

# AUTOMATIC TICKET CONTROL SYSTEM

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**Abstract:** *Nowdays, the human life turns to engage to complete with the challenging world, it is not better to them to waste their valuable time in purchasing the ticket standing in a queue. In this research idea, the proposed concept of system is to change the manual traditional ticket system into embedded based ticket system. To make the system as automatic and also to promise the comfort journey in the bus, train etc. we are going for automatic ticket vending system using ARM processer. This system provides overall information related to the passenger. Even normal people also operate the system easily because of the design of machine. The passenger reserved the ticket, automatically seating allotment of the passenger and other details send to the passengers mobile with the help of GSM. Exchanging a ticket from the ticket counter is not always convenient to the passengers due to lack of man force power and as well as proper use of the machine in this system. Automatic process of purchasing ticket will save time, effort, and man power.*

*So for better improvement in transport system with more secured process hereby in this project automatic ticketing real-time system is going to be implemented which is associated with time saving method and also undergone fake note detection technology.*

**Keywords:-** Lpc2138, Bluetooth, App.

## 1. INTRODUCTION:-

Ticket friend solution mainly proposed to overcome the tricky problems in traditional ticketing method like transferring tickets from one person to another, sharing of tickets, to avoid confrontation i.e. mesh between the supervisors and passengers and safer handling of data. Time and money are precious every time we strive to find best way to avoid issues likewise. when it come to travel by the bus without carrying change, this proposed technique need only one identification card.[2] Here we are designing automatic ticketing system in museum using Note recognition system. The security of the whole manual ticketing system is not often guaranteed. Sometimes the passengers have to face the fake note exchange problem which makes the process too much complicated[3]. After the note is recognized then the ticket status will be displayed through an app on the pc connected by Bluetooth system. It is very essential for today's hurried life to use such a technology in malls, museum, and railway booking for time saving. Instead of manually operation there is used note to note conversion system for charging the ticket[5]. The person can also book the tickets by online services, but sometimes the network connections may be down or the services may not be uploaded very often. Though the e-ticketing system process is useful for producing a reduction of the associated economic costs and time intervals, it is not always secured fully and therefore users can be traced and their profiles of usual movements can be created[4]. So for better improvement in transport system with more secured process hereby in this project automatic ticketing real-time system is going to be implemented which is associated with time saving method and also undergone fake note detection technology. Counterfeit currency is a burning question throughout the world. The counterfeiters are becoming harder to track down because of their rapid adoption of and adaptation with highly advanced technology. One of the most effective methods to stop counterfeiting can be the widespread use of counterfeit detection tools/software that are easily available and are efficient in terms of cost, reliability and accuracy[1].

### 1.1 SCOPE OF SYSTEM:-

- For future based research on automatic ticketing system the idea implemented through this project can be widely used.
- In the terminal station(transport system i.e. Rail, Bus) for its easy use, conveniences, time saving process the passengers and as well as rail, metro rail, bus transport system will be benefitted.
- Due to the implement of both security aspects and verification speed achieved through it this system gets renowned worldwide and easily most preferable used system among the people.

### 1.2 OBJECTIVES:-

- For time saving process the visitor can use this technology easily.
- Much more secured and confirmed notification this system is used.

## II. PRAPOSED SYSTEM:-

It is proposed to implement this project at the museum, rail and many others entertainment providing institute level. To make this possible, a UV sensor and IR sensor are used for detecting fake note method and accepting the notes of 50,100 etc. up to 1000 whatever input we can give through coding process. After processing internally the output will be displayed in LCD screen and ticket will be confirmed. Remaining amount can also be returned to the passenger through the note dispensing unit.

