***UNIVERSITY OF KARACH***

***DEPARTMENT OF APPLIED PHYSICS***

***B.S 3RD YEAR (6TH SEMESTER)—EVENING***

***Project Proposal:***

* **RFID BASED ATTENDANCE SYSTEM.**
* **RFID BASED SECURITY ACCESS CONTROL SYSTEM.**

***GROUP PARTNERS:***

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**1-RFID BASED ATTENDANCE SYSTEM**

**ABSTRACT**

The main objective of this project is to record the attendance of students using RFID tags. Each student is provided with his/her authorized tag to swipe over the reader to record their attendance.

In classrooms, time is wasted in roll calls as it is done manually. In this proposed system, authorized student is given an RFID tag. This tag contains an integrated in built circuit that is used for storing, processing information through modulating and demodulating of the radio frequency signal that is being transmitted. Thus, the data stored in this card is referred as the identification/attendance of the person.

Once the student places the card in front of the RFID card reader, it reads the data and verifies it with the data stored in the microcontroller from 8051 family. If the data matches, then it displays a message on the LCD confirming the entry of that student else displays a message denying the attendance. The status of a student’s attendance can be retrieved from this system by pressing the status button interfaced to the microcontroller. Hence, a lot of time is saved as all the students attendance is directly stored in the data base.

The project can be further enhanced by adding features like sending an SMS of the daily attendance of students to their parents. It can also be enhanced by using a finger print module in place of RFID module that has certain drawbacks of tags be misused.

**BLOCK DIAGRAM**



**SOFTWARE REQUIREMENTS:**

Keil compiler

Language: Embedded C or Assembly

**HARDWARE REQUIREMENTS:**

8051 series Microcontroller, RFID tags and RFID Reader, LCD, Resistors, Capacitors, Diodes, Transformer, Voltage Regulator, Crystal, switches.

**2-RFID BASED SECURITY ACCESS CONTROL SYSTEM**

**ABSTRACT**

The main objective of this project is to provide security in an organization by allowing only the authorized personnel to access the secure area. The security of any organization is a priority for the authorities. The concern is for the physical property and also for the intellectual property. For this reason only the authorized person with a valid RFID tag is allowed into the secured premises.

This tag contains an integrated circuit that is used for storing and processing information, modulating and demodulating the radio frequency signal that is being transmitted. Thus, once the person shows the RFID tag to the card reader it scans the data present in the tag and compares it with the data present in the microcontroller. When the data matches with that in the microcontroller, the load will be turned ON which is operated by a relay being driven from the output of the microcontroller. If a valid tag is swiped then the system displays a message “AUTHORIZED” else it states “UNAUTHORIZED” and doesn’t allow access. A lamp is used as an indication besides the LCD display.

This project can be further enhanced by interfacing it with GSM technology. Any attempt for unauthorized access can be intimated to the security personnel through an SMS. It can also be interfaced with a finger print module to reduce the drawback of RFID system i.e. exchanging RFID tags.

**BLOCK DIAGRAM**

**HARDWARE REQUIREMENTS:**

**8051 series Microcontroller, RFID reader, RFID tags, Relay, Relay driver IC, Transformer, Diodes, Voltage Regulator, Resistors, Capacitor, LED, Lamp.**

**SOFTWARE REQUIREMENTS:**

**Keil compiler,**

**Language: Embedded C or Assembly.**