ADVANCED NFC BASED HOSPITAL APPOINTMENT SYSTEM WHICH WORKS AS INTRANET

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ABSTARCT

Doctor Appointment and medicine scheduling is important to manage and also to keep track of day to day functionalities in medical sector. So in order to have a well appointment scheduling system helps us to deliver medication in time and convenient access to medical service which enhance patient satisfaction and doctor's efficiency .In most emergency case the patient rush to the hospital and has to go registration process which is too lengthy, sometime it's also possible to get date for the consulting form doctor's. Thus to overcome this problem an attempt has been done by developing an mobile application and making the medication facility online .even after this much oppositions to the patients still there exist the area of waiting for medicine delivery so to improve the medicine delivery facility (NFC SYSTEM)was developed it is called as Near Field Communication system . In the NFC System the patient only need to tapped the NFC appointment card at appointment Kiosk in hospital or clinic for making an appointment.

Keywords: ARM 7 (Lpc2148), ZIGBEE, Bluetooth, Lcddisplay (16x2).

I. INTRODUCTION

The main intention behind this project is to develop a system in which the patient will get a complete time delivery of medication and can fix appointment according to his time schedule. Before proposing of this system the patient has to wait for medication for long time and even has too face problems regarding to appointment fixing. Most of the time in causality cases the patient's relative has too fill registration form and then only the patient was attained by the doctor's .Thus now by using this project idea the patient no more need to wait for long time and have to go through long registration process.

II. LITERATURE REVIEW

2.1 Existing System

Today the medication and appointment system is based on first come first serve bases this approach works fine if the no of the patients are less. But as more patient need to get and appointment according to their convenient, the above method falls short and results in improper medicine delivery to emergency patients. Even in case of road accidents the patient has to fill the registration form which is extremely inconvenient and painful for the patient.

III. PROPOSED SYSTEM

To overcome the existing system problems the (Near Field Communication System) NFCSWas developed in this system the database of the patient has to be loaded and according to the priority of the patient, (priority depends on age and the problem through which the patient suffer through) a system would call to the concerned patient in order to fix the next appointment. In this system the patient can fix his /her appointment through internet, also the sensor network which is connected to his complete body will give the daily health checkup report to the nearby hospital

BLOCK DIAGRAM
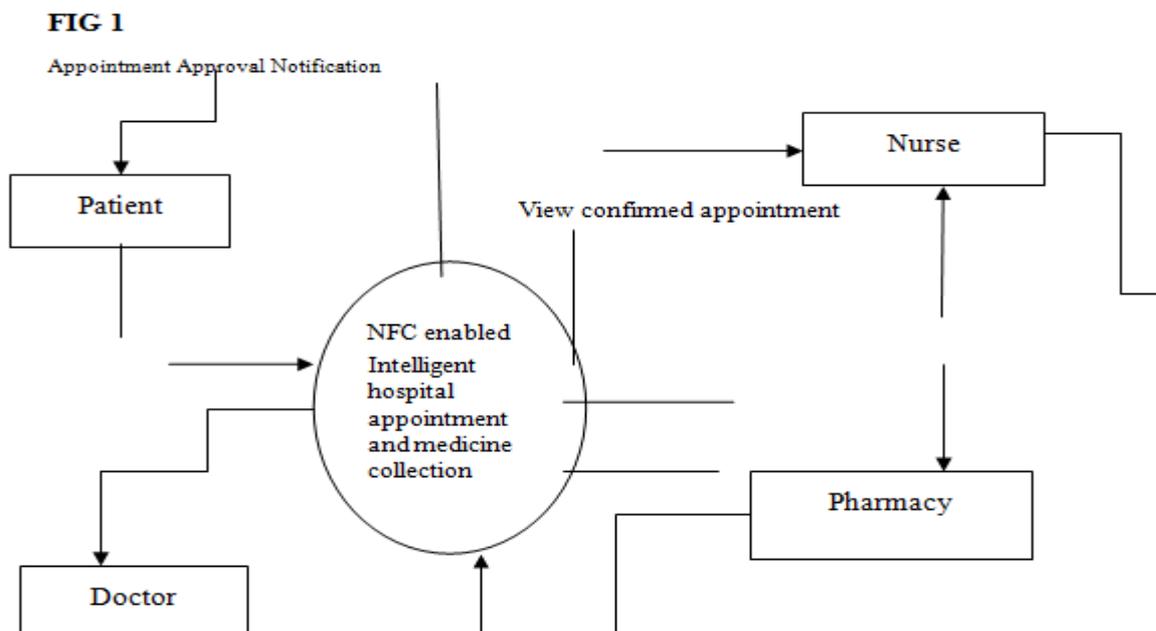
The above block diagram shows the flow of the NFC system in which the patient query comes through the sensor i.e. heart beat sensor or through zigbee module and that information is given through the GSM module in form of SMS to the doctor or to the NFC system .

