

Smart Medication System For Elderly Person

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Available online at: www.ijcseonline.org

Accepted: 18/Aug/2018, Published: 30/Aug/2018

Abstract— In present society, busy life has influenced individuals to overlook numerous things in everyday life. The elderly individuals need to take their medicines on time without missing. This project depends on IOT. The project is a smart medication system for elderly individual that reminds to take their solution. It additionally recognizes to the guardian whether medicine is taken or not. At a specific time set by the guardian through the application, the medication box reminds elderly by a sound yield. Moreover, to recognize the tablet to be taken at a specific time, LED lights will flicker in the right rack of medication box. These activities gets rehashed thrice a day i.e., morning, evening and night. The guardian gets notification from the application about the status of elderly that is whether elderly took medicine or not. The guardian can change the alert timings of pill box through the application. The guardian can likewise set the updates about any appointments of hospital which is appropriate for elderly. He can likewise observe the medicine history of elderly in the application.

Keywords— LED lights, Prompt, medication box, guardian mobile.

I. INTRODUCTION

The most extreme advantage from medicines can be acquired when they are taken appropriately on time. Old age is an exceptionally delicate stage and they may discover tough to carry out their occupations autonomously, similar to their prescription. Elderly discovers hard to take their medicine at proper time as a result of their debasing memory. So somebody should screen them by reminding them to take proper medicines. Despite the fact that in the event that they make sure to take pills now and then they would get confuse like which tablet should to be taken at what time, as early in the day or evening or night and which pills should to be taken after meal and before meal. The guardian additionally disregards the arrangements in doctor's facility to take as much time as is needed. Our project produces an answer for above issues, by proposing a smart medication reminder system. In the busy timetable a person taking consideration towards their elderly is troublesome. The system contains hardware and software part. The software part contains an android application however this is utilized by the guardian. Therefore making the elderly to utilize it serenely. The system additionally gives the guardian to screen the medication of elderly with no strain or trouble.

The guardian can likewise set the arrangement subtle elements in the application and it will remind as needs to be the set information.

II. RELATED WORK

Ajmal Sawand et al [1], This paper studies best in class ways to deal with planning effective and secure eHealth checking. Additionally featured the basic administration segments, with specific spotlight on information gathering at tolerant side. To guarantee high proficiency of the proposed structure, they introduced and investigated the key difficulties that should be explained with a specific end goal to create effective and secure patient-driven observing framework. This compact overview paper is relied upon to fill in as the outline for our future work in view of a superior comprehension of the underlying drivers prompting the disappointments of existing security and protection conservation plans for eHealth checking.

Lionel Tarassenko et al [2], This paper has portrayed a vast clinical trial, attempted keeping in mind the end goal to 1) assess programmed strategies for appraisal of patients, in light of an electronic patient record increased with machine learning calculations and 2) address the apparent absence of confirmation in e-wellbeing research, that has been recommended as one of the essential reasons that such techniques have not yet been embraced at scale. The trial that they have depicted is the first of its kind, and carries with it numerous difficulties that they have needed to address, and which have been portrayed in this paper.

Abu-Dayya et al [3], It is presently conceivable to screen rest issue, for example, a sleeping disorder, in the solace of the subject's home. In this paper, another correspondence and security system for the remote observing of in-home sleep deprivation patients was proposed and completely assessed through tests. These results have a few ramifications for mHealth arrangements architects. To begin with, the encoding of the gathered PSG signals is of prime significance to enhance the versatility and productivity of the mHealth arrangement. In such manner, the EDF and EDF+ZIP were observed to be the best wellbeing information encoding methods. Second, the M2M correspondence modes and conventions ought to be likewise painstakingly outlined. At long last, this work accentuated the significance of executing compelling low-overhead security components, for example, SSL/TLS, to guarantee the protection and security of the traded wellbeing data and PSG signals.

