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IOT BASED SMART ATTENDANCE SYSTEM USING GSM

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ABSTRACT

In recent years there have been rise in the number of application based on Radio Frequency Identification system and have been successfully functional to different areas such as transportation, health care, agriculture, and hospitality industry. IOT technology facilities automatic wireless identification using electronic passive and active tags with suitable readers. In this paper an effort is made to solve regular lecture attendance monitoring problem in developing countries using direct GSM/GPRS with IOT technology. The application of IOT to student attendance monitoring as developed and deployed in this paper is capable of eliminating time wastage during manual collection of attendance and an opportunity for the educational administrators to compile the attendance effectively..

I. INTRODUCTION

Internet of Things (IOT) is dynamic global network organization with self configuring capabilities based on standard communication protocols. In IOT physical and virtual "things" have identities physical attributes and virtual personalities and use intelligent interfaces. The physical and virtual things are seamlessly integrated into the information network GSM which shapes an important building block for the IOT. As the roll calls have been done by the kit itself and the teacher just have to press keys accordingly. After finishing that process the whole data will get saved in PIC microcontroller and will be send to main server i.e. administrator officer by GSM with the help of IOT.

II. RELATED WORK:

Before RFID IOT system smart card and bar code are more popular for all purpose like supervising attendance or for monitoring student, employee etc. In this paper we are implementing the system based on GSM/GPRS system for the improvement of old attendance system and and checking system for better results and security of the student.A number of related works exist where applications of GSM technologies to different areas and specifically to the area of academic attendance monitoring problem is reported.

III. ALGORITHM:

1 Total Attendance calculation will be done according to the number of classes attended by the student.
2 SMS will be sent to each parent's mobile.
3 If any student is absent, then that message will be sent to parent.
4

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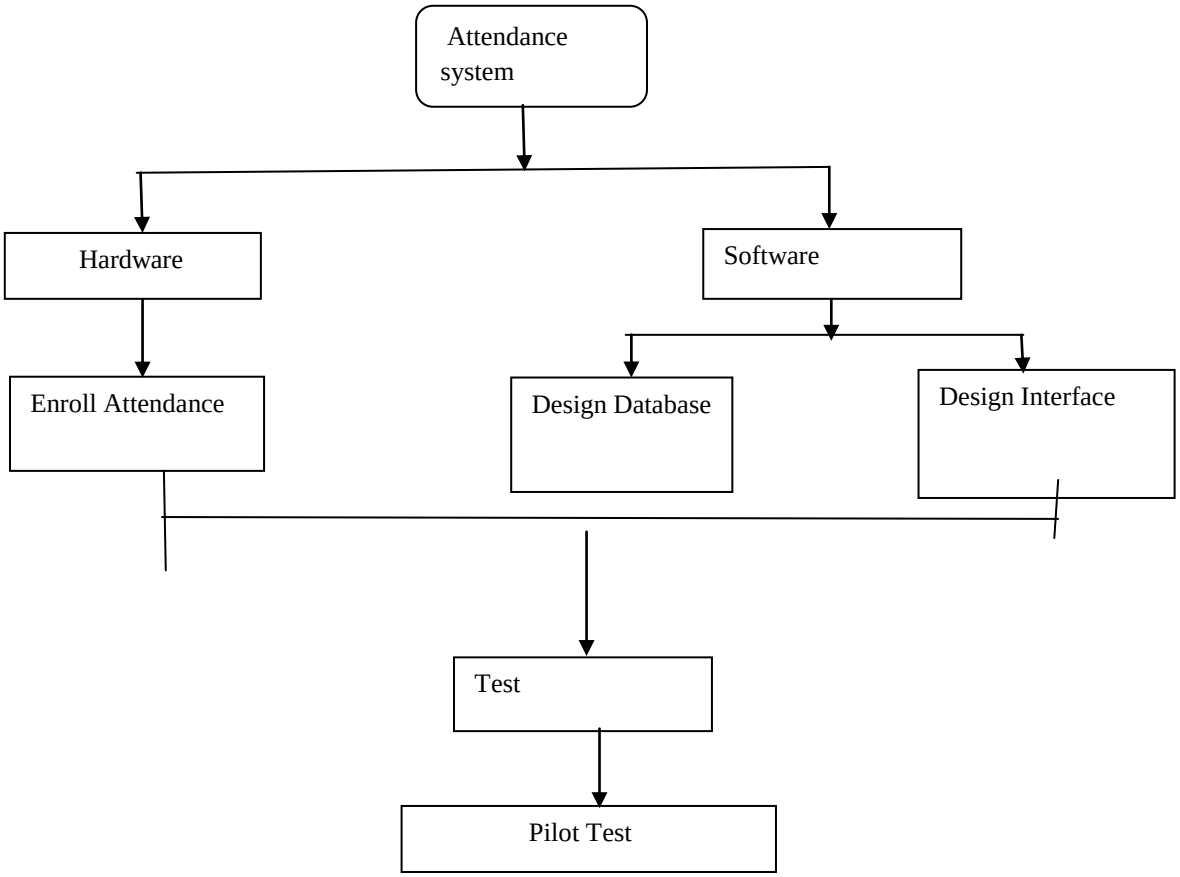

