- **PROJECT THEME:**
  "SAFETURE"-Translucent & Trackable Smart Container and safe Transportation.

- **TEAM MEMBERS:**

  1.Pooja Mane. (poojamane0101@gmail.com)
  2.Swati kasar. (swatikasar17@gmail.com)
  3.Neha mahajan. (nehamahajan2060@gmail.com)
  4.Azim Pathan

- **INSTITUTE NAME:**Walchand College of Engineering,Sangli..

- **ABSTRACT:**

  Amalgamation of Blockchain and IOT is the emerging technology in today's world. Procurement happens in each and every aspect of an organization from business to IT needs and everything needed in corporation is tied to the supplier and there will be a long list of suppliers in no time.

  This project focuses on safety, security and opacity of pharmaceuticals supply with the help of **Blockchain** and **IOT**(Internet Of Things) by using **Cloud** as a platform for easy storage,retrieval and analysis of data received from the sensors. In prolongation with this idea,our application also emphasizes on Accident Detection of the vehicle carrying the goods and also alert the supplier regarding the mishap as well as send notification to the nearby hospitals ,and additionally would let the manufacturer and hospitals know about the current location where the catastrophe has occurred so that they could take appropriate action.

- **PROJECT DESCRIPTION:**

  "**SAFETURE**" will be a pioneer in developing an automated system that keeps the track of various products and articles present in the container (vehicle to carry the products) with a **standard communication system** and also make the journey of the container sophisticated by detecting accident.

  Once the container departs from manufacturer's location it stops periodically from one warehouse to another.In case of **pharmaceuticals supply chain logistics**, the

medications need to stay within certain temperature range. Our application would **monitor**,**verify** and **steward** medications from source to destination by collecting and analyzing the data read from sensors.

Major Functionalities :

The three main modules of our system are :

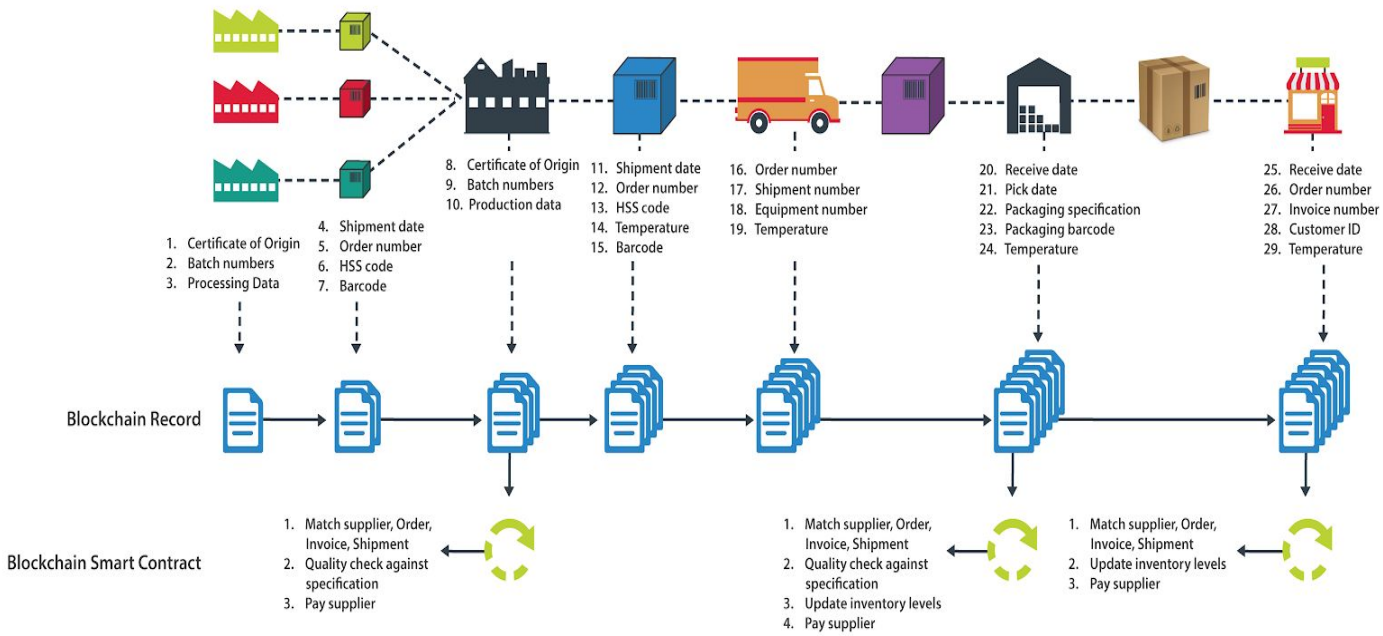
- **Blockchain in Chain Logistics :**
  Keeping blockchain as the heart of our application,we can achieve,
  1. **Traceability** : By **keeping track** of all the processes and checkpoints which would help the manufacturer or shipper to identify the trouble spots and Take remedies to automatically ON/OFF the air conditioner based on fluctuations of temperature around the threshold value which would be collected with the help of DHT11 sensor situated inside the container.
  2. **Transparency** **:** By **reducing fraud** for pharmaceuticals where blockchain's immutability provides basis for traceability of drugs from manufacturer to consumer,identifying where the Supply chain breaks down.

