

SPYGUARD USING RFID

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Abstract— Security plays a very important role in everyone's life. A huge amount is spent on security guards and night watchmen everywhere. But there is no check whether the money is worth the expenses or not. This may come about only because there is no overseer for night guards. This breach encouraged us to work in this area and hence we have come up with "Spyguard using RF-ID" as our academic project in the final year.

Keeping an eye on the night watchmen is very necessary as ignorance here may cause a big loss and it may come up to life. RF-IDs available in the market are generally used in the security systems. Here in our project also we will design a device in which with the help of RF-IDs we can record the way or route of the night watchman and force him to give the duty/round sincerely.

I. INTRODUCTION

Now a days as the security is the important aspect in the field of industry, it is important to monitor the movement of guards at night time. So a new system is proposed. It's called "SPYGUARD USING RF-ID". In this system we can develop one RF Id tag. This tag is given to the guard and using this tag we can monitor the path of the night Watchman. As there was no check on the night watchman, the guard on the duty can easily show irresponsibility and can sleep somewhere. It may result theft, any unpredictable problems like fire etc.

A Existing System

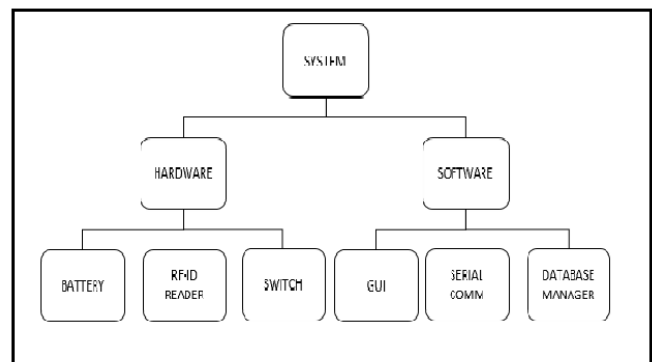
This area remained untouched by the technology so far. Hence there is no automation made, resulting this field without any system. It was mere belief of the people on the night watchman.

B. Drawbacks of Existing system

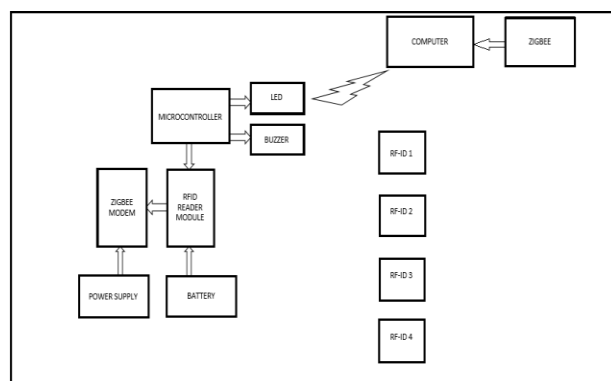
As there was no check on the night watchman, the guard on the duty can easily show irresponsibility and can sleep somewhere. It may result theft, any unpredictable problems like fire etc. We cannot avoid or prevent the uncertain events but a alert watchman can take necessary action immediately to reduce losses or to prevent more damages.

C. PROPOSED SYSTEM

In our proposed system there will be a handheld device given to guard. This system includes RFID reader and Zigbee Modem. Each wall of the campus will have RFID tags installed on it. Each guard will show the receiver device on the RF-ID tag. The receiver device will convey the information to the control room via zigbee communication link. This will be done throughout the day as well as on night. The day, date and time will be recorded which can be checked later in the remote pc. In this way the guard will do his duty sincerely and will not show irresponsibility.



BLOCK DIAGRAM REPRESENTATION



- **Power Supply**
This unit will supply the various voltage requirements of each unit. This will be battery operated.

- **Microcontroller**

This is the main part of our proposed system. It is responsible for driving all the components of the system. It will perform the monitoring and controlling of all the components used in the system.

In short we can say that the complete intelligence of the project resides in the software code embedded in the Microcontroller. The controller used here belongs to the family of 8051. Embedded system is the platform used in our system. +5V DC is needed to run the microcontroller.

- **LCD 16x2**

LCD stands for liquid crystal display. LCD used is 16x2. It will display all the generated information which comes from the controller. It provides interactive user interface.