BLOCK DIAGRAM

FIG 2: Mobile Bluetoothmain Control System

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Nearby doctor's clinic
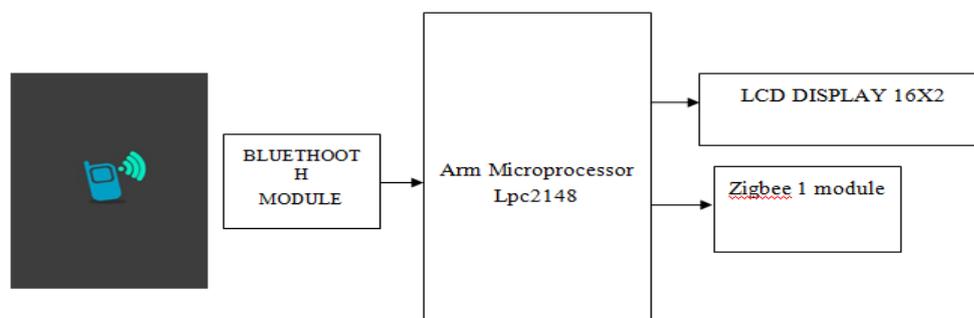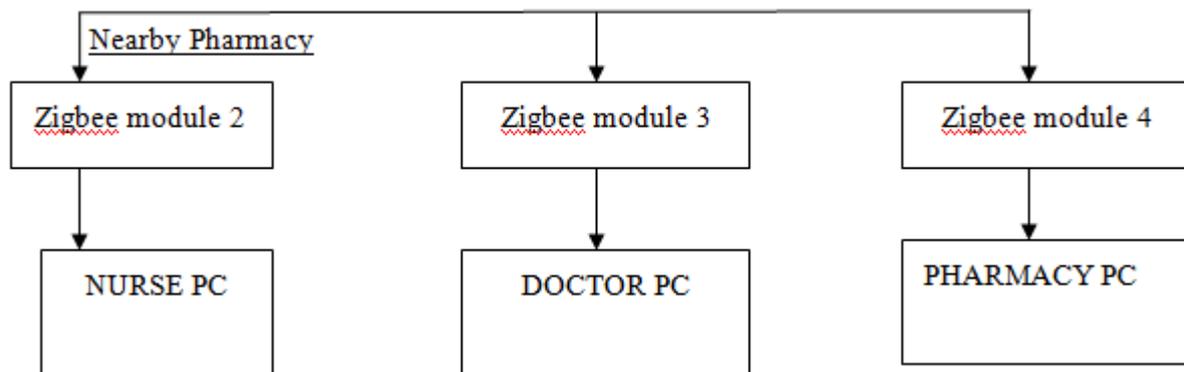
The block diagram shown above is the flow diagram of the concerned project. In which the Bluetooth in the mobile communicates via Bluetooth module connected to the central system which constitute of Arm Processor (LPC2148).

IV. ABOUT LPC2148 MICROPROCESSOR

The LPC2148 microprocessor belongs to ARM 7 family. The LPC2148 board is a 32 bit ARM7TDMI-S microprocessor with real-time emulation. It consist of 8 kilobyte to 40 kilobyte of on chip static RAM and 32kb to 512kB of on chip flash memory, the micro processor works with 12 MHz crystal frequency .The processor also support different protocols suite such as ISP (In System Programming),10 bit ADC affords variable analogue output , 32-bit timers with external event counter (with 4 capture and match channels).The processor also has RTC inbuilt thus extra hardware for the timer is not required.lpc2148 has 2 serial terminals which is called as UART0 and UART1.The same controller also has SPI and I2C bus with a speed of (400kbit/s).
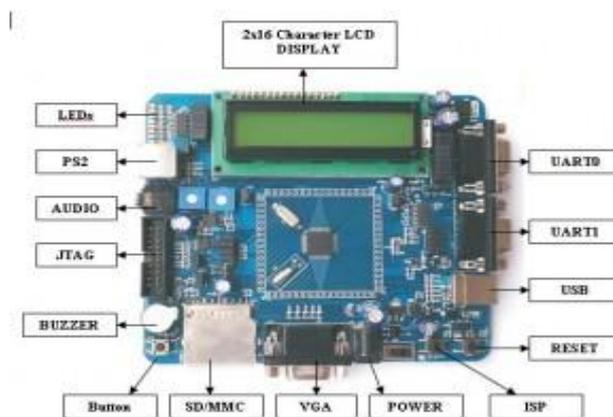

