

**SMART PARKING SYSTEM**¹Kajal R Pardeshi, ²Shweta S Solanki, ³Neha R Bagal, ⁴Aniket Divekar, ⁵Prof. Manoj Mulik^{1,2,3,4,5} Department of Computer Engineering, college name college of Engineering, Pune

Abstract —Nowadays the congestion of traffic level increases with the increasing population rapidly. With respect to the amount of population country, the utilization of personal vehicles also increased. Most of the folks choose personal vehicles than public transportation. Enter his/her details to the application, and enter the location where he/she wants to reach time-consuming to find parking space in most metropolitan areas, commercial areas, especially during the rush hours. It is often costly in almost every big city in all over the world to find a proper and secure parking space. The proposed project is a smart parking system that delivers information to people finding a parking space online booking. It reduce unnecessary time consuming for searching the problem of parking space in parking areas. Hence, the website is provided by this project-based system where users can view various parking areas and choose the space from obtainable slots. **Keywords:**

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I. INTRODUCTION

Nowadays the congestion of traffic levels increases with the increasing development of the population rapidly. With respect to the amount of population, the utilization of personal vehicles also increased. Due to more use of cars in the traffic congestion occurred on the road. It is often costly in every big city in all over the world to find proper and secure parking space in areas. It overcomes the unnecessary time consuming for finding the problem of parking space in the city. Hence, the android application is provided by a system where users can show various parking areas and choose the space from available slots.

1. PROBLEM INGREDIENTS:

The parking management is main problem can be viewed from several angles. Limited number of parking slots, drivers not knowing where parking slots are, drivers not sure if parking slots have enough space and a tendency to park illegally on the roads.

2. Goals and Objectives**Goals:**

The ultimate aim is that the ideas and planning demonstrated through this system can then be easily upgraded to an actual parking facility in city. The purpose of the development of IOT based parking system is to eliminate the unnecessary frustration drivers experience as they waste of time which is priceless minutes circling parking garages looking for a slot. In addition, traffic flow within the area will be better regulated, creating a safe atmosphere for both drivers and pedestrians.

Objective:

To accurately predict and sense slot/vehicle occupancy in real-time Guides residents and visitors of the city to available parking Simplifies the parking experience in city and adds value for parking stakeholders, such as drivers Help city traffic in the city flow more freely leveraging IOT technology Plays a major role in creating better urban environment by reducing the emission of carbon dioxide and other pollutants It enables better and real-time monitoring and managing of available parking space

3. Scope

Scope of our project is as follows:

Technological advances have seen no implementation in parking management systems till date. Our true motivation came from a discussion where we were talking about the future prospects of IoT and cloud computing. We plan to create an effective smart parking system that significantly reduces traffic congestion.

Existing System

As we all know that the world's population is increasing day by day and automation is also leads to growth. So the entire world is facing a problem of vehicle parking. There is no space for vehicle parking easily available everywhere.

1. Valuable time wasted from inconvenient and inefficient parking slots on average, for a spot in parking lots.

2. More fuel consumed while driving around parking slots, leading to more CO2 emission being produced
3. Parking system issue. There is a shortage of land which leads to cutting down trees and deforestation. This has a harsh and adverse effect on the environment. The project aims at saving the ground space required for parking. Using this system number of cars can be parked according to the requirements

II. LITERATURE REVIEW

1. Paper name: Aydin by proposed Navigation and Reservation Based Smart Parking Platform Using Genetic Optimization for Smart Cities

Author: Gennady Berkovich

a navigation and reservation based parking proposal system was developed for smart cities. The proposed method involves the development of small devices that send data to the internet using the internet of things (IoT) technology. The free parking space closest to the current location is found by genetic algorithm. The proposed method is tested for different scenarios and accurate results are obtained.

2. silar proposed by Smart parking in the Smart city application System

Author: Suk-Hoon Jung; Gunwoo Lee; Dongsoo Han

It involved testing of features and subsystems for parking management as well as monitoring the turnover and occupancy of parking spaces in the city. This article describes the course of the pilot project, the employed detection and action elements of the system and also deals with the evaluation and the outcomes of the pilot testing.

3. Paper name: Interactive android-based indoor parking lot vehicle locator using QR-code

Author: Siti Fatimah Abdul Razak; Choon Lin Liew; Chin Poo Lee; Kian Ming Lim

QR code has been applied in many ways from marketing products, locating promotional items on shelves, finding stores and etc. In this study, we report on an android based application development aimed to provide navigation services to locate parked vehicles in an indoor parking space of shopping malls. We utilize the motion sensor, bar code scanner function and camera function built in smartphones. This application is able to show the route from user current location to his parked vehicle based on an indoor map of the parking area stored in a database.

