Advance parking system using multiple sensor detection and GPS

Abstract -

With progressively growing number of vehicles in India searching for parking lots consumes energy, health, and time of drivers and also causes pollution. To detect an available vehicle park slot with low cost and simple installation. We propose an intelligent parking detection for that it will take GPS location of user to provide nearest parking lot. Therefore, we use sensor and combination of sensors to be more reliable detection of vehicle in parking lot with energy-saving and easy installation. When sensors detect an object in the parking space, the data are sent to the server. The data are processed and the vacant parking lots are displayed on mobile application, so the drivers can reserve a space before they arrive the parking lot.

Keywords – Advance Parking System, Sensors, GPS, Ultrasonic sensor, Infrared sensor.

Literature review –

The study conducted by SARTHAK MENDIRATTA, DEBOPAM DEY and DEEPIKA RANI SONA show that the use of ultrasonic sensors for detecting an object. They are passing data through wifi to the server and though that use will be able to identify that slots are available or not. They have done successfully in their research. [1]

This paper discusses an innovative car parking management system based on the Anisotropic Magneto-Resistive sensor (AMR). here AMR means "Anisotropic magneto-resistive sensor". Magneto-resistivity is the ability of a material to change resistance under the influence of magnetic fields. There are several different magneto resistive effects, but Honeywell sensors use the Anisotropic Magneto Resistive (AMR) effect which occurs in ferrous materials, including Permalloy. But using these sensors have its own drawbacks, because it changes it's resistance under the influence of magnetic fields, if someone put any metal material near the sensor then the sensor will display that parking spot as occupied, even when there is no vehicle parked in that spot.[2]

References –

1. SARTHAK MENDIRATTA, DEBOPAM DEY and DEEPIKA RANI SONA: Automatic Car Parking System with Visual Indicator along with IoT. IEEE, (2017)
2. Soukaina Elaouad, Salima Benmakhlouf, Naoufel Tobaji, Mohamed Amine Dmini and Yassine Salih Alj: Car Parking Management System using AMR-Sensor Technology. IEEE, (2015)