AUTOMATED TRAFFIC CONTROL SYSTEM USING ULTRASONIC SENSOR

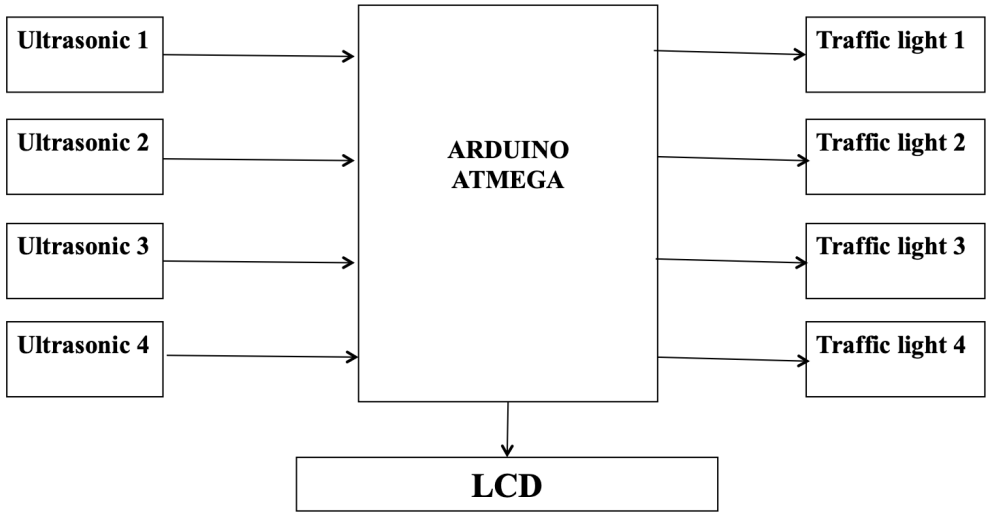
Existing Problems: -

- Timer controlled traffic signal lights mostly do today's traffic control.
- This system is designed in way to operate in regular intervals of time.
- Irrespective of the density of the traffic the Traffic signal has a default time interval in between the transition of signal lights.
- The traffic in today's world is not regular with respect to time. The traffic density in each junction differs time-to-time even in the same day.
- When this traffic density is too high a traffic control official is needed to control the system manually.
- Manual control of traffic leads to: -

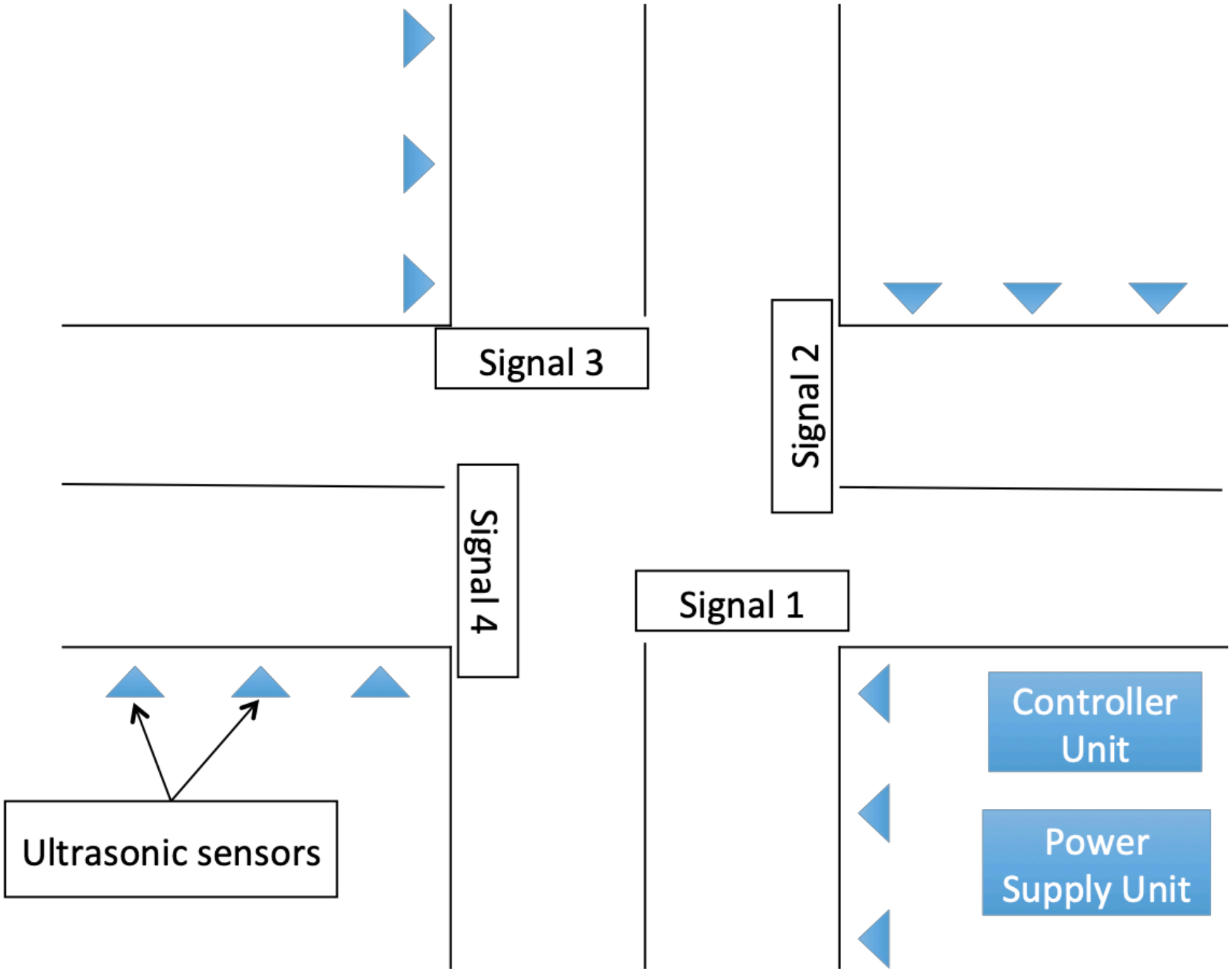
- **Frequent accidents**
  Road transport system is dotted with frequent accidents. According to an estimate, there are larger numbers of deaths due to road accidents. So it is not safer mode of transport.
- **Higher wait time**
  In a traffic junction with high-density traffic the default time delay in the transition between the traffic lights are not suitable for quick commutation. This leads in higher wait time of vehicles.
- **Less fuel efficiency**
  Due to high wait time of vehicles in the junctions, the vehicles consume high fuel. With the abundance of fuel in the society, the consumers face this problem with cost expenditure.

Proposed system: -

- To solve this problem faced by the people, an advanced traffic management system is proposed, implemented using ultrasonic sensors.
- These sensors are placed on the side of the lane and are divided into three phases of monitoring.
- Depending on the density of the particular phase, the time interval between the transitions of lights is altered.
- Arduino Atmega 2560 controls this process.



- The ultrasonic sensors sense the traffic by collecting the transmited ultrasonic wave which gets reflected from the the vehicle.
- This time is measure to calculate the distance of the vehicle to the sensor.
- According the distance and the delay in the which sensor in sensing the same value for a certain time which means that there is traffic present.
- There are three sensors in each road which indicate the traffic density level. When each sensor detects the traffic, it indicates the respective traffic level.


Signal 3
Signal 2
Signal 4
Signal 1
Ultrasonic sensors
Controller Unit
Power Supply Unit