

“PARK MY VEHICLE”

Smart Parking Cloud Based Application

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Abstract - Distributed computing is a standout amongst the most far reaching innovation in late time which has overwhelmingly changed the nature of a business. Web of Things is another innovation which has awed the everyday of person. Change in Cloud processing and Internet of things can be joined together and utilitarian for comprehending ongoing challenges. In our examination work, we have consolidated the Internet of Things innovation and an Android application utilizing distributed computing to plan an upgraded clever stopping framework. Review for planning an intelligent stopping framework has been described in this paper with a design graph. This framework will be sensible through an Android application or through the web-based interface gave. We have concentrated a portion of the existing outlines and it demonstrates that a large portion of the current plans aren't completely computerized and require an unmistakable level of human intruding or cooperation in or with the framework. The distinction between this instrument and the other existing frameworks is that we aim to make our framework as less human ward also, less physical activities as conceivable via mechanizing the autos and the whole parking area. To explain the activity clog trouble we require a better system in the stopping territory than measure purge space, Services and demonstrate the data to the general population who searching for the unfilled space for parking part. The reservation process is going on just by the client. Thus the client finds the unfilled parking garage and makes the activity of booking through a web access by an Android Application with driver's own particular learning Parking Lot.

Keywords: Car parking, Connectivity(c), Constrained Application Protocol(CoAP), End node(e), Hypertext transfer protocol(HTTP), Internet of Things (IoT), Internet protocol(IP), Message queuing transport telemetry protocol(MQTT), Processing node(p), Smart cities, Transmission control protocol(TCP).

I. INTRODUCTION

In big cities, Traffic congestion is major problem. Finding in large city Traffic congestion occurs when a volume of traffic, it demands for space greater than currently available road capacity, people can't maintain a steady speed, there's too many cars and not enough road or in case of rainy season etc. Nowadays, traffic congestion may occur because of several reasons like unawareness of information on available parking spaces. So, the result as car drivers spend lot of time driving along the streets in search of parking space, driver frustration, and air pollution. This also creates further traffic delays and exasperate for other car drivers. After finding parking space to the driver, he parks the vehicle, it maybe spend small amount of time to looking for a city council parking attendant to pay the parking fees. Sometimes, the time spent looking for the attendant is important and most drivers leaving their cars before they pay the parking fee due to the fact which include having your vehicle locked or event owed which in turn attracts heavy penalties. In some cases, drivers collide with parking attendants so that they give up the receipt but

pay an amount less than the actual parking fee to the attendant. Assignment of supervisors for the region with a number of attendants is aimed at reducing fraud hence increasing earning. However, the supervisors themselves have been agreement with the attendants in many cases such as drivers park the vehicles at a lesser fee but which they pocket and do not give up to the city council. The reality is that there is bigger loss since the council has to offer for wages of both the attendants and supervisors. Most of the problem related to finding parking slot to park the car can be accomplished and degrades by using new technologies. Our proposed system, eliminate or significantly reduce corruption to provide an alternative way for payment of the parking fees which do not require exchanging the cash by using hands. To reduce the time spent for locating parking space. This system provides the way of requesting for accessing available parking's slots information remotely. It also shows the possibility of variable message and application being used for providing such information related to available parking slot.

II. LITERATURE SURVEY

In literature survey, first paper we have referred, "A Cloud-Based Smart-Parking System Based on Internet-of-Things Technologies" (Thanh Nam Pham, Ming-Fong Tsai, DucBinh Nguyen, Chyi-Ren Dow, and Der-Jiunn Deng) states that a structure that helps client naturally discover a free parking spot at the littlest measure of cost in view of new routine measurements to ascertain the client stopping charge by remembering the separation and the add up to number of free places in each auto stop. This charge will be utilized to propose a consequence of judgment of an open parking spot upon a request by the client and an answer of recommending another auto stop if the existing auto stop is full. The model result demonstrates that the calculation shows signs of improvement likelihood of successful stopping what's more, decreases the client holding up time. This paper proposed a framework that helps clients naturally find a free parking spot at the littlest measure of charge in light of new routine measurements to decide the client stopping charge by taking into thought the separation and the aggregate number of open puts in each auto stop.

