ELECTRONIC VISITS IN PRIMARY CARE

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Abstract: Hospitals have always used queues at their premises there is a long queue people get token from the counter and wait for their turn. So the drawback of that system is to waste of time and also this makes visiting hospitals a very painful experience for the patients. In today's world, patients are customers who expect good service. It is important to ensure that the wait-time is less and the waiting experience is better. Hospitals are seeking solutions which can meet these expectations.

In upcoming generation people don't want to waste their time. So the Automatic GSM based token system is very useful for them. In this system customer send request for the token to the GSM. He/she send a text message. After sending token request he/she get their token number from the system. In their token, they get particular token number and time so they can reach at that time for their work. Patient can get token from any place.

Keywords: Raspberry PI 3,Gsm,.

INTRODUCTION

Token booking is an important voluntary activity that is be done by people around the world to seek the doctors. The gift of health is a gift of life.There is no substitute to the token booking systems rather than standing in the long queue and waiting for a hell of a time to book the tokens. Every two seconds someone is important. As a result, the availability of the right type of systems plays an important role in saving the time of many individuals every day.

The existing systems make use of a website oran application to store the patient information and are limited to providing doctor's availability to the user who has requested for appointment.These methods have the following limitations:

The user who has requested for token may notbe able to book the tokens via phone. Moreover, till in there is only desktop system implemented.
The user cannot view the ongoing tokens.This reduces the prospect of knowing which token is going on.
So that I am introducing a system which reduces all these disadvantages.

LITERATURE SURVEY

Managing visitors requires distributing tokens, calling visitors, guiding visitors to one of the many counters/services, and breaking sequence to handle special cases. Until now, managing queues required ample manual intervention along with token system operator's assistance.

A Novel Intelligent System for Efficient Queue Management. In [1], it is described as once the customer enters the premises of the public service centre, he/she receives a token number, this number is usually distributed in the form of a small plastic chip or paper.
Then the customer can sit and wait for his turn to come. There can be more than two counters or even two minimum counters. where a service personnel is available who operates a push button to call a customer. A sound is also produced for a short duration to intimate about the change in token number. Smart Queue Management System using GSM Technology. The flow of this system takes place on three different platforms, Server PC, Microcontroller and the GSM modem. In the entire system, the GSM modem is the hardware link. A special purpose designed VB6 code controls the overall working. The operation of the microcontroller is controlled and monitored by an embedded C code which is compiled with the Keil compiler. The microcontroller observes

the room power automation and the display unitat the server end.

Portable Electronic Queue Control System. To control the queue of the users and also to be made sure that there is truly aprovision of improved service, this queue control system is used. This system is required to be allocated.

With Gaian's Announcement Management System, all the activities required to manage visitor queues at your premises are simplified by:

• **Making TVs an announcement/token display unit:** Integrating TVs at your premises with Gaian's IRDs makes them announcement display units. Your TVs, at all times, can continue to play any content that is required for your visitors and additionally act as an instrument to display announcements, and call and guide visitors to the required locations.

• **Enabling service agents to service visitors with a click of a button:** Service agents can sequentially manage their visitors with a click of a button. A service agent can run a counter to call visitors that hold different token types.

• Activities such as calling different types of visitors, closing counters/services, and jumping queues for special/emergency cases requires no technical help from any administrators/operators because these can be easily managed by the service agents.

• **Displaying tokens and announcements in any display unit at the premises:** Visitors are scattered across premises and displaying tokens in multiple display units is crucial for effective communication.

• Gaian's Announcement management system makes it very easy to target and send information to multiple display units and leads to error prone results.

PROPOSED METHOD

The proposed system eliminates the drawbacks of existing system by introducing FIFO scheduling algorithms.The project consists of Raspberry pi, GSM modem, RTC and an EEPROM.In this project the visitor need to call the primary care number, then it will be received by the GSM modem connected to controller. Based on the availability of physician it will

assign the token number to that number, then it will be store in SD Card for future reference.

DESIGN OF PROPOSED HARDWARE SYSTEM

The System Architecture has two sections. They are
(1). Token Generating section
(2). Mobile section.

