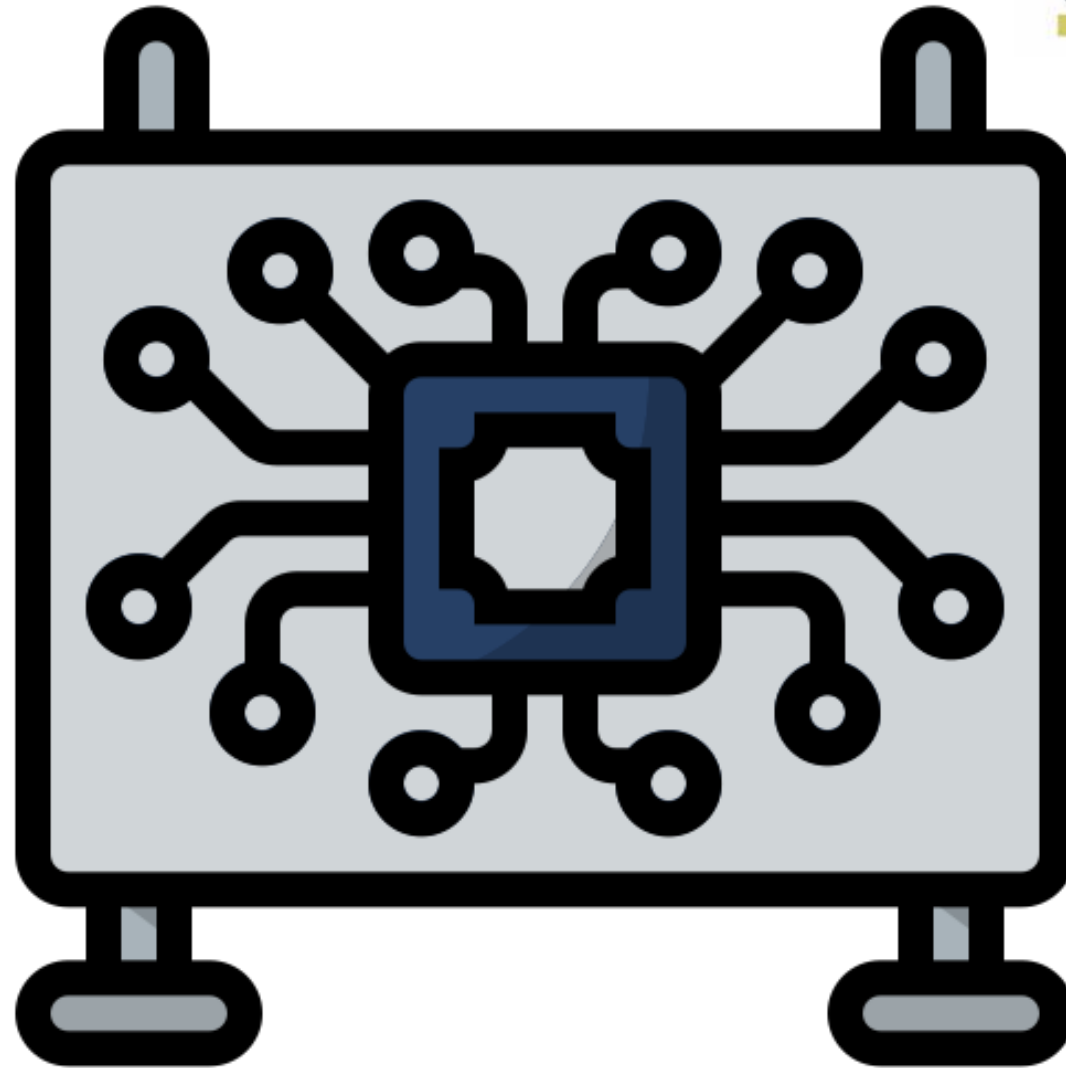
The use of vehicles has increased disproportionately with population, leading to traffic congestion and thus road accidents. The delays in ambulances arriving at the accident site and transporting victims to the hospital can result in **preventable fatalities**. Furthermore, if the authorities are informed about an accident as early as possible, it will reduce the time taken for an investigation to commence.

USECASE DIAGRAM



HARDWARE REQUIREMENTS

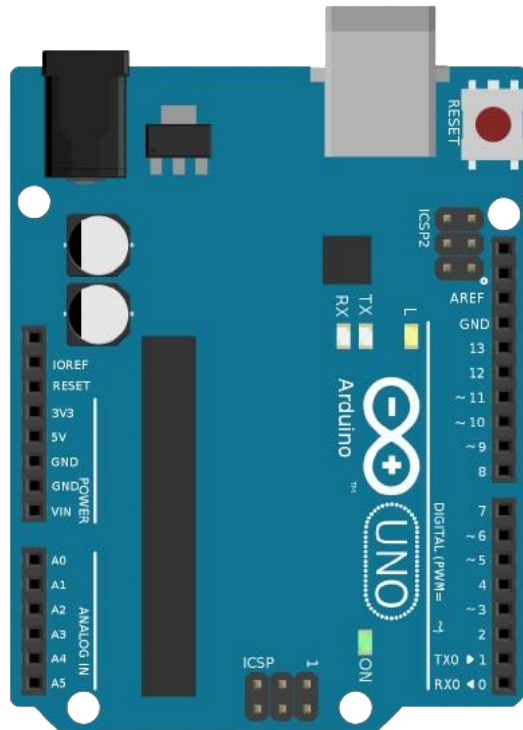
- Arduino Uno
- Quartz Gsm Sim900a
- MPU-6050 -
Accelerometer and Gyro
- Neo-6m Gps Module
- Breadboard
- Father/Mother Wires