Secondly we have studied the paper, "Smart Parking System Using Cloud Computing" (Ajay R. Jadhav, Datta P. Hujare, Anil A. Pawar, Prashant B. Khandale, and Prof. P. S. Desai) which expected to accomplish most extreme productivity in a stopping framework administration. This framework is an exceptional framework for brilliant stopping reservation and security protection of a business auto stopping region in an inner city climate. Presently a day's crowding of activity expanding quickly. To take care of this significant issue in tremendous urban areas this framework was outlined. This framework decreased human power required for parking and different necessities.

And beyond this, the design "Smart Parking System Based on Embedded System and Sensor Network" (Faiz Ibrahim Shaikh, Pratik Nirnay Jadhav, Saideep Pradeep Bandarkar, Omkar Pradip Kulkarni, Nikhil kumar B. Shardoor) helped us to arrange our framework by utilizing IoT gadget for example, Raspberry pi. This plan comprises of IoT gadgets, implanted frameworks and remote sensor systems. This framework and execution depended on model of Reservation-based Smart Parking System (RSPS) that Grants clients to effectively discover and decline to give the accessible parking spots.

III. PROPOSED SYSTEM

The framework Architecture for Smart Parking Portal is "To help with the correct data, at opportune place in realtime with capable setup and area affectability". In this period we are managing tables and Smart Phones. A extremely engaging application incorporate observing where moment data expected to choose if the representative being observed is any genuine risk or wrong target. We have been ready to make number of various application

where we give the director rights to screen worker he/she needs to. However, these applications are constrained to desktop as it were. We have to import them on cell phones. We guarantee that while venturing out does not have to convey substantial documents or framework with him. All data must be accessible in his cell phone in easy to understand design.

IV. SYSTEM DESIGN

Customer device

A client can associate with the savvy stopping framework with their advanced mobile phones. Client gadget will give administrations like Parking area number, Ticket and manual numbers and Tag and so on. The administration 'parking area number' comprise of the insights about stopping region in the carport which portrays accessible spaces and in addition inaccessible openings. 'Ticket and manual number' contains the insights about what sort of administration ought to give to client. Amid each administration, the client gets extraordinary ticket and manual number. This makes to discover insights about action done on auto whenever in future if required.

NFC Card Reader

NFC stands for "near field communication." It's the technology that allows smartphones and devices like payment readers to communicate, and it enables secure, contactless payments like Apple Pay or Android Pay—transactions that require no physical contact between the payment device and the payment reader.

Admin device

The client gadget will get associated with carport administrator gadget. Carport administrator application will give different administrations like carport data, representative subtle elements, and money points of interest, include/evacuate autos and so forth. Carport data incorporates the data about accessible space, autos stopped at the minute, administrations occurring on specific auto, add up to number of auto entered, add up to number of auto out from carport i.e. internal outward points of interest of stopping. This gadget advances all gathered information to cloud. This put away information can be obvious by administrator through his web-based interface.

Super Admin

Super administrator will go about as a head. Super administrator will control the cloud administration and carport conditions. Super administrator won't specifically get associated with client. He will give administration to carport administrators as it were. Super administrator gives administrations like include/evacuate clients (Carport Admins), gives upkeep to them what not required assignments utilizing cloud. The raspberry pi programed by super administrator.