(1). Token Generating section

In this project we are using Raspberry Pi is used for message analyzing and allocating token number.And we are using GSM module. It is used for receiving messages based on that it allocates the token number. The token number will be allocated based on Time& date information.This GSM module interface to the RPi by using UART Protocol. The allocated token number and time will be stored into the SD Card for future reference.
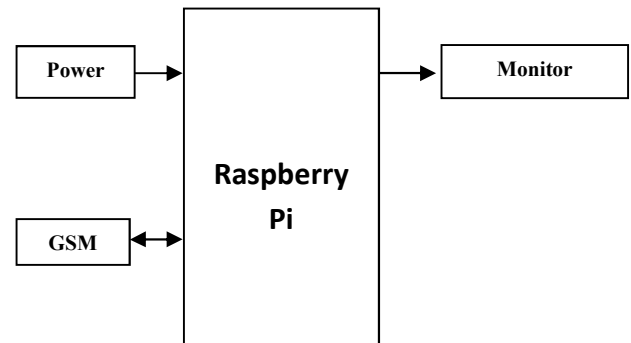

Fig.1.Token Generation Section

(2). Mobile section.

In this section any mobile phone with GSM compatibility will be used for message sending or calling. Based on the message Token generation section generate the token send message messaged number.

HARDWARECOMPONENTS
RaspberryPI

The raspberry pi is a small credit-card sized computer that plugs into monitor, keyboard or touch display. The Raspberry pi 3 model B is used in this project and it gives six times the processing speed of other previous models. The raspberries pi3 model B has Broadcom BCM2837 processor. BCM2837 is high powered ARM cortex-A53 based quad-core processor and runs at frequency of 1GHz with memory capacity

to1Gbyte. It has 40 pin GPIO Header for interfacing the external devices to communicate with processor. The communication media's are like I2C, CAN, SPI and in this project GSM is used by direct connection with TRX and RXI pins in GPIO. It has quad USB ports, 10/100 BaseT Ethernet socket, DSI Display connector, Micro SD card slot, 5v Micro USB, HDMI port, CSI camera connector and 4-pole 3.5mm jack.

This raspberry pi 3 works on the basis of Raspbian OS (NOOBS). Different types of raspberry pi are work on different operating systems. Raspbian is an open source operating system based on Debian optimize for the Raspberry Pi hardware. This raspberry pi3 contains an open CV based image processing library. This library is used for performing the operations on the images while performing face recognition and detection. Qt Creator is used in this project to create the application. Qt creator is uses C++, JavaScript and QML integrated development platform and which is part of the SDK for the Qt GUI Application development. It contains a visual debugger and forms designer. It has editor's features include pattern symbols highlighting and completion automatically. Qt Creator uses different compilers for different operating systems. For Linux C++ compiler from the GNU Compiler is used and On Windows it can use MinGW or MSVC with the default install.

GSM

Global System for Mobile Communication (GSM) is a set of ETSI standards specifying the infrastructure for a digital cellular service. In this we are using SIM 800 module for data transmission. In this GSM module is used to sending data to the server.
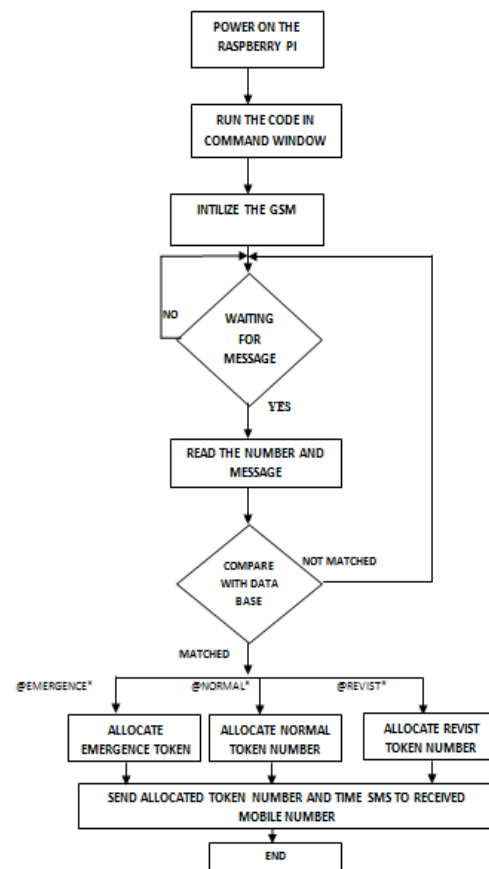
FLOWCHART