ARDUINO UNO

BASIC INFO ABOUT UNO

- Arduino Uno is a microcontroller board based on an ATmega328P microprocessor
- It has 14 digital input/output pins, 6 analogue input pins, 16 MHz clock speed, 1024 bytes of RAM, 2KB SRAM, 32KB FLASH and 1KB EEPROM



PURPOSE OF UNO

- Acts as the brain of the system
- Responsible for managing all the components
- Provides an IDE (Integrated Development Environment)

QUARTZ SIM900A GSM MODULE

BASIC INFO ABOUT SIM900A

- The GSM-900 GSM/GPRS module is a readily available GSM/GPRS module, which can provide the network connectivity to your project. It can do all the work your mobile phone would do like making a call, receive a call, send a message, connect to the internet using GPRS.
- **SIM900A GSM Module** is a dual-band GSM/GPRS engine that works on frequencies EGSM 900MHz and DCS 1800MHz

PURPOSE OF SIM900A

- Connection to external world
- immediate and automatic notification
- Send alerts to any nearby hospitals and designated contacts



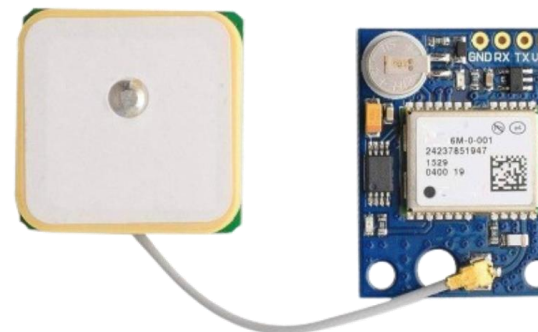
NEO 6M-GPS

BASIC INFO ABOUT NEO 6M-GPS

- It can track up to 22 satellites over 50 channels and achieve the industry's highest level of tracking sensitivity i.e. -161 dB, while consuming only 45 mA current.
- Unlike other GPS modules, it can perform 5 location updates in a second with 2.5m horizontal position accuracy.

PURPOSE OF NEO 6M-GPS

- Accurately pinpointing the accident location
- Improved coordination and resource allocation
- Accident documentation and investigation



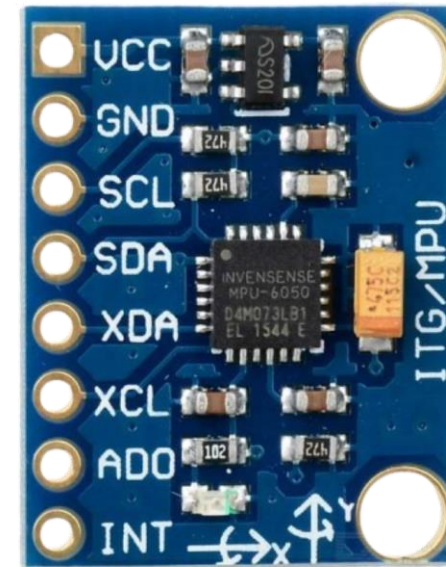
MPU-6050 - Accelerometer and Gyro

BASIC INFO ABOUT MPU-6050

- The MPU-6050 is a microelectromechanical system (MEMS) device that integrates a 3-axis accelerometer and a 3-axis gyroscope onto a single die
- The MPU-6050 can be used to track the motion of an object in three dimensions

PURPOSE OF MPU-6050

- Detecting Sudden Impacts



LIVE PROJECT PROGRESS

Till now we could only acquire 2 of the 4 given hardware components which are :

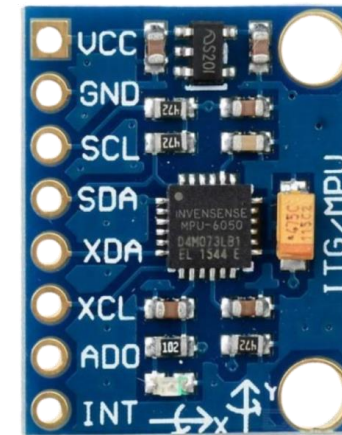
- Arduino Uno
- NEO 6M-GPS

LIVE PROJECT PROGRESS

Components Remaining:



SIM 900A GSM



MPU 6050

Conclusion and Future Action Plan

- Inclusion of Module Libraries
- Further Research
- Aiming to build the first prototype by the next 3 weeks

Feedback from the Panel

Thank You