

Towards an IoT-based Vehicle Management System for Vehicle Tracking & Vehicle Diagnostics with OBD2 Telematics

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In a fleet of vehicles, concern about each vehicle is mandatory. A Vehicle Management System (VMS) is primarily used to manage the vehicles' details and track the details of the vehicles. The importance of vehicle tracking and diagnostics must be stressed as other fleet management features also depend on them. Most fleet management systems depend only on vehicle location tracking using Global Positioning System (GPS) technology to manage the fleet's data. This proposed system aims to combine the vehicles' tracking details and diagnostic details for doing fleet management remotely by minimizing human resources. According to the reviewed systems, On-Board Diagnostics (OBD) has been identified as a reliable automotive technology for tracking the performance inside the vehicle and regulate the performance. The proposed system has both a tracking device and an ELM327 Bluetooth OBD scanner in order to receive coordinates of the vehicle's location and vehicle diagnostics, respectively. This paper signifies the use of the Internet of Things (IoT) to accomplish remote access to vehicles' data. For vehicle data to be sent to the cloud, GSM technology is required to send the vehicle's data to the cloud server for remote monitoring. As a cloud server, it uses a Message Queuing Telemetry Transport (MQTT) broker. The Arduino sensor data is lightweight and therefore uses the messaging protocol for the IoT for data transmission by connecting the devices to the internet. The proposed system incorporates the most advantageous technologies and devices for fleet management.

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