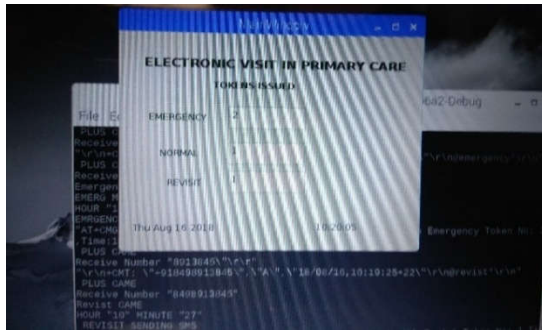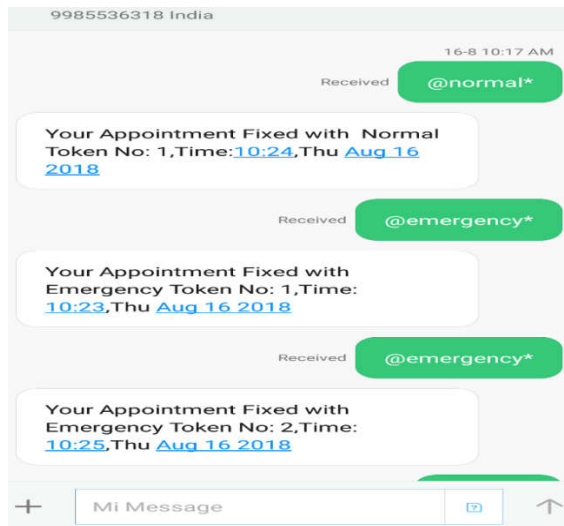Fig.2. flow chart

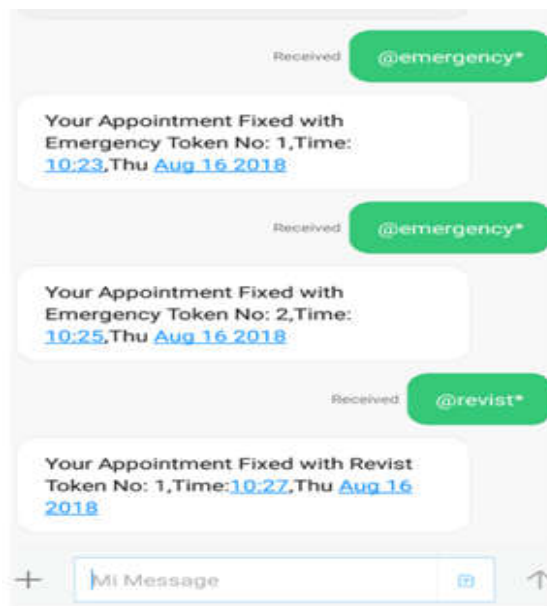**RESULTS:**

Fig.3. Hardware Model

Fig.4. Ui Window of Raspberry Pi

(a)

(b)

Fig.5. (a) (b) Token sending and reciving Messages.

CONCLUSION

This proposed system is a small step towards easing out the life. The whole pain n problem of waiting for ones turn to come in a long queue could be easily overcome by this project. Mobile phones have given a new dimension to the remote access mode of Communication system.

FUTURE ENHANCEMENT

The proposed application is adequate to solve the problems faced by the users such as inefficiency to book the tokens. By developing this application, the hospitals will benefit from having a more efficient and effective token alert system and to manage the database about the patients. The application can be further improved in the future by Including Google maps to keep track of every individual registered in the application and display results based on his location and other users locations.Usage of real-time data obtained patients and hospitals.Providing information about hospitals, health tips, excusing better cloud messaging services for the application to improve the response times of the message and reduce the drop rate of the messages.

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