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(57) Abstract :

According to survey, 10% of the total vehicle accidents happen on curved segments in hill stations. It is risky while driving in bends and curves. In order to provide solution, an IoT based Accident Prevention System for Hairpin Bend Roads has been proposed in this work. The objectives of the proposed work are to provide a safe and comfort hill travel by avoiding accidents mainly at the Hairpin bends and U curves, and to alert the drivers of both the vehicles approaching the bend, by generating traffic warning signal that indicates the arrival of a vehicle ahead on the opposite side of the bend. The proposed system includes ultrasonic sensor to detect any vehicle reaching the hair pin bend and alert immediately the vehicles on the other side by enabling an yellow signal. In the proposed work, NodeMCU is used as a processing element which supports ESP-NOW communication technology to enable two-way communication. Therefore, this system reduces the incidence of vehicle collision especially in the forest or hilly region which has poor internet connection. To solve connectivity issues, it has been implemented with machine-to-machine communication protocol without internet. KEYWORDS:Ultrasonicsensor,RPS,LED,Buzzer,ArduinoUno,LCD display,andGSM.

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