

Accident Prevention System Using Eye Blink Sensor

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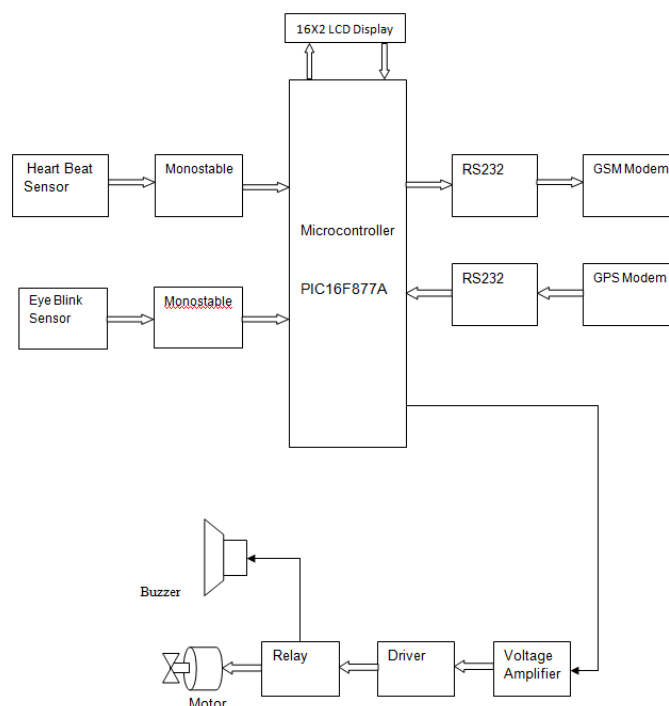
Abstract: According to a government report, road accidents in India killed 1, 34,000 people in 2010. By monitoring drivers abnormal health condition, and to check if the driver is sleepy, the fatal accident can be reduced. By keeping this in mind, we propose this project to construct an device which can monitor and prevent accidents, to detect driver health condition and control the vehicle, which can detect accident and alert ambulance support and family member with location information.

Keywords: eyeblink sensor, heartbeat sensor, PIC microcontroller, GSM, GPS

1. INTRODUCTION

This device is designed to check if the driver of car is sleepy. If the system finds that the driver is sleepy, then this system will reduce speed of the vehicle and stop to avoid accident and alert the driver with a warning message and sound. At the same time the system will send a message to the family member via GSM message. This device is also designed to check the heartbeat of the driver while driving the vehicle. In most of the accident case, the driver may be in tension or abnormal health condition. To avoid accident due to tensed or abnormal health condition, we have designed this system. This device is designed to continuously monitor the heart beat of the driver. If there is any change in the heart beat then the device will automatically control the speed of the vehicle and alert the driver with a warning message and sound.

Block diagram



Working principle: In this project, the driver monitoring device is fitted with eye blink and heartbeat sensors to find if the driver is sleepy while driving and to monitor the health condition of the driver. We are using these health parameter monitoring sensors to monitor whether the driver is in normal condition or in tension while driving the vehicle. The eye blink sensor will check to find if the driver is sleepy while driving, if the sensor detects that the eye of the driver is closed, then it'll send signal to the microcontroller via monostable to provide stable input. The microcontroller will process the signal to find if the eye is closed for more than three seconds then the microcontroller will control speed and stop the vehicle with the help of buffer, driver and relay circuit. The heartbeat sensor will detect the heart beat of the driver and give the signal to the microcontroller via monostable to provide stable input. The microcontroller processes the signal and check heartbeat of the driver for every 30 seconds. If there is any change in the heartbeat of the driver then the microcontroller will control the speed of the vehicle with the help of relay and driver circuit to avoid accident. At the same time the microcontroller will alert the driver with a warning sound and message. The microcontroller will activate

the buzzer with the help of relay and driver circuit and message will be displayed on the LCD display. At the same time the microcontroller will get location information from GPS and send it to the family member via GSM.

Future scope: This microcontroller for very fast operation of processors. And also the cameras can be interfaced with this system to see the exact scene of an accident. And also the system can be design which automatically shutoff vehicle engine while accident occurs.

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