



M.KUMARASAMY
COLLEGE OF ENGINEERING

NAAC Accredited Autonomous Institution

Approved by AICTE & Affiliated to Anna University
ISO 9001:2015 & ISO 14001:2015 Certified Institution

Thalavapalayam, Karur – 639 113.



AUTOMATIC TICKET DISTRIBUTER

A MINOR PROJECT - II REPORT

Submitted by

GUHANRAP.K	(927621BEC056)
HARIKUMARESAN.S	(927621BEC060)
JAISURYA.S	(927621BEC065)
MAHENDRAN.V	(927621BEC306)

BACHELOR OF ENGINEERING

in

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

M.KUMARASAMY COLLEGE OF ENGINEERING

(Autonomous)

KARUR – 639 113

APR-2023

**M.KUMARASAMY COLLEGE OF ENGINEERING,
KARUR**

BONAFIDE CERTIFICATE

Certified that this **18ECP104L - Minor Project II** report “**AUTOMATIC TICKET DISTRIBUTER**” is the bonafide work of “**GUHANRAJ.R.K (927621BEC056), HARIKUMARESAN.S(927621BEC060), JAISURYA.S(927621BEC065), MAHENDRAN(927621BEC306)**” who carried out the project work under my supervision in the academic year **2022-2023 - EVEN**.

SIGNATURE

**Dr.S.PALANIVEL RAJAN, M.E., M.B.A., Ph.D.,
D.Litt (USA),
HEAD OF THE DEPARTMENT,
Professor,
Department of Electronics and
Communication Engineering,
M.Kumarasamy College of Engineering,
Thalavapalayam,
Karur-639113.**

SIGNATURE

**Mr.P.T.SIVAGURUNATHAN,
M.E.,M.B.A,(Ph.D),
SUPERVISOR,
Assistant Professor,
Department of Electronics and
Communication Engineering,
M.Kumarasamy College of Engineering,
Thalavapalayam,
Karur-639113.**

This Minor project-III report has been submitted for the **18ECP104L – Minor Project-II** Review held at M. Kumarasamy College of Engineering, Karur on

PROJECT COORDINATOR

INSTITUTION VISION AND MISSION

Vision

To emerge as a leader among the top institutions in the field of technical education.

Mission

M1: Produce smart technocrats with empirical knowledge who can surmount the global challenges.

M2: Create a diverse, fully -engaged, learner -centric campus environment to provide quality education to the students.

M3: Maintain mutually beneficial partnerships with our alumni, industry and professional associations

DEPARTMENT VISION, MISSION, PEO, PO AND PSO

Vision

To empower the Electronics and Communication Engineering students with emerging technologies, professionalism, innovative research and social responsibility.

Mission

M1: Attain the academic excellence through innovative teaching learning process, research areas & laboratories and Consultancy projects.

M2: Inculcate the students in problem solving and lifelong learning ability.

M3: Provide entrepreneurial skills and leadership qualities.

M4: Render the technical knowledge and skills of faculty members.

Program Educational Objectives

- PEO1: Core Competence:** Graduates will have a successful career in academia or industry associated with Electronics and Communication Engineering
- PEO2: Professionalism:** Graduates will provide feasible solutions for the challenging problems through comprehensive research and innovation in the allied areas of Electronics and Communication Engineering.
- PEO3: Lifelong Learning:** Graduates will contribute to the social needs through lifelong learning, practicing professional ethics and leadership quality

Program Outcomes

- PO 1: Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO 2: Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO 3: Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO 4: Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO 5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO 6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO 7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO 9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO 10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO 11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO 12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes

PSO1: Applying knowledge in various areas, like Electronics, Communications, Signal processing, VLSI, Embedded systems etc., in the design and implementation of Engineering application.

PSO2: Able to solve complex problems in Electronics and Communication Engineering with analytical and managerial skills either independently or in team using latest hardware and software tools to fulfil the industrial expectations.

Abstract	Matching with POs, PSOs
Arduino, LCD, Sim Module, RFID Reader/Writer	PO1,PO3,PO6,PO7,PO9,PSO1

ACKNOWLEDGEMENT

Our sincere thanks to **Thiru.M.Kumarasamy, Chairman** and **Dr.K.Ramakrishnan, Secretary of M.Kumarasamy College of Engineering** for providing extraordinary infrastructure, which helped us to complete this project in time.