Fig.3 Arm Processor (lpc2148) Development Board.

The Arm LPC2148 Board also supports VGA, and SD/MMC card's these modules' are inbuilt in arm processor. The board also supports AUDIO –MP3 format, also a PS2 connection are also possible through which we can connect PS2 keyboard. Thus the use of arm 32 bit processor can handle more application than conventional 8051 8 bit controller.

4.1 About Bluetooth Module
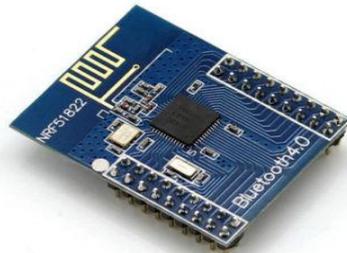
Fig.4 Bluetooth (n RF51822) Development Module.

The module shown in the fig 4 is of Bluetooth which has own GPIO'S port. The same module is based on Nrf51822 –the multiprotocol Bluetooth 4.0 low energy 2.4 GHz wireless application.Through this module the main system get connected to the query which comes from the patient directly.

4.2 About Zigbee Module

Fig .5 ZIGBEES2 Development Modules

The module shown in the fig 5 is ZIGBEE S2 Development module in which the module can get interface with lpc2148 microprocessor. In the complete project 4 Xbee modules are used the other 3 modules are connected to PC for different department in an hospital such as Nurse can get the appointment list of the patient's on which date the patient wants to come . And same information can be delivering to the doctor. In the same project there are priorities assign. Where nurse would get the only the information that is required, doctor can broadcast the message to his patient.

4.3 Liquid Crystal Display

A sixteenx2 fluid precious stone alphanumeric showcase implies that it will show 16 characters for every line and there are a couple of such lines. Amid this LCD each character is shown in 5x7 part grid. This LCD has 2 registers, to be specific, Command and data register i.e. information register. The order register stores the charge headings given to the LCD. A summon is partner degree direction given to LCD to attempt and do a predefined undertaking like introducing it, clearing its screen, setting the marker position, prevailing show and so on the

information register stores the data to be shown on the LCD. The data is that the ASCII worth of the character to be shown on the LCD.
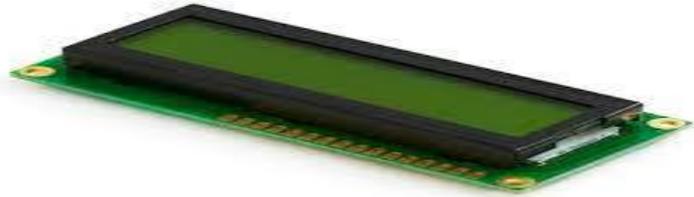
Fig 3 :16x2 lcd display

4.4 Software Design

In this proposed project, we are using LPC2148 microprocessor and need to use the following software equipment to program for it.

1. Keil μ vision 4.

2 Flash Programmer.

The Keil micro Vision is an IDE Embedded c Programming Language. In this IDE, we need to import all the utilities and libraries according of the controller. This IDE is very less difficult and is user friendly way to apply. It consists of all the C/C++ compilers, assemblers and debuggers in it. Here we need to generate a hex file to run the processor. The hex file consists of only binary numbers which is dumped in to the microprocessor.

The flash magic is the programming software. The C/C++ software is written in IDE may be processed into Hex documented i.e. Hex file. By using the same hex file into the microcontroller and perform the task with application.