Fig.1. System Module

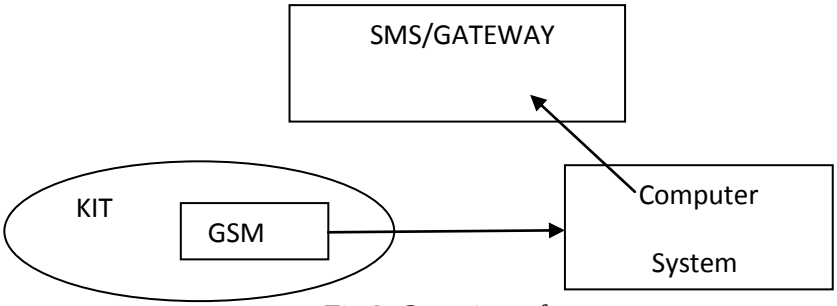

Fig.2. Overview of system

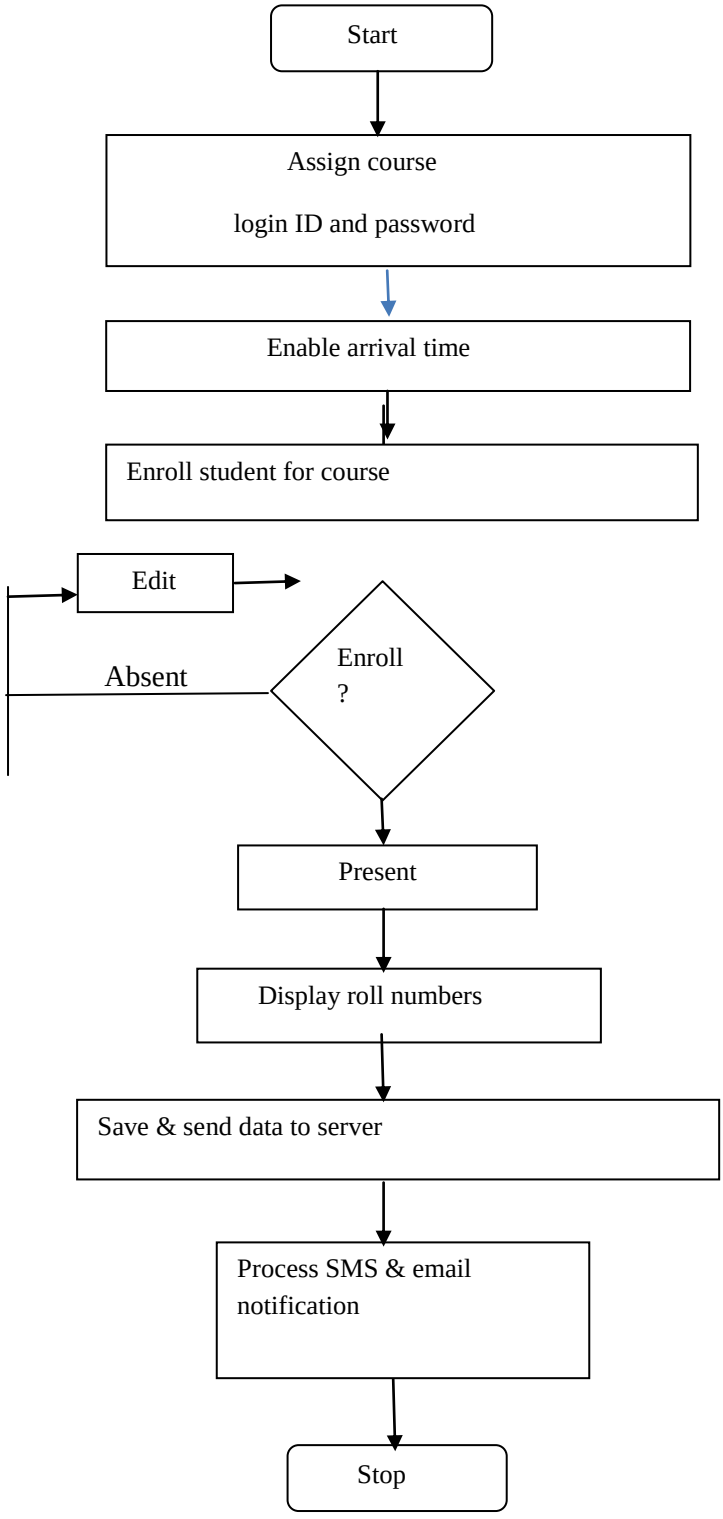

Fig.3. Flow chart of digital attendance register

3.1Software Design Consideration :-

Softwares used for the implementation :-

1. Express PCB for PCB designing.
2. MP lab for programming.
3. CCS for compilation.

3.2 Implementation

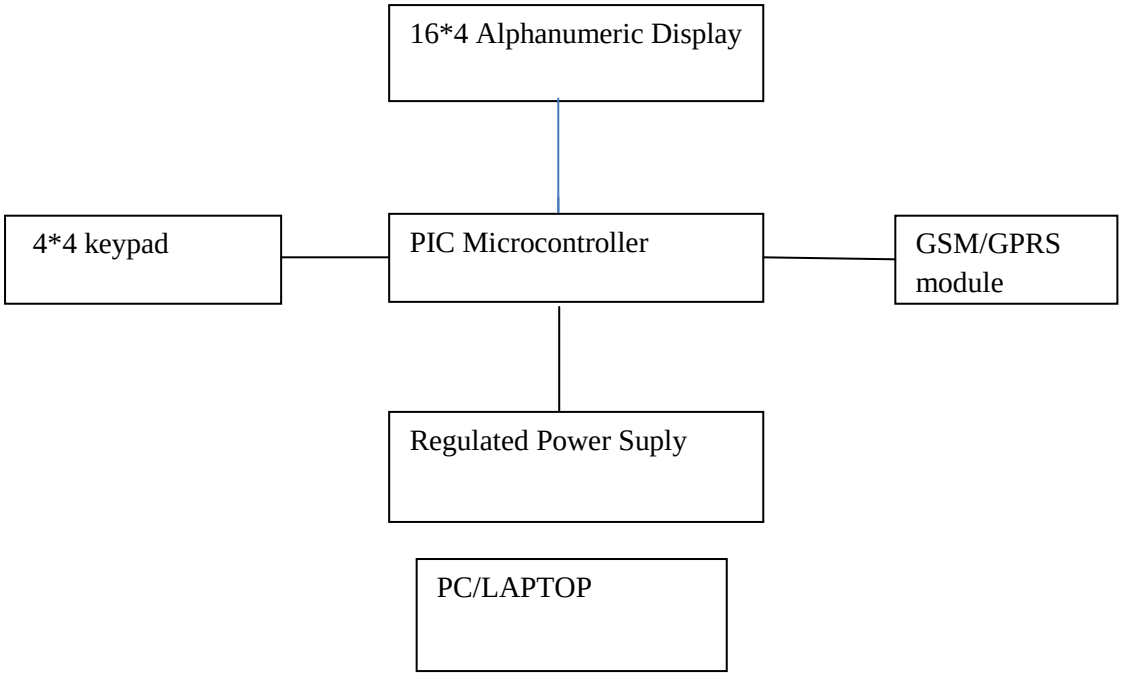

Fig4:Block diagram of Digital attendance register

It contain following building blocks:-

3.2.1. PIC 16F877 Controller:

PIC16F877 is a 40 pin 8 bit CMOS flash microcontroller from microchip. The core architecture is high performance RISC CPU with only 35 single word instruction. It is having 3 clock input as 4,8,20 MHz, Each instruction taken 0.2us when 20 MHz oscillator is used.It is having data and programming memory as 368 byte RAM and 256 byte EEPROM.

3.2.2. GSM :-

GSM is Global system for mobile communication. It provides many features like which provides wide rang of services and facilities both voice and nonvoice that are compatible with those offered by existing networks.To give access to GSM network for mobile subscribe in a country that operates the GSM system.To provide for efficient use of frequency spectrum.To allow for a low cost infrastructure and to keep cost of.