V. RESULTS & DISCUSSION



Fig. 1 Splash Screen (Screen Flashed when the application is getting opened)

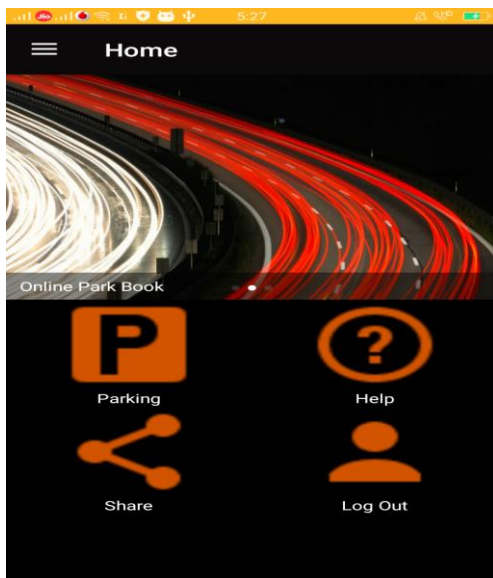


Fig. 2 Home Page of Application

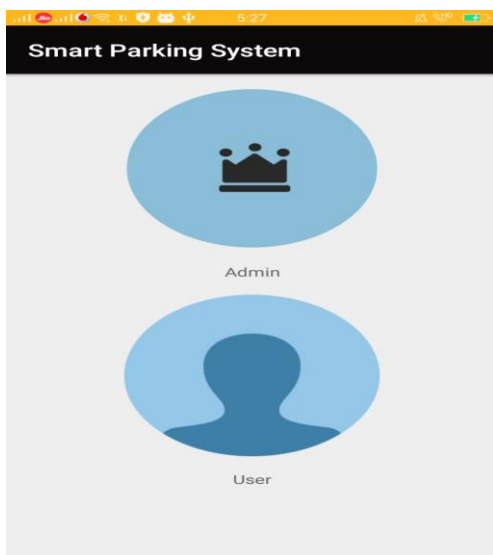


Fig. 3 Two Modules for Admin & User

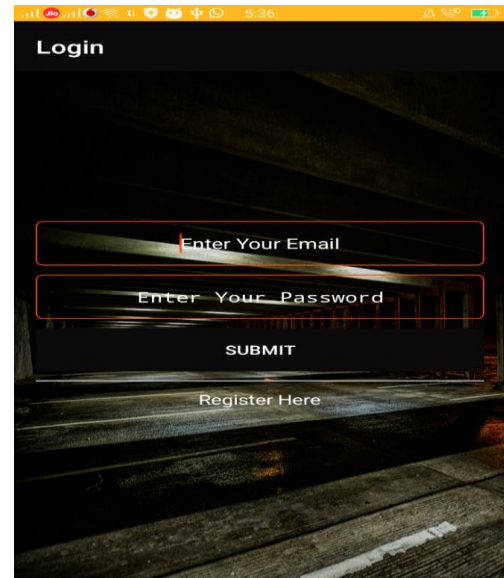


Fig. 4 Login/Sign up Page

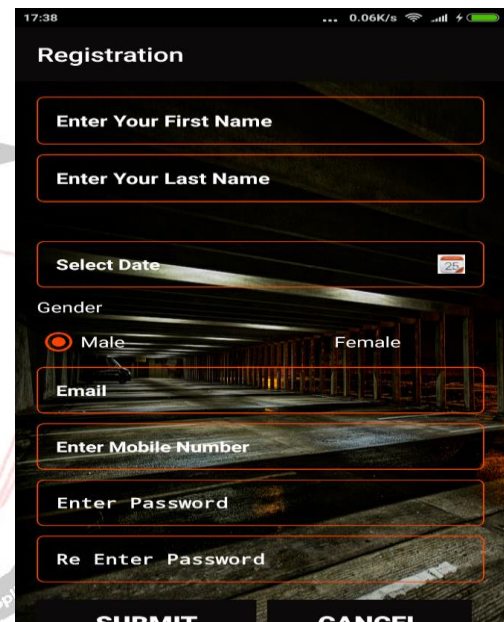


Fig. 5 Registration Page

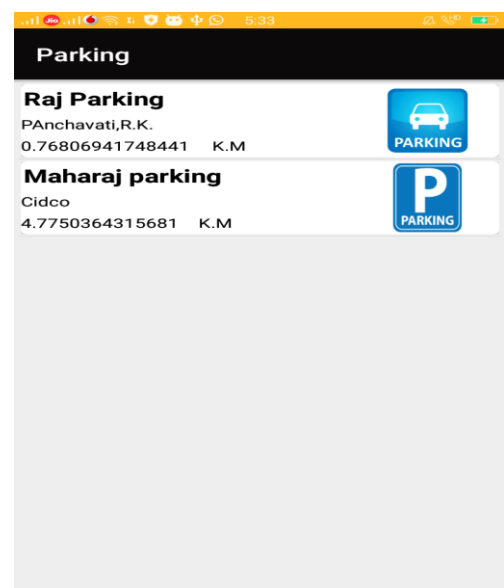


Fig. 6 Parking Availability Places



Fig. 7 GPS Location finder

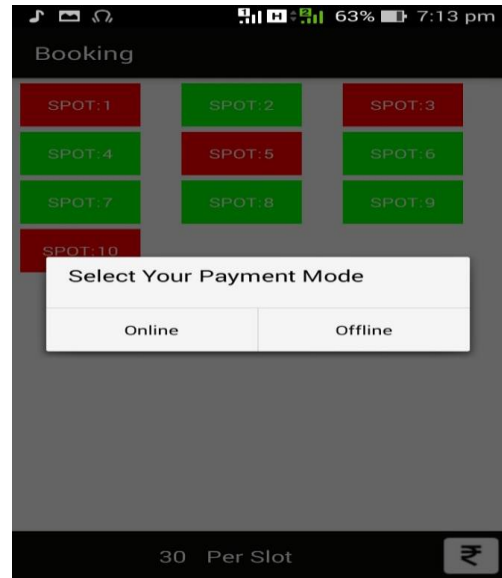


Fig. 10 Payment Mode Selection

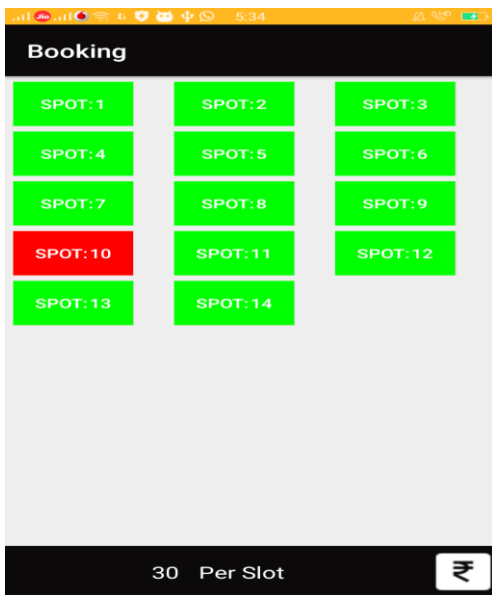


Fig. 8 Slot Availability and Booking

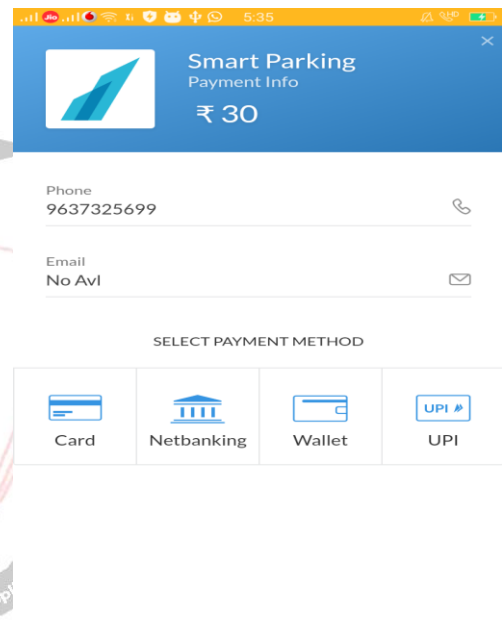


Fig. 11 Online Payment Details

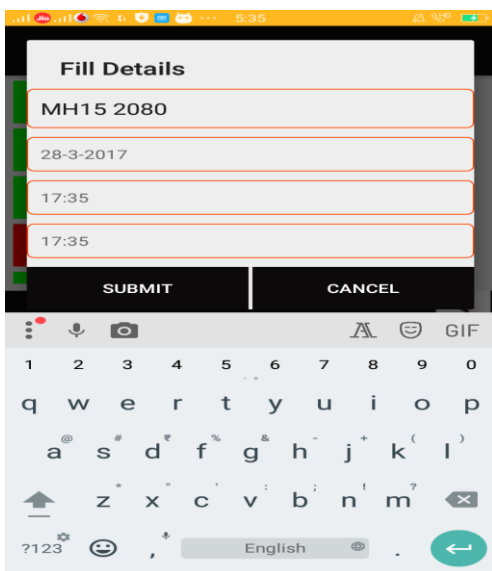


Fig. 9 Slot Booking Details

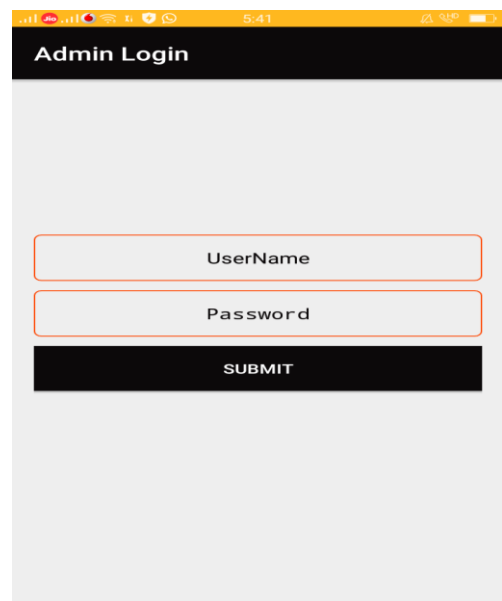


Fig. 12 Admin Login

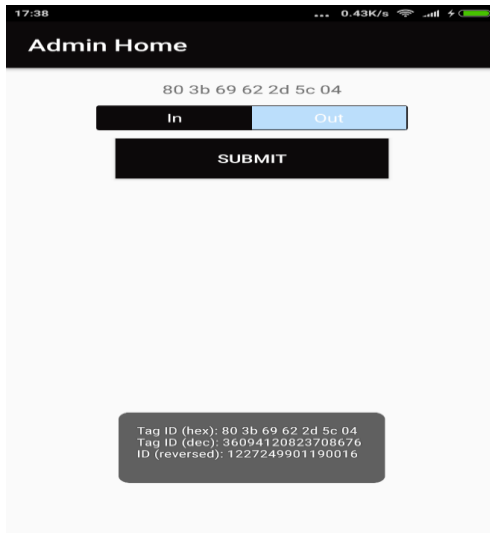


Fig. 13 Admin Home Page

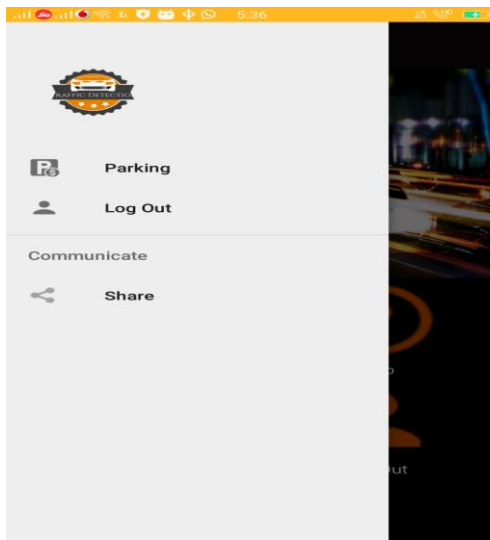


Fig. 14 Logout after booking work done

VI. CONCLUSION

In different investigations of Smart stopping frameworks, diverse creators actualized various frameworks which have dynamic course of action plan for aiding in various necessities of drivers and specialist