



CSE360: Lab SEC 03

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Group Name: Quadro

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Project Proposal

Project Name/Title

Arduino Based Vehicle Collision Detection System

Project Overview

Like every invention of science and technology modern vehicles are not safe from error and faults which often lead to loss of human life. As the world is moving towards green energy, electric vehicles are replacing oil driven cars. Automotive industries are implementing self driven autonomous cars and as usual with ease comes problem. To tackle the vehicle collision and emergency response problem we have come up with the idea of creating a low cost collision detection system where Arduino Uno will work as the core. We will build an Accelerometer within Proteus by using Potentiometers in 3D axis in order to mimic a moving vehicle. An LCD will work as a display and show warning text in the event of a collision which in our case will be an unoriented axis. Once an accident is detected GPS and GSM sensors will locate the vehicle and show the exact location where the collision occurred by providing longitude and latitude of the place. These coordinates can further be sent to local police or healthcare clinics in order to dispatch help to collision spots. As for the project environment we will view the outputs in LabVIEW tables via the com-ports attached with Proteus. Since the detection system is low cost as well as power consumption is very low any small or big vehicles starting from bicycles to trucks can implement this to ensure help during an event of road accident. Future development of this project is also possible. For instance, implementation of vehicle tracking since GPS and GSM modules are already present within the system. Integration of mobile apps is another aspect of the project so that users can change system settings and add/remove contacts to whom the location and emergency messages will be sent etc.

Expected Equipment

1. Arduino Uno (Arduino UNO R3 V1.0)
2. 16x2 LCD Module (LM016L)
3. Potentiometer as Accelerometer (POT-HG)
4. GSM Module (SIM900D)
5. GPS Module (v1.0)
6. COM Port (COMPIM)
7. Resistors