  In addition to cutting losses,there is potential to improve consumer safety and prevent some of the estimated **1 million deaths annually** from counterfeit medicines.

- **Accident Detection :**
  Continuing with above idea,the proposed system would also encapsulate **Smart accident detection** for container. This can be done with the help of window glass vibration sensor,break sensor etc.In case of accident,system will notify nearby hospitals to save life of driver.Also alert the drug manufacturer about the accident in order to take immediate actions.

- **MAJOR FUNCTIONALITIES:**
  - Efficient transportation of pharmaceuticals from manufacturer to market.
  - In between the path,if any defect found by sensors,the product is not send further and manufacturer is notified about that damage.
  - Detect and notify the nearby hospitals and manufacturers about accident of container.

- **OVERALL STRUCTURE:**



- **USE CASE DIAGRAM:**

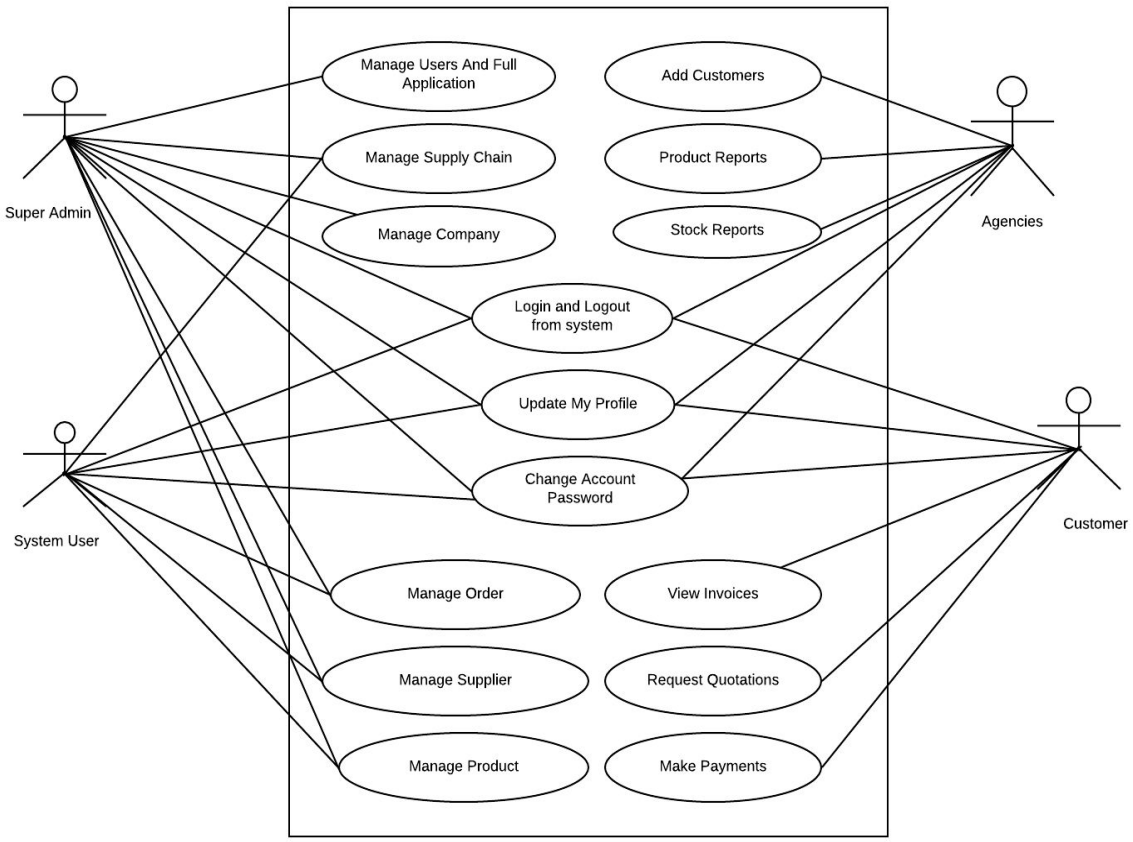


Fig 1: Supply Chain Management

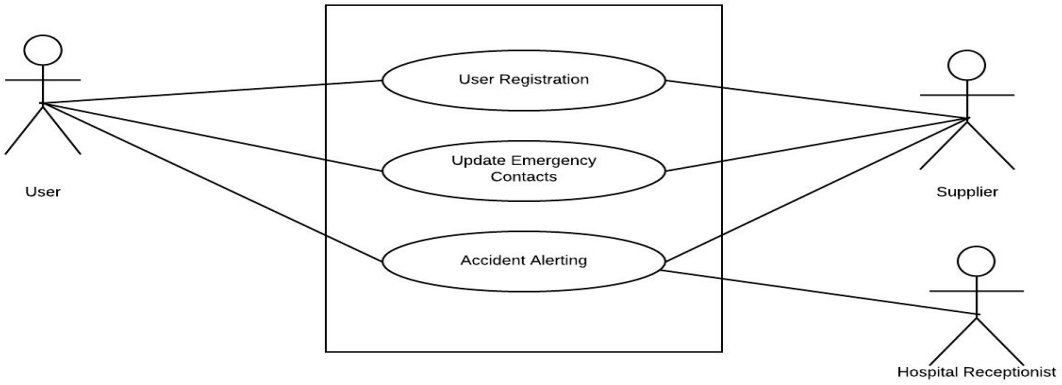
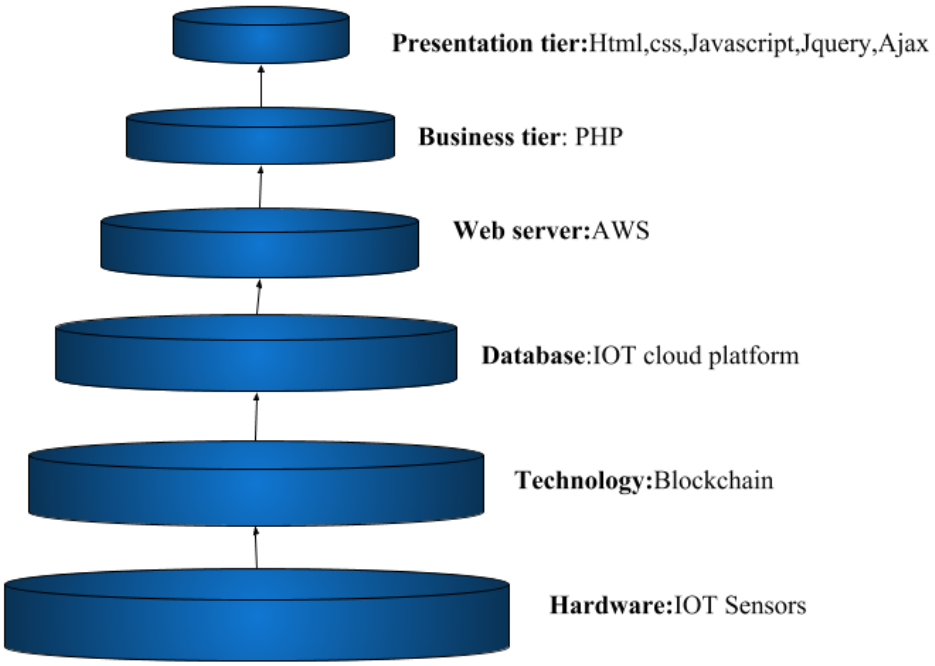


Fig 2:Smart Accident Detection

- **TECHNOLOGY STACK:**



SNAPSHOTS:

1.

2.

3.

4.

5.

6.

7. 8.

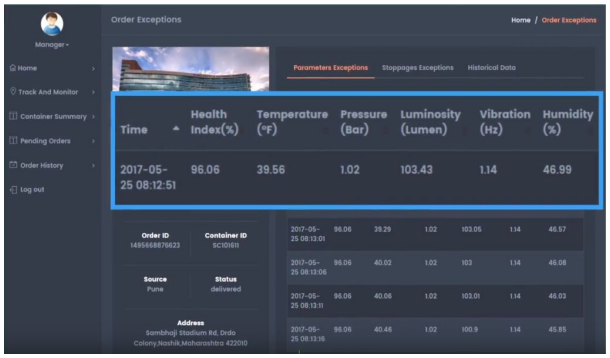


Fig. Flow of supply chain

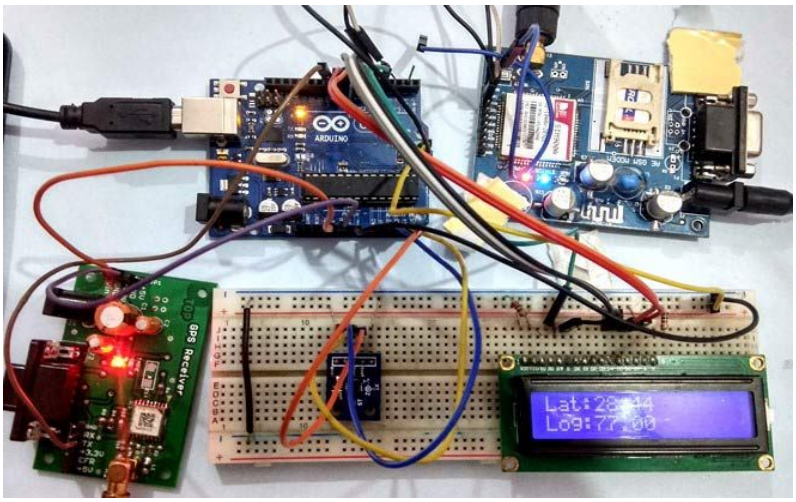


Fig. Accident accident detection hardware setup