Huang-Chen Lee et al[4], This paper exhibits a self-ruling, remote temperature and dampness sensor framework utilizing minimal effort and generally open soil vitality. The manufactured D-measure (55.8 cm³) Zn-C soil cell can supply a normal energy of 60– 100 μ W constantly without exceptional medications. Contrasted with other sustainable power sources, for example, sun based and tidal vitality, soil vitality is effectively open, obtuse to condition changes, and does not require costly foundation. The dirt controlled remote temperature and air dampness checking framework, including a Bluetooth-LE transmitter, and low-control capacitive sensor readout interface coordinated with a DC-DC converter, has been exhibited in this. The framework can be additionally used for remote field tests and condition checking in vitality obliged zones to keep away from visit battery substitution. To enhance the yield energy of a dirt cell, refined microbes and arranged soil substrate can be utilized. The new innovation can empower promising applications in natural observing and green gadgets.

Guan-Yu Hsieh et al [5], In this paper the effectively actualized an entire verification framework for dynamic RFID frameworks. An elite unbalanced key TTS calculation has been embraced as the center of our encryption innovation and along these lines takes care of the issues looked by conventional topsy-turvy enter calculation in the execution of key creation, mark, and mark confirmation. Other than they additionally composed and actualized RFID perusers and dynamic RFID labels. In there framework, unauthenticated perusers cannot straightforwardly read the figure content transmitted by RFID labels. The security and protection of the information would thus be able to be ensured. RFID perusers transmit information by utilizing multi-bounce handing-off in which each RFID peruser successfully transfers the gathered label data to the back-end stage for facilitate examination. Both RFID perusers and RFID labels

in our framework completely use the power-sparing plans in elite, low-control utilization microchip MSP430 for better power execution. The power switch of the RFID peruser can give the peruser a chance to be free from the impediment of energy organization and along these lines can give greater adaptability to the peruser's applications. The power administration control of the RFID tag can adequately drag out the length of task period to over one year. As of now RFID advances have been connected to different applications. In this paper, they hence proposed and actualized a RFID framework with security validation components to accomplish both the objectives of information security and information accumulation by means of long-separate multi-bounce handing-off.

R. Talmale et al [6], For home social insurance different innovation have advanced as survey considered, in this paper pharmaceutical, its booking have very much centered which is useful to enhance effectiveness of recommended tranquilize and decrease monetary factor. To enhance the current home social insurance method number of checking innovation has watched which prompts home wellbeing observing framework. The observing framework can be executed with detecting component and remote module which should need to secure. so message containing the wellbeing related data ought not be degenerate. IOT (Internet of Things) assume an essential part in imparting the two gadgets, the utilization of informing standard and correspondence convention we can safely exchange the vital messages with respect to wellbeing. Open source IOT cloud will be compelling for putting away sensors information, the advantage of carefully putting away is the recovering of information is simple and quicker way in the event of crisis for secure wellbeing. For the client individual personality and Encryption/Decryption purposes the RFID will best.

Gaetano Marrocco et al [7], The surveyed RFID innovation for IoT Healthcare and the individual experience of the creators recount an account of blended openings and discontinuity. Overall college labs are currently looking into and making models of RFID sensors, both latent and semi-dynamic that can be questioned from a separation perfect with the association with a system framework. On the opposite side, just couple of items are economically accessible for vast scale applications.

III. METHODOLOGY

A smart pill box furnished with a camera and in light of medication bag idea. The matrix bar code printed on medication bags is utilized to cooperate with pill box request to perform pill remind and confirm capacities. The data contained in the matrix barcode incorporates the patient name, patient ID, hospital ID, medicine name, medicine ID, and time and other related data about the medicine bag. The