- **RFID Reader Module**

RFID is abbreviation of Radio Frequency Identification. The job of this module is to read 10 digits ID of the card presented near to its antenna and send them to the connected device using serial link at 9600bps. This module is read only. That means it can be used to only read the card ID. The working frequency is 125 KHz. This can detect card from 10 cm distance and the type of card will be passive.

- **Zigbee Modem**

Zigbee Modem acts as a mediator which helps in communicating devices like embedded system and Zigbee communication system. It has in-built protocol for serial communication. Basically it is used in message-handling between applications on different devices. It describes the logical components and their interface. There is no code associated with it. It is mainly used to provide interoperability between different manufactures. Thus it is an ideal solution for developers who want to integrate Zigbee wireless technology into their design.

- **PC Serial Port Controlling**

Serial Port of PC is also referred as RS232 Port. The connector is of type 9 pin D-Type Male connector. Generally we will use only pin-2 (Rx), pin-3 (Tx) and pin-5 (GND) for any type of communication system.

In the software part we can use any one of the follow

- **Database Manager**

- A database management system (DBMS) consists of software that operates databases, providing storage, access, security, backup and other facilities. Databases are designed to offer an
- organized mechanism for storing, managing and retrieving information. They do so through the use of tables.

- We can use any one of the following software & technology for database managing
- **MS Access 2007** - Access allows us to manage our information in one database file. It is easy to use. It is portable as can be easily copied & paste to any other system and can run without installing the software.
- **MS SQL Server 2000** – it is rather complex at installation part and easy to use. The database developed on it can not be easily copied and paste on another system. Also it requires the software to be installed to use the database files.

D. Features

The Following are the prominent features of the above discussed system...

- RFID based system design,
- Low cost RFID tags so that multiple no of tags can be installed in campus,
- Real time logging,
- Report printing of user time stamp path,
- Handheld device

E. Technology & Programming Languages

As microcontrollers are the core of these days digital circuit design in industry, this system uses it for the centralized operation and digital processing. The technology used here is embedded technology which is the future of today's modern electronics.

The followings are the various Programming Languages & Technologies that are going to be used in the proposed system...

For Embedded System...

- Embedded Technology
- 8051 Family Based Controller,
- Embedded C - Keil Compiler,
- Eagle Software for PCB Designing,

For PC System...

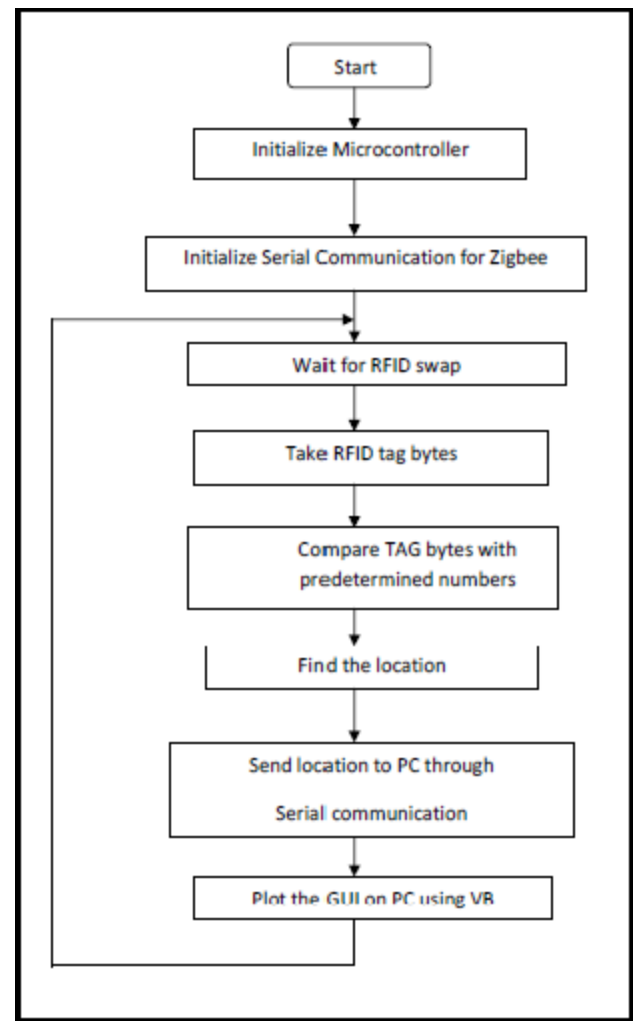
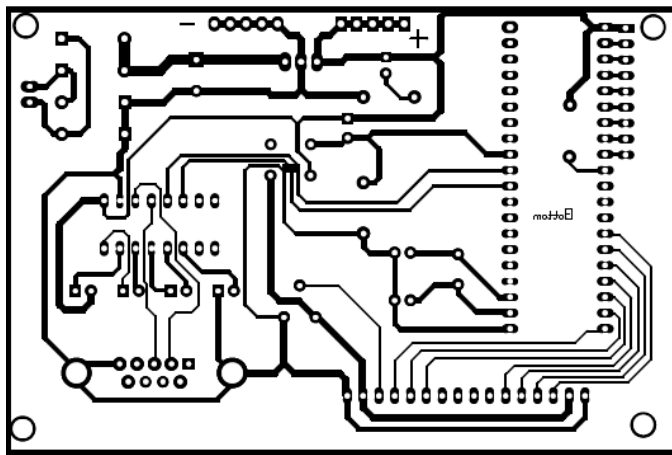
- VB.net 2008 Based Application Software,
- Serial Communication Protocol,
- MSAccess2007 Based Database,
- Crystal Reports,

