Smart Parking System using IoT

I.Introduction

Internet of thing (IoT) has the ability to transfer data through network without involving human interactions. IoT allows user to use affordable wireless technology and also helps the user to transfer the data into the cloud. IoT helps the user to maintain transparency. The idea of IoT started with the identity of things for connecting various devices. These devices can be controlled or monitored through computers over internet. IoT contains two prominent words “Internet” and “Things”, where Internet is a vast network for connecting servers with devices . Internet enables the information to be sent, receive or even communicate with the devices. The parking problem causes air pollution andtraffic congestion . In today’s scenario, parking space is hard to search in a day to day life for the people.

II. Problem statement

- The sensors used in IoT based smart parking systemstores and accesses data from remote locations with the help of the cloud these factors give raise to cloud of things (COT).

Objectives

Smart Parking involves the use of low cost sensors, real-time data and applications that allow users to monitor . Some solutions will encompass a complete suite of services such as

online payments, parking time notifications and even car searching functionalities for very large lots. A parking solution can greatly benefit both the user and the lot owner.

Optimized parking – Users find the best spot available, saving time, resources and effort. The parking lot fills up efficiently and space can be utilized properly by commercial and corporate entities.

Reduced traffic – Traffic flow increases as fewer cars are required to drive around in search of an open parking space.

Reduced pollution – Searching for parking burns around one million barrels of oil a day. An optimal parking solution will significantly decrease driving time, thus lowering the amount of daily vehicle emissions and ultimately reducing the global environmental footprint.

Methodology

- radio frequency identification (RFID) card is used for every vehicle to store the information of the entrance

Implementation

- This section contains the implementation of the proposed system. Every user who enters the parking slot contains aRFID card which contains the details of the user.

- When the RFID card is scanned by the reader module, the details of the user aretransferred into the module. Now the IR sensor checks whether the parking space if free .

- If, there is noData collection and analysis space available the parking barrier gate will not open.Amessage is sent to the user with the help of a GSMmodule which sends a registered message depending upon the availability and unavailability of the parking space.
- The WIFI module supports the system by storing all the data in the cloud. It connects the devices with the cloud server.

- WIFI
- Sensor

Recommendation

Using sensors to track and notify users of parking spot availability ,and a mobile app to enable users to check and reserve parking spaces

CONCLUSION

- The concepts of smart cities have always been a dream. There have been advancements made from the past couple of years to make smart city dream toreality.
- advancement of internet of things and cloud technologies has given rise to the new possibilities in terms of smart cities.
- Smart parking facilities have always been the core of constructing smart cities.