Implementation of Seat Belt Monitoring and Alert System for Car Safety

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Abstract.
Modern cars have many safety features which are playing a significant role in reducing traffic injuries and deaths. One of the reasons that cause cars accident's fatalities is not wearing a seat belt. In order to overcome this problem, an attempt has been made to design a car safety system whereby the car will not run unless the driver and passengers use the seat belt first before turning on the car. In the proposed system, the ultrasonic devices and limit switches are used to detect driver and passengers and also to detect seat belts that have been used, respectively. In addition, the switch of electric circuits is designed and installed between seat belts and ignition systems to control start engines. Arduino Mega microcontroller act as a signal processing unit to control the security system in the car. The experimental results show that the system is accurately able to enhance the safety aspects of driver and passengers.

Keywords: Seat belt, Alert systems, Car Safety