F. Project Development Methodology or Steps

The following will be development steps so as to achieve the working Prototype Model of the above proposed system...

- Defining the Problem,
- Understanding the Need & Usability in industry and society (Market Analysis),
- Developing Block Diagram,

- Designing Circuits of individual blocks,
- Testing circuits in LAB & Finalizing,
- Developing PCB on PC,
- Getting the PCB printed from market,
- Soldering the components,
- Performing various Basic Experiments to test the PCBs,
- Developing Flowchart for the entire process,
- Writing actual Software Program,
- Compilation & Burning,
- Testing and Debugging,
- Developing Flowchart for PC Side Software,
- Developing Data Flow Diagram,
- Writing actual code.
- Finally Running the system and,
- Documentation.



FLOWCHART

IV. SCOPE & APPLICATIONS

Only the imagination can limit the applications of the above proposed system.

Though the following are some examples...

- Security companies to enhance their services,
- Malls,
- Factories,
- Housing Societies,
- Private Bungalows.

V. CONCLUSION

We will also learn the software development strategies and various programming techniques for PC based applications.

VI. ENHANCEMENTS

A. Limitations

As generally all systems have some limitation, here are some listed for the proposed system.

- Requires Charging of device regularly,
- Presently device is not facilitate with inbuilt memory.

B. Drawbacks

This system has certain drawbacks also as listed...

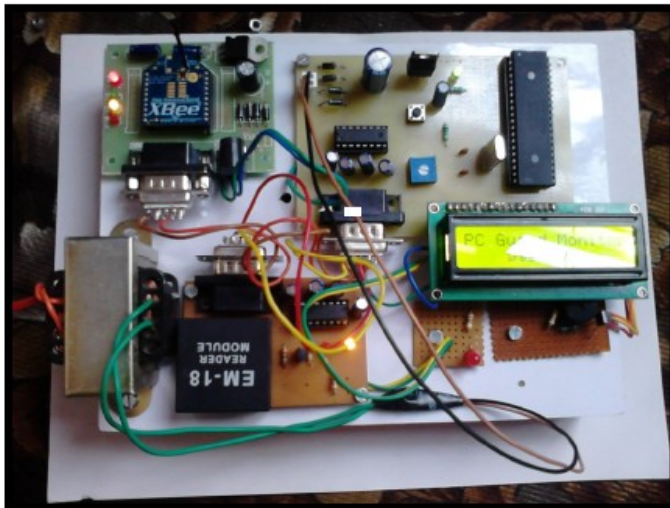
- RFID cards may get corrupted with environment condition and may need to replace,
- This systems is only monitoring system and not controlling.

C. Future Modifications

There is always chance to improve the any system as research & development is an endless process. The following improvements can be done...

- Inbuilt memory can be adopted in this system,
- More reporting features can be added in the system.

FINAL PROJECT



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