camera is set on the internal side of the cover to identify the matrix barcode and the medicine bag. A user interface on the surface of the cover is utilized to give pill remind and alert functions. In the wake of going by a specialist and returning home, a patient need only scan the matrix barcode using the camera of the pillbox, and all medicine related data will be stacked into the pill box. After the matrix barcode is scanned, the patient places the medicine bag in the pill enclosure without dispensing the medicine in to the cell. This technique is reasonable for the elderly who don't approach the web also. At the medication time, the pill box will remind the elderly patients, through light, sound, or vibration, to take their prescription. The elderly patient will pick one medicine bag from the pill box and output the medicine bag utilizing the pill box camera. The pill box will utilize the data contained in the matrix bar code of medicine bag to guarantee the accuracy of the medicine bag, along these lines guaranteeing that the patient takes the correct medicine properly. On the off chance that the patient does not take the medicine, the pill box will remind the patient later, and the remind period can be set utilizing the user interface on the pill box. Moreover, if the patient picks the inaccurate medicine bag, the pill box will caution the patient to pick the correct medicine bag. After the patient has taken the medicine, the patient needs to examine the medicine bag utilizing the camera; the camera will decide if the medicine bag is a bag that was already filtered; if yes, at that point the camera will attempt to distinguish the edge of the pill in the straightforward medicine bag to guarantee whether the patient has taken the medicine. The pillbox can guarantee that the solution is taken securely and on time. The proposed framework contains programming and equipment part. Equipment part contains Touch sensor, bell, LED Lights. The product part contains an android application that can be utilized by the guardian by login to the application. In this application the overseer is permitted to set the update timings of pill box and he can likewise store the subtle elements of doctor's facility arrangements of elderly where this would be reminded by the application to guardian through warnings. The shrewd pill box recognizes to overseer that client took medicine taken or not. It additionally stores the medicine taken data in the server. Furthermore, the guardian likewise have an alternative of getting to the elderly pharmaceutical history, since it would be at some point more valuable to track how a specific medicine is successful in enhancing elderly wellbeing. Once in a while this information can likewise be utilized by specialists to recommend the drug to elderly. In the event that an arrangement detail is set in application, the application offers notice to the guardian. The smart pill take care of is made of a arduino board, contributions to this Node is touch sensor and yields are LED, Buzzer. The Alarm rings as per the time set by the overseer in the application. On the off chance that the set time is achieved, the caution rings and LED's will get on at specific rack contingent upon the time. As caution rings the touch sensor ought to be activated inside

15 minutes, in the event that it is touched by elderly inside 15 minutes, it shows elderly took the tablet and alert stops and message will be sent to the guardian. Also, the overseer is dependable to call the elderly and remind them once more. These information would be recorded in database, which can be seen by the overseer through the application.

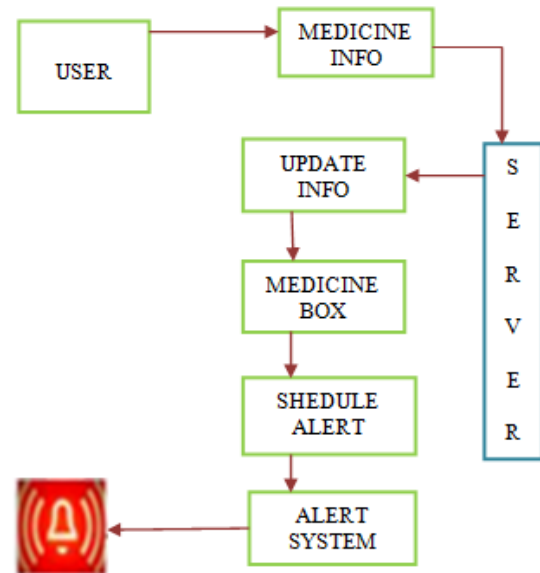


Figure 1: Proposed architecture diagram

Add medicine information: All the information's about the respective medicines are being added to the mobile application and is send to the server. All the details about the respective medicines are stored in the database.

Feeding the information: User can extract the information about the specific medicine from the medicine box. From the server an alert message is being sent to the user mobile application when to take the medicine whether it should be taken after food or before food with the respective timing i.e. whether it should be during breakfast, lunch or dinner.

Alert generation: User gets the alert message regarding which medicine to be taken from their android application.

User interaction: User can interact with the medicine box regarding all queries. There is an IR sensor, touch sensor and LED bulb connected to the hardware module. User receives an alert message in their mobile application. After receiving the message user get connect to the medicine box. When the user touch the medicine box, with the help of touch sensor data gets stored in the server. As IR sensor detect the motion of the human being so with the help of IR sensor it can detect that the person is about to take the medicine and the data is stored in the server. In the medicine box there are three chambers, the LED light blink on that chamber from where

the medicine is to be taken. And the user can take the medicine from that chamber successfully.

IV. RESULTS AND DISCUSSION

The proposed method has the smart device and the application, the application part consists of the login, add medicine, set alarm page respectively. Through this we can interact with the medicine box and schedule alert for the patients.