## III. BLOCK DIAGRAM:-

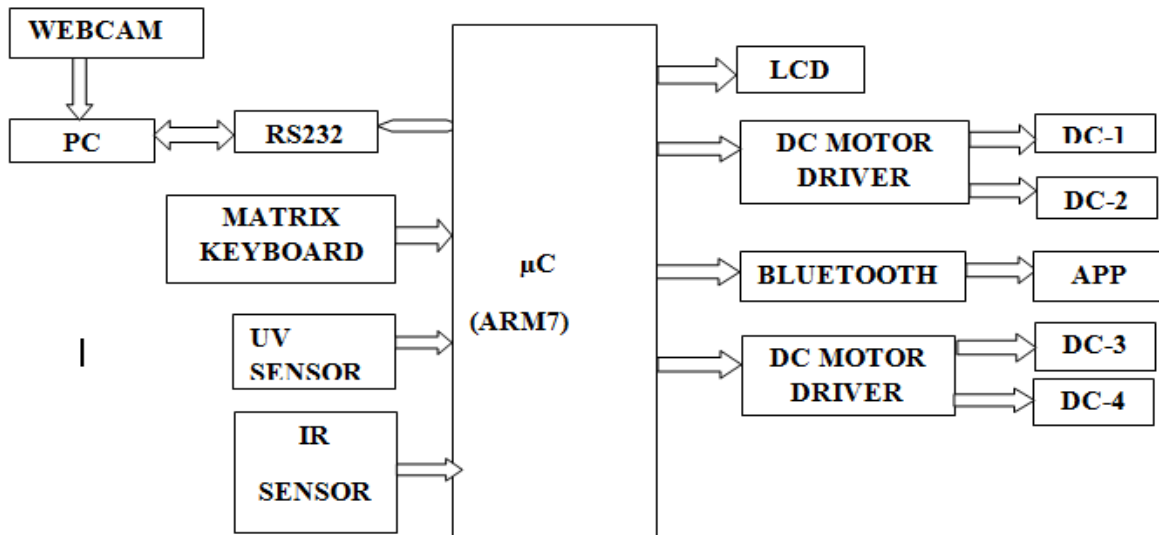


Figure 1.1 Archeitecture of automatic ticket control system

**I. Note Placing Unit:**

It is made up of mechanical relays to accept the notes from the user. It is capable of accepting the notes in multiples of Rs.50. for the ease of process. It is driven by dc motor which takes 12v from the supply and runs at 10 rpm.

3 relays and 2 dc motors are used to accept and identify the no. of notes given by the user. This information is then sent to the microcontroller for further procedure.

**II. Note Dispensing Unit:**

Once the ticket is charged the µC will calculate the remaining amount and return the amount using Note dispensing unit. There will be 3 dc motors to dispense the notes, each working on 12V D.C.supply and running with the speed of 10rpm.

**III. Buzzer:**

Buzzers are used in a system to indicate or to grab the attention regarding an emergency situation occurred. Buzzer acts as a panic horn which indicates the need of instant attention as the condition goes haywire.

**IV. Camera:**

The Rs232 standard is used to interface the computer with the microcontroller. The computer is connected by the web camera for recognition. The MATLAB software window is used.

**V. DC Motor:**

DC motors are used to physically drive the application as per the requirement provided in software. The dc motor works on 12v.To drive a dc motor, we need a dc motor driver called L293D. This dc motor driver is capable of driving 2 dc motors at a time. In order to protect the dc motor from a back EMF generated by the dc motor while changing the direction of rotation, the dc motor driver has an internal protection suit. We can also provide the back EMF protection suit by connecting 4 diode configurations across each dcmotor.

**VI. Keypad:**

Keypad is basically used to provide the input to the microcontroller. The keypad consists of micro switches which are connected to the microcontroller pins in a matrix format. Each key is assigned with the special character or symbol or digit. When user press the key the respective assigned ASCII value of that key is provided to the microcontroller via software.

**VII. IR Sensor:**

It is basically used for collecting the note at the user side. The IR sensor consists of IR transmitter, IR receiver and signal conditioning. If the note is collected properly then the positive output signal is given to the microcontroller.

**VIII. UV Sensor:**

It is basically used for detecting the fake note at the user side. Applying UV fluorescent materials on the note fakeness is detected and the output is given to the microcontroller

**POWER SUPPLY:**

The basic step in the designing of any system is to design the power supply required for that system. The steps involved in the designing of the power supply are as follows,The bridge rectifier and capacitor i/p filter produce an unregulated DC voltage which is applied at the I/P of 7805.As the minimum dropout voltage is 2 for IC 7805, the voltage applied at the input terminal should be at least 7 volts .

C1 (1000 µf / 65v)is the filter capacitor and C2 and C3 (0.1 pf) is to be connect across the regulator to improve the transient response of the regulator.

Assuming the drop out voltage to be 2 volts, the minimum DV voltage across the capacitor C1 should be equal to 7volts (at least).

**Power supply design of the Project:**

The average voltage at the output of a bridge rectifier capacitor filter combination is given by

$$V_{in}(DC) = V_m - I_{dc} / 4 f C1 \dots\dots\dots(1)$$

Where , $V_m = \sqrt{2} V_s$  and  $V_s =$  rms secondary voltage

Assuming  $I_{dc}$  to be equal to max.load current, say 1000mA

Most of the circuit deal with 2 supplies

5v → For LCD , µC, Other IC's

12V → Relay, DC motor, Valve

Keeping above consideration in mind

We assume the I/P voltage (Unregulated) should be 12V so that all the components can work.

$V_{in} (dc) = 12V$

$$V_m = V_{in} * \sqrt{2} \dots\dots\dots(2)$$

$$V_m = 12 * 1.414 = 17V$$

For most of the circuits, the load current is between 750ma to 1000ma, So we consider

Load current = 1000ma

Freq. = 50Hz

So, our formula is

$$V_{in}(DC) = V_m - I_{dc} / 4 f C_1 \dots\dots\dots(3)$$

$$12v = 17v - 1000ma / 4 * 50 Hz * C_1$$

$$C_1 = 1 / 5 * 4 * 50$$

$$C_1 = 1000 \mu f$$

Hence the RMS secondary Voltage

$$V_{rms} = 17 / \sqrt{2} \dots\dots\dots(4)$$

$$= 17 / \sqrt{2}$$

$$= 17 / 1.41421$$

$$= 12v$$

So, we can select a 15v AC (More than 12v) for transformer secondary Voltage.