4. Paper name: Mitigating the antenna orientation effect on indoor Wi-Fi positioning of mobile phones

Author: Varun Goel, Sharad Srivastava, Dharmendra Pandit, Dharendra Tripathi, Pankaj Goel

The main primary aims of this paper to design an IOT based architecture for health related issues such as Diabetics, Heart Monitoring system, Pulse rate measurement, Daily Activity, kidney functioning. The Data obtained through sensors are uploaded to the cloud and shared with others. Data obtained through sensors are processed and accessed through a smart phone.

5. Paper name: Somni by proposed “Cross Platform Smart Reservation Based Parking System “.

Author: Dharmendra Singh Rajput, Rakesh Gaur

Smart Parking System will be built on Android framework and web interface in order to make it easily accessible. The users will be able to search for nearest parking area around them using GPS and Maps API. Also, booking can be done online. Booking options will be available even before reaching the parking spot through the application online. The system will have a time limit after the booking is done, if the user does not arrive within the time limit then the booking will be cancelled. Cancellation charges will be applied accordingly.

III. SURVEY of PROPOSED SYSTEM

Step 1: Connections

Hardwiring the devices on Breadboard which includes the sensor and the Arduino Board.

Step 2: Software

Programming the sensor and the Arduino to function the way desired and then assigning values to the outlets of the Arduino and the sensor i.e. Vcc, ground, trigger, echo, etc.

Step 3: Data Connection

Pushing this data to the webpage using HTML as the language, CSS for the style, and PHP for the logic.

Step 4: Arduino connection

Connecting the arduino to the USB port of the PC, for data streaming.

Step 5: Final assembly of the design required for functioning.

Step 6: Test and execute.

Existing System

ADVANTAGES OF PROPOSED SYSTEM:

- Save time
- Lowering individual environmental footprint
- Smart parking reducing stress while searching for a parking space.
- Increase in safety.
- Reserve a parking spot for the user and display the time to reach that spot.

V. SYSTEM ARCHITECTURE

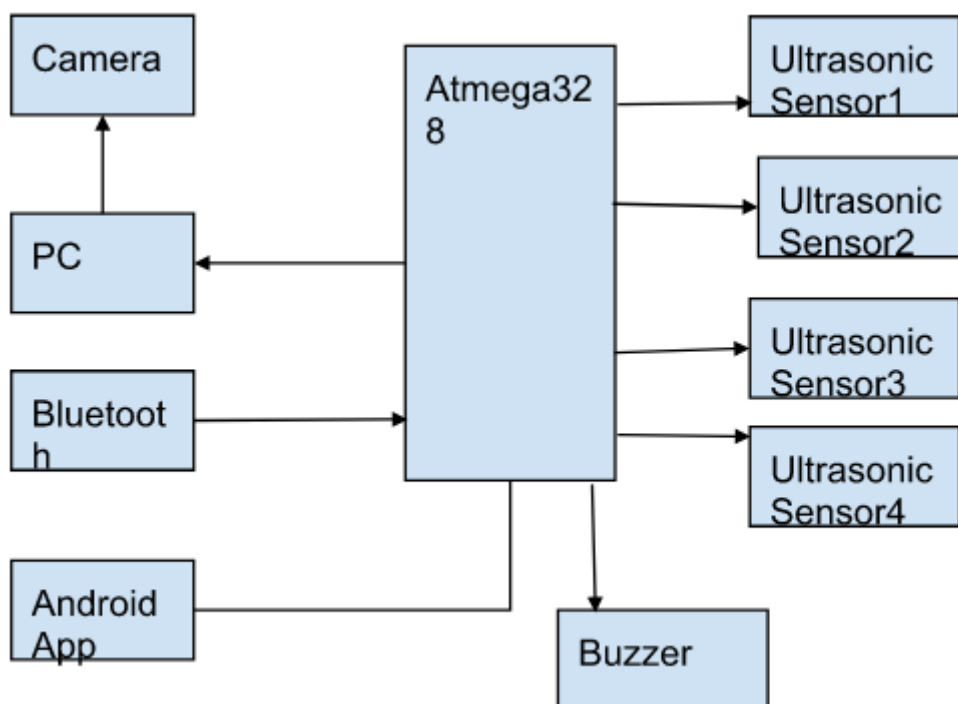


Fig.: System Architecture

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