co-ops, which depend on continuous stopping data notwithstanding, as showed in the tables of benefits and negative marks in this paper, more advancement is as yet expected to clear the crevice to the extent SPS is concerned. Definitely, this paper is to a great degree huge for new analysts in development of new strategies to deal with the issues which are confronted by drivers these days. In future work, continuous parking areas spilling through android application are profoundly suggested in which will effortlessly pushes the drivers to designate the empty parking garages. This will make the administration of the parking spots viably, by taking out need of difficult work.

VII. FUTURE SCOPE

The future extension to embrace this programmed Smart Stopping System (SPS) so that accessibility of spaces could

be shown on an advanced cell Application or even to satellite route gadget with the goal that drivers will constantly mindful of whether there are free spaces are most certainly not. And furthermore improve to send a few warnings to clients PDA when vehicle enters to specific shopping spots and a few boulevards in a city etc. This work is additionally reached out as savvy auto stopping framework with programmed charging system likewise completely computerized framework utilizing multi-layer stopping strategy. Wellbeing measures, for example, vehicle no. following, driver confront acknowledgment.

REFERENCES

- [1] Thanh nam pham, ming-fong tsai, duc binh nguyen, chy-ren dow, and der-jiunn deng. "a cloud-based smart-parking system based on internet-of-things technologies." digital object identifier 10.1109/access.2015.2477299 (2015): 1581-1591.
- [2] ajay.r.jadhav, datta .p. Hujare, anil.a. Pawar, prashant.b.khandale, prof. P. S. Desai. "Smart parking system using cloud computing." international journal of modern trends in engineering and research, www.ijmter.com, e-issn no.:2349-9745, date: 28-30 April, 2016 (2016): 251-252.
- [3] Faiz Ibrahim Shaikh, Pratik nirnay jadhav, saideep Pradeep bandarkar, omkar pradip kulkarni, nikhilkumar b. Shardoor. "Smart parking system based on embedded system and sensor network." international journal of computer applications (0975 – 8887) volume 140 – no.12, April 2016 (2016): 45-51.
- [4] Prof. Yashomati r. Dhumal, harshala a. Waghmare, aishwarya s. Tole, swati r. Shilimkar. "Android based smart car parking system." international journal of advanced research in electrical, electronics and instrumentation engineering, (an iso 3297: 2007 certified organization), vol. 5, issue 3, March 2016 (2016): 1371-1374.