In our system most of the components used require 5 V as operating voltage such as micro controller, MAX 232, MCT2E etc. The total current, which our circuit sinks from the power supply, is not more than 100 mA. We have used Regulator IC 7805 that gives output voltage of 5V. The minimum input voltage require for the 7805 is near about 7 v. Therefore we have used the transformer with the voltage rating 230v-10v and current rating 500 to 1000 mA. The output of the transformer is 15 V AC. This Ac voltage is converted into 15 V DC by Bridge rectifier circuit.

**The reasons for choosing the bridge rectifier are**

- a) The TUF is increased to 0.812 as compared the full wave rectifier.
- b) The PIV across each diode is the peak voltage across the load =  $V_m$ , not  $2V_m$  as in the two diode rectifier

Output of the bridge rectifier is not pure DC and contains some AC some AC ripples in it. To remove these ripples we have used capacitive filter, which smoothens the rippled out put that we apply to 7805 regulators IC that gives 5V DC. We preferred to choose capacitor filters since it is cost effective, readily available and not too bulky.

- 1) Determine the total current that the system sinks from the supply.
- 2) Determine the voltage rating required for the different components.

**Advantages:**

- User-friendly i.e. can be handled easily.
- time saving process
- security is guaranteed
- accurate also
- Use of UV sensor as a fate note detection sensor can eliminate the problems of fake note exchange.
- Ticket is always available and confirmed also.
- Man power is not required.
- real time process.

**Disadvantages:**

- For booking the ticket the user has to be present there for face to face handling of the machine which becomes sometimes not possible by the user.
- Initially the cost is high,
- Sometimes the confirmation message cannot be shown due to server problem.
- Power consumption is high.

**IV. OVERVIEW OF SYSTEM:**

- Now-a-days everyone has achieved a busier life to cope with this modern lifestyle and it is not really preferable to a person to get a ticket through manually system after a long queue. Purchasing of a ticket from ticket counter earlier has become too much time-consuming beyond the patience of the passenger.
- Most of the times in the workplace most of the ticket counters remain closed in the office time due to server down, lack of man-force or problems in the machines. So this inconvenience adds so many complexities in everybody's life.
- The passengers have to undergo the problems at the time of purchasing of the ticket of fewer amounts for the exchange of remaining in the means of coins.
- Sometimes fake note exchange has become too much problematic for the passengers.
- Hence an idea of implementing automatic ticketing system hopefully can become beneficial to the passengers for its easy and time saving use and they can get rid of being cheated through fake note exchange.

**V. CONCLUSION:**

In this project, we are going to illuminate the problems based on long time consumption for purchasing the ticket by implementing automatic machine process. Though the passengers can face some problems due to its new service hopefully we can say with increase its popularity it can become most convenient process for its secured method, easy handling and moreover fake note detection method

## REFERENCE

- [1] Zahid Ahmed, Sabina Yasmin, Md Nahidul Islam, Raihan Uddin Ahmed "Image Processing Based Feature Extraction of Bangladeshi Banknotes" IEEE 2014, 978-1-4799-6399-7.
- [2] Md. Foisal Mahedi Hasan, Golam Tangim, Md. Kafiul Islam, Md. Rezwanul Haque Khandokar, Arif Ul Alam, " RFID-based Ticketing for Public Transport System: Perspective Megacity Dhaka".
- [3] Archana Bade, Deepali Aher, Prof. Smitha Kulkarni, " NOTE TO COIN EXCHANGER USING IMAGE PROCESSING", International Journal on Recent and Innovation Trends in Computing and Communication ISSN: 2277- 4804 Volume: 1 Issue: 3, MAR 2013.
- [4] Sanjana, Manoj Diwakar, Anand Sharma "An Automated Recognition of Fake or Destroyed Indian Currency Notes in Machine Vision", International Journal of Computer Science & Management Studies, Vol. 12, Issue 02, April 2012.
- [5] Rubeena Mirza, Vinti Nanda, "Design and Implementation of Indian Paper Currency Authentication System Based on Feature Extraction by Edge Based Segmentation Using Sobel Operator", International Journal of Engineering Research and Development Volume 3, Issue 2 August 2012.
- [6] Rubeena Mirza, Vinti Nanda, " Paper Currency Verification System Based on Characteristic Extraction Using Image Processing", International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249 – 8958, Volume-1, Issue-3, February 2012 .
- [7] Ben Ammar Hatem Hamam Habib , " Bus Management System Using RFID In WSN", European and Mediterranean Conference on Information Systems 2010 (EMCIS2010) April 12-13 2009, Abu Dhabi, UAE.

