Member Counting in Smart Buildings

B. Deva Naga Sylesh, B. Varun Kumar, M. Saravanan

Abstract--- ***In this contemporary age almost every person carries a mobile device. The quantity of cell phones present (number of people) is resolved utilizing techniques that catch arrange parcels sent by cell phones utilizing the 802.11 convention. The parcels are caught utilizing a Wi-Fi scanner, an equipment gadget that enables data to be assembled from 802.11/a/b/g/n/air conditioning systems. The quantity of individuals in a working with a satisfactory check of Wi-Fi scanners might be resolved with a positive likelihood which, beside its factual significance, may likewise be key in crisis circumstances in which it is basic to decide what number of individuals are inside a specific building. We are implementing Zigbee based network for different locations like colleges/ Shops / Floors. Exit doors are connected to the micro controller board for any immediate exit process initiated in case of any emergency. Android application is deployed to the customers after entering into the Mall. We would count the people based on the Zigbee count in every floor.***

Keywords--- Zigbee, Mobile WIFI, Android Application.

I. INTRODUCTION

Deciding the quantity of individuals inside structures is a point of current significance, and there are different strategies for achieving the objective. Optical sensors situated in passages (laser, IR)

The genuine tally is typically taken utilizing optical sensors set above entryways. Such sensors perceive whether people are leaving and entering the building, and the inner hardware at that point utilize this information to compute and total data on the include of individuals in the building. On account of cutting edge insight, the innovation likewise works dependably in increasingly equivocal circumstances, for example, when individuals enter in sets and gatherings or when there are people in the entryway zone preparing for other people.

3D ultrasound detectors

The guideline of ultrasound locators resembles that of optical sensors, then again, actually they work based on ultrasonic waves.

IR or camcorders situated around the building Perceiving faces with the assistance of face acknowledgment programming, checking the quantity of 'hot' heads—head recognition—or utilizing programming fit for including individuals in video accounts.

Recognizing the quantity of cell phones [1][2][3][4] Deciding individual MAC locations of cell phones utilizing AP or Wi-Fi scanner.

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II. LITERATURE SURVEY

Ioannis Th. Andreadis[1],This paper presents an effective system which helps during people evacuation process and prevents exit gates from collision. This process of the system contains four different steps : a) the detecting and tracking of people , b) the evaluation of feasible route for the usage in future, indicating possible collision in exit, c) indicating the free and nearby alternative escape, and d) activating the signals, optical and sound. Tracking and dectecting of people based on an increased application of a system suggested by Jones, Viola, and Snow that integrates both appearance and information of real -time movement. At any instant, detected people can immediately be defined as the condition of stage two in the system, that is the route evaluation model. Estimation route is dynamically enabled by a model induced by electrostatic-potential field. This model combines induced electrostatic-potential field to improve free movement of people. Presumable collision during crowd areas, leads to the activation of optical and sound signals that guide people towards alternative exit points. Anticipative management of crowd has not been employed, and system aims at an effective proposal**.**

Yuichi Kawamoto[2],The advancement in innovations identified with Internet of Thing's (IoT) gives another perspective on applications including to brilliant urban areas. Keen city application' center around fathoming issues looked by individuals in step by step life, and has pulled in much measure of enthusiasm for research. This issue for the most part found set up where we visit every day, for example, shopping center, stations, and arenas is swarm elements the executives. Hence, we are focussing on the administration of group to determine issue of impact utilizing IoT advancements. Continuous administration of group can be procured by data gathering identified with impact and less swarmed spots. Albeit many group the executives applications are been proposed in various situation's and a lot more models have been structured at last, a model for assessing the viability on the control of group the executives has not been created in the examination IoT Hence, in this examination, we are proposing a model to break down the execution of group the board applications. In other word's, the main intent of paper is to show the concept of control effectiveness of crowd management. This model uses the input of the control hypothesis, so empowers a one of a kind after effects of control adequacy arrangement of group the executives strategies under various situations. This paper additionally gives broad outcomes to confirm the viability of this model.

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Mujeb-ur-Rehman Shaikh, Javed Ahmed Mahar, Sartaj Ahmed Chandio[3],In Pakistan, Yearly event of dead ths amid the Muhram, Eidevents. There is no framework, to control the colossal crowed amid these occasions so they are incredible difficulties for security chiefs to screen, oversee and spare the lives of people groups. Saudi Arabia is actualizing devices for checking the gigantic horde of travelers amid hajj festival. The device apparatuses are broadly utilized for observing the crowed over the world. It is seen that ID of a specific individual is troublesome when an individual drops/lost his device. This paper displayed a quick SMS based security ready system utilizing Radio Frequency by means of GSM innovation for the distinguishing proof of fitting data and the area of individual. This proposed framework is tested and actualized on an event of Eid at Larkana. For test, 240 individuals are choosen amid the Eid Namaz and 362 individuals are choosen amid the visit of Ursu. The exactness of 98.5% was determined amid Eid and 95.52% amid Ursu. This proposed framework is useful for the security director to find individuals and can likewise utilized for different occasions like Hajj.