- [5] Rajakumari, r.kaudilyar and kavitha esther. "Intelligent parking system using cloud." Asian journal of computer science and technology, ISSN 2249-0701 vol. 4 no. 1, 2015, pp.18-20, © the research publication, www.trp.org.in (2015): 18-20.
- [6] Vandana Pandey, V.K Mishra. "Architecture based on MD5 and MD5-512 Bit Applications." International Journal of Computer Applications (0975 – 8887) Volume 74– No.9, July 2013 (2013): 29- 33.
- [7] Kurt, Gokhan. "Raspberry Pi Android Projects." (September 25, 2015).
- [8] Cloud Computing: SaaS, PaaS, IaaS, Virtualization, Business Models, Mobile, Security and More." Jones & Bartlett Learning (01 Jan 2013).
- [8] Faheem1, S.A. Mahmud, G.M. Khan, M. Rahman and H. Zafar,IA Survey of Intelligent Car Parking SystemI, October 2013
- [9] S. Alam, M. M. R. Chowdhury, and J. Noll, "Senaas: An event-driven sensor virtualization approach for internet of things cloud," in Networked Embedded Systems for Enterprise Applications (NESEA), 2010 IEEE International Conference on, November 2010, pp. 1–6. [Online]. Available: <http://dx.doi.org/10.1109/NESEA.2010.5678060>
- [10] <http://ijarcet.org/wp-content/uploads/IJ>