Driver Drowsiness Detection/ Alarm System

Introduction

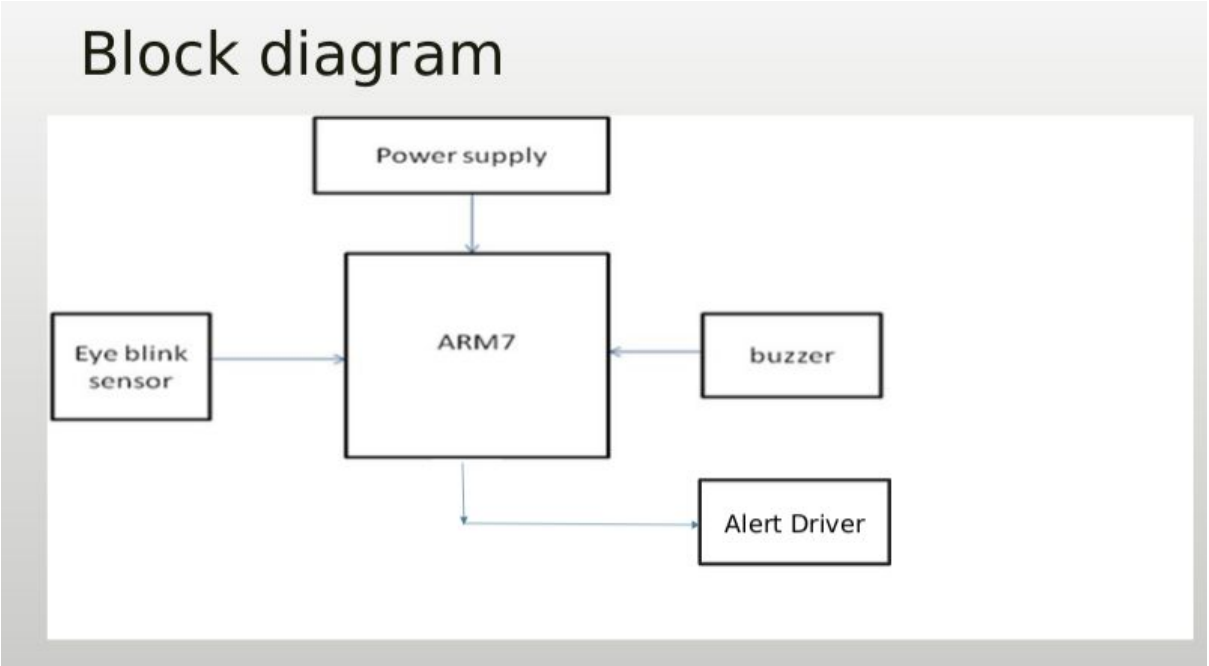
■ This project is developed as a prototype drowsiness detection system. The focus is placed on designing a system that will accurately monitor the open or closed state of the driver's eyes in real-time.

■ Once drowsiness is detected then buzzer which will be fixed in the back of the driver's seat, near the backbone will on and it will vibrate leading to waking up the driver immediately.

Algorithm:

- ➔ **Step1**: Initialization of process
- ➔ **Step2**: Sense the data from eye blink sensor
- ➔ **Step3**: If the data send by sensor
- ➔ **Step4**: Process the sensed data
- ➔ **Step5**: Check the mode
- ➔ **Step6**: Normal mode else sleeping mode
- ➔ **Step7**: Normal mode
- ➔ **Step8**: Else if sleeping mode
- ➔ **Step9**: Buzzer on
- ➔ **Step10**: Vibration for alarm
- ➔ **Step11**: stop the process

Block diagram



Hardware components

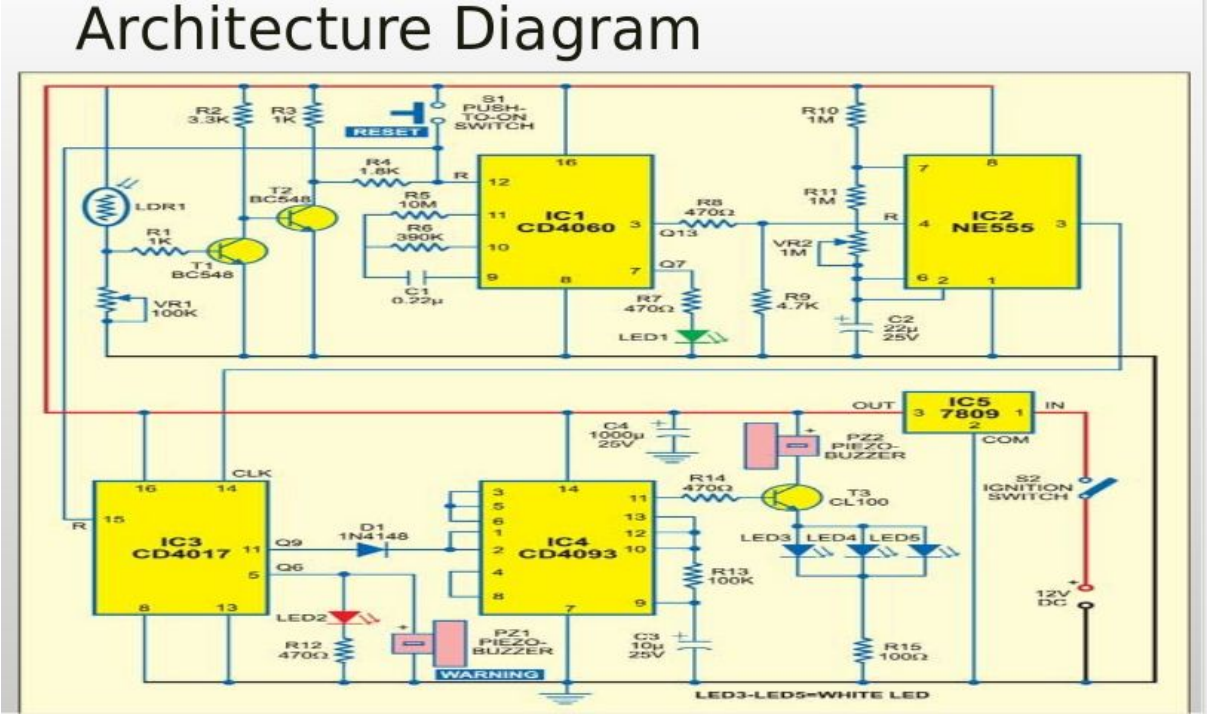
■ Advanced RISC Machine(32-bit)

■ Eye Blink Sensor
We can avail readily available blink detectors in market or we can incorporate it with a special instruction written in image processing that, if there is no pupil found for the certain period of pre-determined i.e. time greater than the human eye blinking time then consider an event called “blink”, for which the set of operations will be followed.
Here, in this case we need to set time as 1 second or above it, as “blink event” is different from “normal eye blinking”.

■ IR Sensor
Infrared transmitter is one type of LED which emits infrared rays generally called as IR Transmitter. Similarly IR to receive the reflected

infrared rays of eye. If the eye is closed then the output of IR receiver is high otherwise the IR receiver output is low. This to know the eye closing or opening position.

Architecture Diagram



CONCLUSION

The driver drowsiness alarm system is used to avoid various road accidents caused by drowsy driving. And also this system used for security purpose of a driver. This project involves controlling accident due to unconsciousness through Eye blink. Here one eye blink sensor is fixed in vehicle where if driver loses consciousness, then it alerts the driver through buzzer(vibrations) to prevent vehicle from accident.