Ronald Y.Chang and Yen-Kai Cheng[4], Individuals/swarm tallying is the procedure of which is basic in individuals focused Internet of Things application, for instance security checking and the board of vitality for keen houses. Gadget less individuals including frameworks can as a rule be classified as dependent on the picture and non-picture based. Non-picture strategies has the upside of being nonintrusive and affordable, as just flags which are remote from the rack gadgets which are remote like Wi-Fi. In the paper, we propose the picture less method of checking individuals dependent on Deep neural system demonstrate utilizing physical-layer remote fine-grained marks like Wi-Fi .Just a single PC collector and one wifi transmitter are important, and individuals are may not be required to convey or wear any hardware that is gadget less.An imperative element space development technique that initiates the data of CSI estimation is proposed for the DNN model to improve its execution. Genuine proving ground tests demonstrated that proposed framework can accomplish as high as 88% normal right arrangement rate in assessing the definite number of the horde of size up to nine individuals in the most broad indoor situation.

Ricardo O. Mitchell, Fakir Dawod& Ali AlKhalidi, Hammad Rashid[5], Yearly there's a gathering of three millions Muslims to the religious Saudi Arabia, Makkah to perform traditional Hajj. As this is a big group of pilgrims travel to various religious sites security and safety is an issue of big concern. This research looks for the integration of various technologies of mobile to the utility of management of crowd, tracking people and location based services. This finds a solution to track location of people through RFID technology. This system shall be made available to people with smartphones to improve the tracking time and accuracy of the people and provide them with services based on location to Hajj.

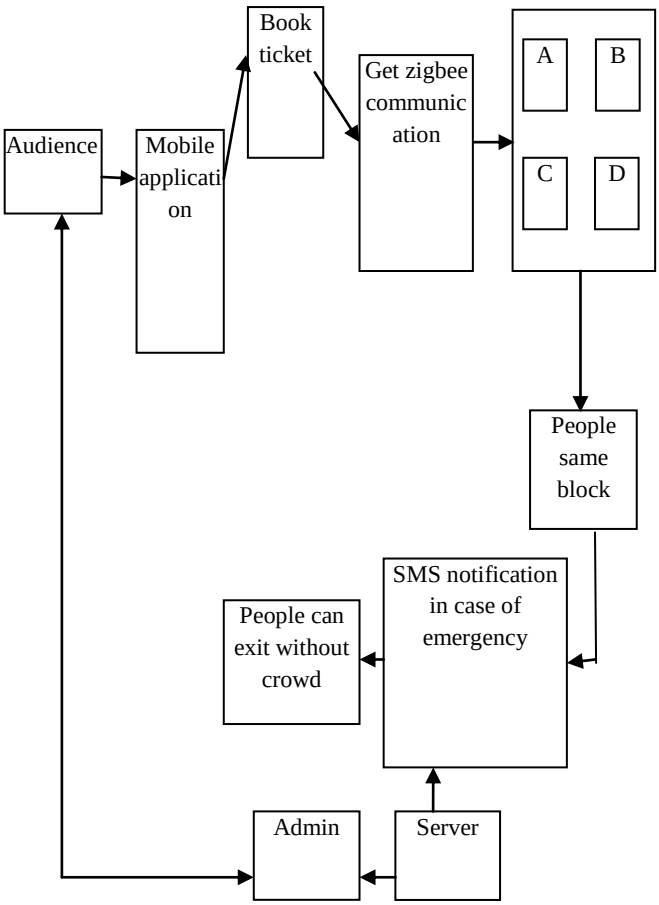
III. EXISTING SYSTEM

In the Existing System, People counting is not measured very effectively, if at all we can do we would be working with IR Count or Camera or Optical sensors positioned in entryways.

IV. PROPOSED SYSTEM

To direct a down to earth test, we observed our achievement in individuals moving inside an office space. We tried different working frameworks (Windows Phone, Android, iOS and Symbian) and phone models from different years. Amid testing, they are associated with an AP. The test was intended to decide if distinguishing the quantity of cell phones in a building will give an exact include of number of people in a building. Since the creators need access to portable administrator information, the improving supposition was made that most cell phones have Wi-Fi exchanged on. In the MODIFICATION rather than Wifi we are actualizing Xigbee based system for various areas/Shops/Floors. Exit doors are connected to the micro controller board for any immediate exit process initiated in case of any emergency. Android application is deployed to the customers after entering into the Mall. We would count the people based on the Zigbee count in every floors.

V. ARCHITECTURE DIAGRAM



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VI. STEPS INVOLVED IN THE PAPER

1. Android application
2. Centralized server
3. Wireless network
4. Exit door analysis

Android Application

In this step android based application is deployed from the user end and user would register their tickets through android based application and all the ticket has been registered in the centralized server, what are the mode of transaction all the transaction like fund transfer for ticket booking those details are stored on centralized server.

Centralized Server

In this step a centralized server is deployed for ticket reservation and as well as allotting seats for particular blocks for all the people. As well as the entries will be maintained from different areas.

Wireless Network

In this step wireless network through is deployed for the number people entered into a particular entrance , we will have zigbee to connected to the user end and another zigbee is connected to the particular entrance area. So like number of people whom so ever entering through particular would completely monitored and maintained in the server. Through this we can easily find how many people present in that particular area. So we can send some notification to that group of people if it any case of emergency.

Exit Door Analysis

In this step, once the problem was identified in the shopping complex we need to understand how many people are present in particular place. Immediately we have concentrate on more number of people present in a area. So we need to evaquate without making any big issue.

VII. ADVANTAGES

1. Avoid any accidents.
2. Provide proper passage for the visitor and avoidance of any injury over stampede.

VIII. CONCLUSION

Thus the paper infer that crowd will be managed through the Wifi and Hotspot connection. In this paper an android application that will provide the to book the ticket for the event and user can give feedbacks for that event through that application. User can exit the event without any blockage, if there is any emergency they can be communicated through the application ,and exit from the event hall .

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