V. COMPLETE WORKING DESCRIPTION

In this project an mobile app has developed in which the person can fix the date for the appointment and get medicine consulting from the doctor .The complete query list is send to the main system through Bluetooth. At the main system end the query list is updated and depending upon the privileged priority of the message the message is send to the concerned person. The privileged priority list is updated by the patient through some option in the mobile app by just selecting to whom he wants to send the message, For example message can be send to nurse in order to fix appointment and to keep appointment record. Also the patient can directly get connected to his concerned doctor for consulting purpose. Even he can have medicine consulting form the doctor where the prescription can be directly transfer to the pharmacy shop.

VI. RESULT

Thus the complete project is a prototype for the product based system. In this system an attempted is made to make the system complete automatic and most trying to minimize the communication gap between doctor, clinic and pharmacy. The user should feel complete friendly system and easy to use with less interconnection in the mobile app.
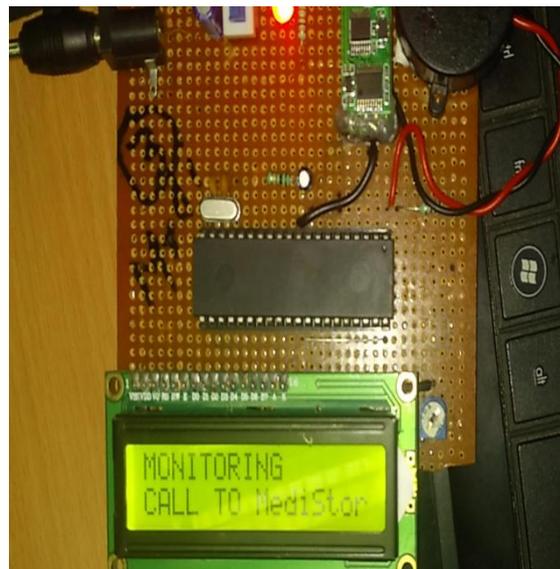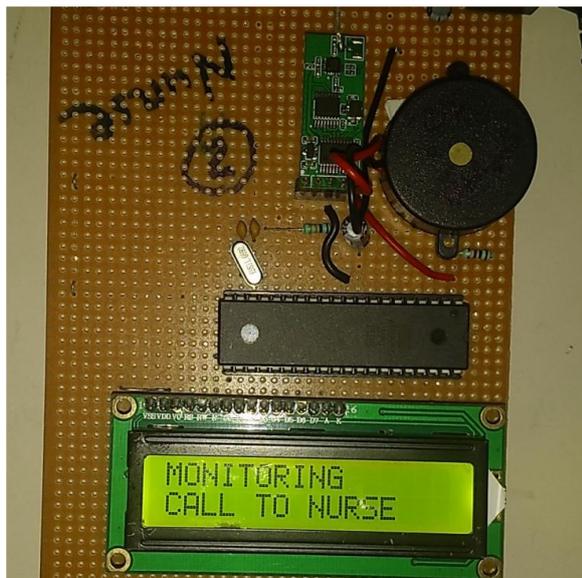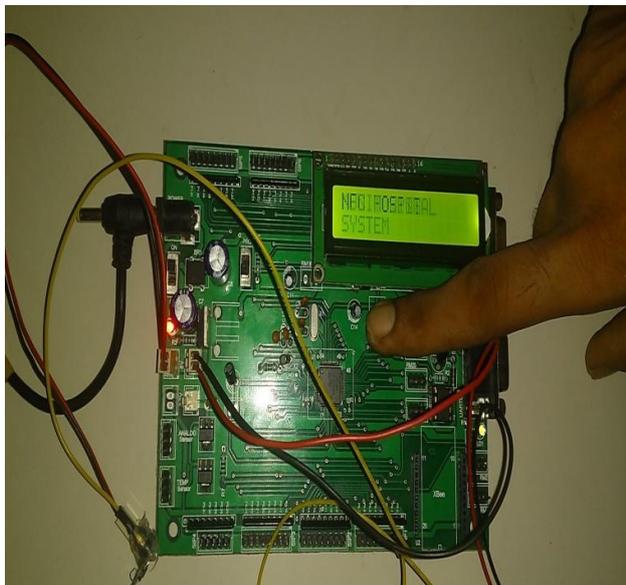
VII. CONCLUSION

The further development can be done in the project is that the complete project can be uploaded on internet where in emergency conditions the patient can directly concerned with the nearby doctor not only the doctor he concerned regularly . Thus improving this project more precisely the person can have back support when he goes out on big tours. Because from his mobile he is connected to his doctor and take doctor advise in harsh conditions.

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