

Car Speed Detector Using Arduino and IR Sensors

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Abstract: *Road accidents caused by over-speeding vehicles have become a major concern worldwide. Monitoring vehicle speed and enforcing speed limits are essential for improving road safety. This research presents the design and implementation of a low-cost Car Speed Detector using Arduino and infrared (IR) sensors. Two IR sensors are placed at a fixed distance apart to detect the movement of a vehicle. The time taken for a vehicle to pass between the sensors is measured by the Arduino microcontroller, and the speed is calculated using the distance-time relationship. The calculated speed is displayed on an LCD screen. If the detected speed exceeds a predefined threshold, an LED indicator and buzzer alert are triggered to warn the driver or monitoring authority. The system is simple, economical, and suitable for educational projects and small-scale traffic monitoring applications.*

Keywords: *Arduino, Vehicle Speed Detection, IR Sensors, Traffic Monitoring, Embedded Systems*

