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Introduction on Smart Led Wireless System for Students Fingerprint Base Attendance

[1]Prathmesh Bobde, [2]Roshni Harode, [3]Vikas Kumar,
[4]Asst. Prof .Reshmi Bhagwat
[1,2,3]Students, Department of Electrical Engineering, Abha Gaikwad Patil College of Engineering, Mohagaon, Nagpur, Maharashtra, India.
[4]Asst. Prof. Reshmi Bhagwat, Dept of Electrical Engineering, Abha Gaikwad-Patil College of Engineering, Mohgaon, Nagpur, Maharashtra, India.

***Abstract**: Smart LED wireless system for student using fingerprint base attendance. This save the time and wasted on calling out names of the students and the attendance is represented on the smart LED notice board. The system will efficiently reduce the workload on teachers for uploading attendance. Saving lots of paper to maintain attendance record. It will efficiently reduce the errors made by the facilities at the time of uploading the attendance in the system.*
***Keywords:** Wireless led, Microcontroller, fingerprint module , Marking the attendance of students ,Software .*

I. Introduction :

The present is the revolutionary time of computer technology. Most of the work depend on the computer work. Now a day's fingerprint attendance is very popular in the school and the collages. It is very easy to take attendance without wastage of time. The attendance is recorded in computer as well as attendance shown in the classroom on the LED notice board. The main profit of the wire- less LED attendance system is to make the attendance of those students which are present in the classroom. It is not possible to make fake attendance. SMART LED WIRELESS SYSTEM are being used in corporate environments. Our device use computer to store the data and verify fingerprints. It can be ported to academic environment with modification.

II. Motivation:

Now a days in every schools and colleges the teacher calling out names during lecture time. It waste the lecture time. To save this time some teachers follow the method of signing on paper which is passed to the class during the lecture time.

Here there is a chance of cheating by the students by putting the signature of absent student. This issue motivate us to design this system.

III. Field Survey And Literature Survey:

In school and colleges and the institutions the student have mark the attendance in every hour. It takes approximately 5 to 10 minutes for marking the attendance of entire class. Then in 42 hours all subjects it takes approximately 7 hours is used for marking attendance. Many organization use "fingerprint attendance system" for making attendance of their employees. Those are computer connected devices in which data base is stored by the employees and this system are fixed at specific location. But situation in a classroom is different. Students cannot come near the device to mark the attendance in classroom

"Kassem et al." developed a attendance system using RFID (Radio Frequency Identification) technology for university application but in this time of devices ,students cannot mark their attendance during the classroom. Also students can cheat this device proxy method. So this type of device also cannot be implemented in the classroom

IV. Detailed Hardware Design :

Main circuit :

A modular design approach is used. Connectors are used to interface different components wherever possible. This helps for better assembly, easy repair etc. It connects transmitter and receiver pin of the module with that of microcontroller. A LED shows the status of finger print authentication. Menu button is used as user input switch. Graphic LED data connectors, control signals connector and power signals connector is interfaced to the microcontroller circuit. The system uses RTC DS1307 for keeping track of time.

i. Microcontroller :

The controller use in the device is .This microcontroller is a low power type The flexible oscillator structure help portable device to save battery charge by allowing microcontroller.

ii. Fingerprint module:

It is very small size it heart of the finger- print attendance system is Fingerprint module .it can support function such as fingerprint addition ,erasure ,verification ,upload and download. The current consumption in the active mode is only 80mA.

iii. Graphic LED:

A 128x64 graphic LED is used as a display in the system. This LED is based on KS0108 controller. Memory: The attendance details are to be stored in external memory. A 1Mbit E2PROM AT24C1024 is used for this purpose. This is interfaced to microcontroller using this protocol.

iv. Buttons and Switches:

The device is using a push button as its main input which is called as Menu button. This can be used to select different options in the device. If the press in menu button is less than 1 sec, cursor will change to next option. If it is more than 1 sec, the highlighted option will be selected. The device also have a power ON button and resets witch which is placed with batteries.6) Status LEDs: The Device is using two LEDs for status indication. A power LED is used to give indication about power status. There is a status LED which would indicate the finger print status.

Device notifications: When the USB is connected to the Computer, it would be notified in system notification area of Windows operating system. The status will be displayed in th

V. Device Notification:

When the LED is connected to the Computer, it would be noticed in system notification area of Windows operating system. The status will be displayed in the GUI also.

Installation and configuration:

The software, Fingerprint Attendance Data Management, is to be installed before using the device. Both device and software is to be congaed after installing software.

i) Software installation:

The first step to use the device is installing Fingerprint Attendance Data Management Software. A Start menu group along with Desktop shortcut would be created along with installation of the software. The software can be uninstalled using the shortcut provided in Start menu.

ii) Congaing the device:

After the installation of soft-ware, connect the device to the computer using the USB cable .Then the HID driver will be automatically installed.

Attendance Marking

Students can mark attendance after faculty selects the batch name. Students can place their finger and attendance would be marked if they haven't marked their attendance already. The status LED would display colors according to the status of the attendance marking. It displays RED for no match, GREEN for fingerprint match and ORANGE for already marked. The attendance marking menu will be displayed until the device is switched of

iii. Attendance Marking :

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VI. Results:

A prototype level implementation of Fingerprint attendance system is completed The device can be handed over to students and they can mark their attendance .The device is tested with students and it worked without any error. Fingerprint Attendance Data Management software is designed and created a setup file for the

installation. It is provided with a help file for installation and configuration .The software is tested and was working perfectly.

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