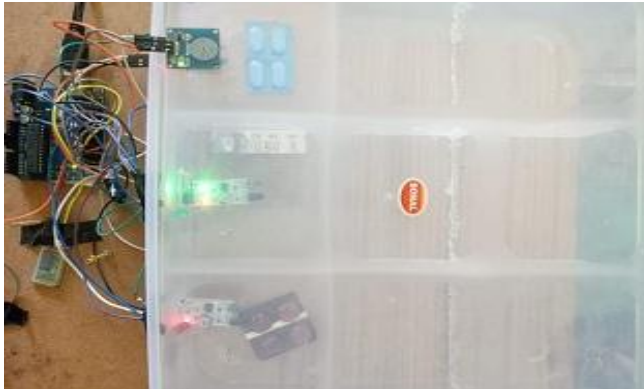


Figure 2: Medicine Box

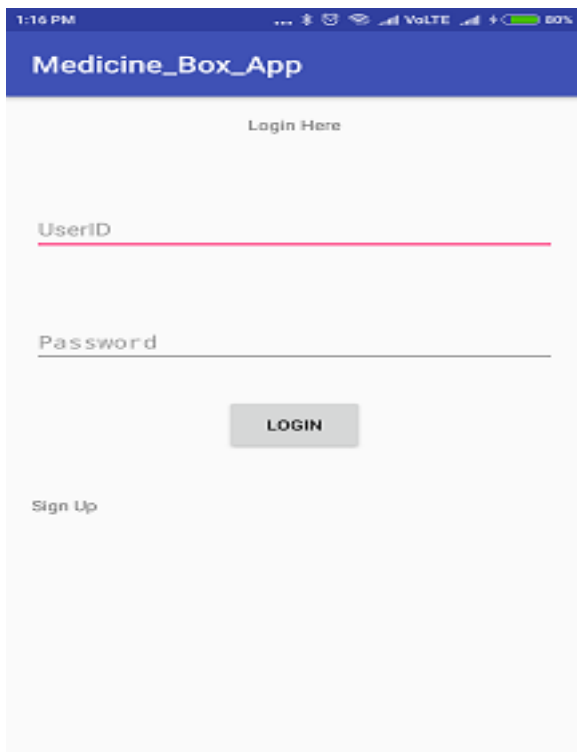


Figure 3: User Login Page



Figure; 4

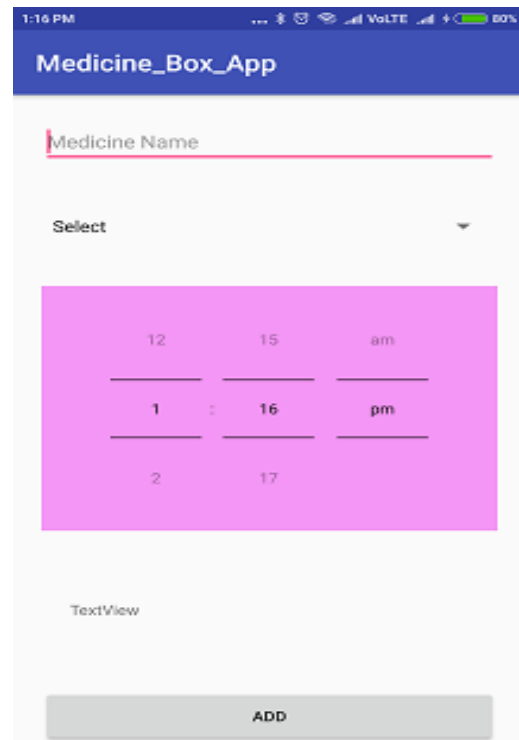


Figure 5: Adding medicine details

V. CONCLUSION AND FUTURE SCOPE

The elderly would be reminded convenient as indicated by the time set by the overseer. In the meantime overseer would likewise be recognized about the elderly prescription. The overseer can get to the android application of pharmaceutical

box by signing in to the application. The overseer is recognized through notices from an android application by means of Bluetooth module. The overseer can set the healing center arrangement subtle elements in the application and this information would be utilized to remind the guardian about the arrangement day and time .The guardian can have finish history of drug of elderly which is available in the application.

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