3.3.3. GPRS :-

It includes all positioning system mainly use for finding the particular base station and send data/message to the particular system.

3.3.4. IoT :-

IoT is internet if things is an important topic in technology industry,policy and engineering circles and has brcome headline news in both the specallity press and population media. IoT is dynamic global network organization with self configuring capabilities based on standard and communication protocols.

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3.3.5. 4*4 Keypad Matrix :-

A 4*4 matrix keypad requiring eight I/O ports for interfacing issued as an example. Rows are connect to peripheral I/O pin configured as output.

4*4 keypad matrix features :-

1. Contact debounce
2. Easy to interface
3. Interfaces to any microprocessor or controller

3.3.6. 16*4 Alphanumeric LCD display :-

16*4 means 16 rows and 4 columns. where we can display numeric as well as alphabets. Maximum 16 characters in each line is planned to be used here.Onthisdisplay we are displaying present/absent of student, roll number, time of lecture and also date of particular day.

3.3.7. Regulated power supply :-

Power supply we are using is 5V DC which is convert from 230AC standard by adaptor and then conversation done and given to kit.

Working:

1) Initializing of LCD, login ID and password is enterd.
2) Enrollment of the student.
3) Marking of attemdance as Present and Absent
4) Editing if got missed
5) Pressing OK will save whole data in PIC controller
6) Attendance to be sent to main server
7) SMS sent accordingly

IV. ADVANTAGES

1.This system is fully automated and it does not require any human intervention except setting the initial time setting

2.LCD and PC interface both are provided with GSM based attendance on the spot on LCD or remotely from computer.

3.This system is accurate and can avoid proxy or false attendance.

V. FUTURE DEVELOPMENT

We can voice announcement system to this project so whenever user given attendance then the announcement message like “your attendance has been logged in”.

We can send this through internet to the user so that user can access it remotely via internet.

VI. ACKNOWLRDGEMENT

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VII. CONCLUSION

To overcome the limitations of conventional system, we have developed this system.The proposed system is user friendly, easy, portable due to GSM, deta can be sent to parents. Due to use of IOT the web page can be easily managed by the automated by the authorized person.

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