

## Assignment No-2

Qn. Decide the problem which will be solved and write a detail story about why the problem happens:-

Problem:

The accidents happen in huge amount in worldwide through the driving.

Why the problem happens?

- The accidents happen due to combination of factors, including human error, environmental condition and also by the mechanical failures. For example,

Human error can occur by the individual or due to the alcohol and drugs. It also happens due to poor road or workplace condition. Mechanical failures can also happen due to sudden occurrences like animals crossing the road, unexpected obstacles.

Why you decided the problem?

- We decided this problem because when the accident happens the person is not able to go to the hospital immediately. His/Her life may go in danger and people do not help the person, instead they click the photos/videos unnecessarily, then the humanity comes in front.

How your thoughts to solve the identified problem?

- When addressing the problem of accidents, it's crucial to consider both preventative and responsive measures.

### A) Preventive Measures :

- 1) Improve safety standards
- 2) Technology integration

### B) Responsive Measures:

- 1) Emergency Response Plan
- 2) Accident investigation
- 3) Support System

## Solution on the problem :

Due to human errors like alcoholics / alcoholic driver we can detect it through the software technology. It involves a combination of sensors, data analysis. There are some solutions through we can detect the person.

### (A) Breathalyzer Integration :

The drivers must blow into the breathalyzer and if alcohol is detected above the legal limit, the vehicle will not start up. Modern system can transmit data to a monitor app or central database for real-time tracking.

### (B) In car cameras & AI :

The camera's equipped with AI algorithms can monitor the driver's behaviour and detect the signs of impairment.

## ② Steering wheels sensors:

Sensors embedded in the steering wheel can measure the drivers sweat for alcohol content. If alcohol is detected then the system can alert the drivers and prevent the vehicle from operating.

### • The best solution with Justification:

The best solution to solve problem is - Automatic accident detection and notification through the software, vehicle to everything (v2x) communication.

In the event of an accident, v2x-equipped vehicles can automatically get alert emergency services with precise location data and details about the severity of the incident and it also help to reach the accident site and hospitals faster.

### • Justification about solution:

The ultimate result is reduced response times, improved patient outcomes and a more efficient emergency medical system.

- The Prototype Model:

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- Accident occurs - The alert is automatically generated, including GPS coordinates and severity.

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- Emergency Notification • The system receives the alert and dispatches an ambulance.

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- Traffic Management • Traffic lights on the ambulances route are synchronized to turn green ensuring minimal stops.

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- Ambulance En Route • Nearby vehicles are notified to clear the path.

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- Hospital preparedness • Medical staff prepare the necessary equipment and personal to receive the patient immediately.