Ticket Verification Based on Rfid for Airport

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Abstract:-- Passport book is an identity of a person required travel through airways by changing the details of the person, new passport can be created. Passport verification and identification is a long process. These are 2 main disadvantages of this process In international travel, security is very important. To improve security, passport verification has begun in some countries. Criminals and terrorists travel around world easily with fake document.Now a days on airport at the gate one security person stands for ticket verification. This may increase the faults as man made mistakes can be done. If this system be made automatic verification, these mistakes can be reduced. Here we verify the ticket and person also by using RFID, GSM and keyboard system. Each person has a RFID card, in which information about ticket and the person is stored. When person enters at airport gate he/she has to swipe the card on RFID reader. LCD will display the corresponding message. Microcontroller will read the card details and display info on LCD. Simultaneously GSM will send the 4 digit code on registered mobile number. After this user advised to enter the 4 digit code sent on mobile number. If the code entered is correct, door will open (DC motor will rotate), else buzzer will sound indicating wrong authentication. It will ask again to swipe the card, and process repeats. If this authentication wrong for 3 times, card will be blocked, and can be unblocked only by authorized personnel.

I. INTRODUCTION

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BLOCK DIAGRAM
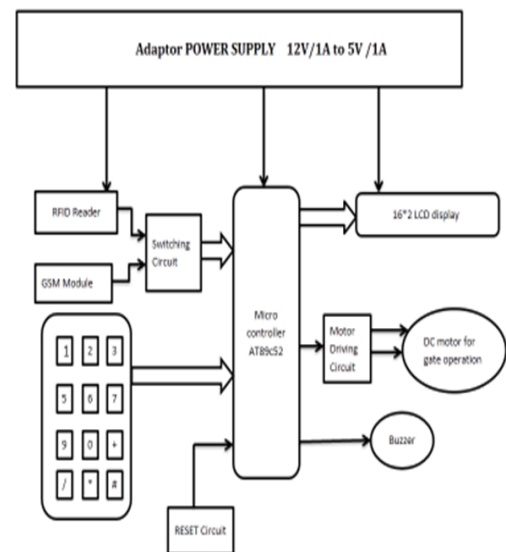
Description:
Power Supply
♦ We used 12V, 1A adaptor.
♦ 12V is been converted to 5V by regulator, 7805.
♦ It is stable, non-fluctuating and shock proof power supply.
♦ It protects from external interferences.
♦ Also available in market and is very chip.
♦ Different current ratings are available in different format.

Micro Controller:
- Simple architecture, easy to understand and program.
- Perfectly suit to our requirement and rigid in nature.
- 8 bit architecture, 40 pin DIP, 4 ports, P0 port as high current sink port.
- 4KBytes ROM, program memory, which is enough for future extension also.
- High speed crystal, 12MHz, operates fast.

LCD Graphics Display:
- We used 16*2 graphics display, having 2 lines of 16 characters each, having no complex operation and easy to connect also, simple commands.
- We used 2 displays, one, is to show school notifications and other is for on road traffic "GO SLOW" indication when school IN and OUT timing is.
- Its bright and clear display to view from long distance.

RFID:
- This is ready to use device, directly plug and play operation.
- Operates on 12V power supply.
- Frequency range is 88MHz to 108MHz.
- Communicates with micro-controller using serial communication UART protocol.
- It only transmit the 12 digit code when card swapped.
- It will not receive any data from micro-controller.

GSM Module:
- Global System for Mobile communication (GSM) module comes in ready to use format.
- It uses frequency range of 900MHz to 1800MHz.
- We use SIM 900A GSM module.
- It uses serial communication, UART protocol.
- It is used to send and receive the messages, by using AT command set.
- This AT command has format like: AT+CGPA="Mobile number".
- Keypad:
- It is 4*4 matrix of switches arranged to make a 16 switches keypad.
- It is used to manually play the recorded messages when needed.

- For future extension we can use it for recording also or typing different messages also.

Buzzer:
- It is 12V device used for indications such as wrong authentication, incorrect 4 digit pin.
- We use driver circuit to connect this to micro-controller.
- This driver circuit includes transistor based circuit.

Features:
- As authentication is digital, man made mistakes will be reduced.
- No fake entry will be allowed in any circumstances.
- LCD display available for displaying messages for user convenience.
- No need to carry hardcopy of ticket as digital ticket is already saved in card.
- Even card is loss, without 4 digit code no one can use this card.
- Even authorized mobile loss, you will get code via email.
- Hence this is safe and secure system.

Future Scope:
- By connecting to the ftp server we can upload or send the data to any web page or to any server.
- For security purpose we can add android device or we can add material verification system in this project.
- Live updates also possible to maintain for more reliable to customers.

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