It is a great privilege for us to express our gratitude to **Dr.B.S.Murugan., B.Tech., M.Tech., Ph.D., Principal** for providing us right ambiance to carry out this project work.

We would like to thank **Dr.S.Palanivel Rajan, M.E., M.B.A., Ph.D., D.Litt (USA)., Professor and Head, Department of Electronics and Communication Engineering** for his unwavering moral support and constant encouragement towards the completion of this project work.

We offer our wholehearted thanks to our **Project Supervisor, Mr.P.T.SIVAGURUNATHAN, M.E, M.B.A.,(Ph.D)., Assistant professor,** Department of Electronics and Communication Engineering for his precious guidance, tremendous supervision, kind cooperation, valuable suggestions and support rendered in making our project to be successful.

We would like to thank our **Minor Project Co-ordinator, Dr.E.Dinesh, M.E., Ph.D., Associate Professor,** Department of Electronics and Communication Engineering for his kind cooperation and culminating in the successful completion of this project work. We are glad to thank all the Faculty Members of the Department of Electronics and Communication Engineering for extending a warm helping hand and valuable suggestions throughout the project. Words are boundless to thank our Parents and Friends for their motivation to complete this project successfully.

ABSTRACT

Abstract-Bus transportation is one of the main transportation systems in India. The passengers are increasing day by day, so it is important to make their journey more comfortable and easy. Therefore, we are introducing a system called E-Ticket which helps the passengers to get the ticket in one swipe. The system contains components like Arduino, LCD, Sim Module, RFID Reader/Writer. When the passengers swipe the card while they are enter and exit the location is read and the distance will be calculated and the amount is directly paid through net-banking. The information acknowledged to the passengers to their mobile phone and receipt. The system is also used to calculate the number of passengers inside the bus.

Keywords: Arduino, LCD, Sim Module, RFID Reader/Writer.

TABLE OF CONTENTS

CHAPTER No.	CONTENTS	PAGE No.
1	Institution Vision and Mission	iii
2	Department Vision and Mission	iii
3	Department PEOs, POs and PSOs	iv
4	Abstract	viii
5	List of Tables	xi
6	List of Figures	xii
7	List of Abbreviations	xiii
8	INTRODUCTION	1
9	LITERATURE SURVEY	1
10	BLOCK DIAGRAM	2
11	CIRCUIT DIAGRAM	3
12	COMPONENTS REQUIRED	4
13	PROJECT METHODOLOGY	7
14	SOURCE CODE	8
15	REFERENCES	13

LIST OF FIGURES

FIGURE No.	TITLE	PAGE No.
1	Block diagram	2
2	Schematic diagram	3
3	Arduino UNO	3
4	RFID TAG	4
5	RFID READER	5
6	LCD DISPLAY(16x2)	6
7	Sim module	6
8	Experiment process	7

LIST OF ABBREVIATIONS

S.No	Abbreviation	Expansion
1	LCD	Liquid Crystal Display
2	IR	Infrared
3	USB	Universal Serial Bus
4	I/O	Input/Output
5	UART	Universal Asynchronous Receive And Transfe
6	IDE	Integrated Development Environment
7	TX	Transfer
8	RX	Receive
9	PWM	Pulse Width Modulation
10	LED	Light Emitting Diode
11	DC	Direct Current

CHAPTER 1

INTRODUCTION

The system is designed for optimum energy usage and is very beneficial in case if we want to count the number of people going to attend a particular event or any function thereby helps in collecting data by counting the number of people. This is done by simply incrementing (also decrementing) the counter.

At this time the system also counts the number of people present and increments a counter on each arrival, this count is displayed on a LCD display. This system can be used in public places like malls, marriage halls, in an office, college, etc.. we can know the exact no. of people inside those places accurately in an efficient manner.

LITERATURE REVIEW:-

Before the advent of electronic people counters manual people counters were used. These required a store employee to stand near the entrance of the store and click on a counting device each time a person entered the store. This was considered to be inaccurate due to the high level of human error, as well as being an inefficient usage of human resource. Pressure sensitive sensors that count walk-ins based on the number of footsteps on a pressure sensitive platform or mat were used as well.

In our system we are totally digitalizing the system using microcontroller.

TOOLS USED:-

- ARDUINO NANO
- RFID TAG
- RFID READER
- SIM MODULE
- LCD DISPLAY

BLOCK DIAGRAM:-

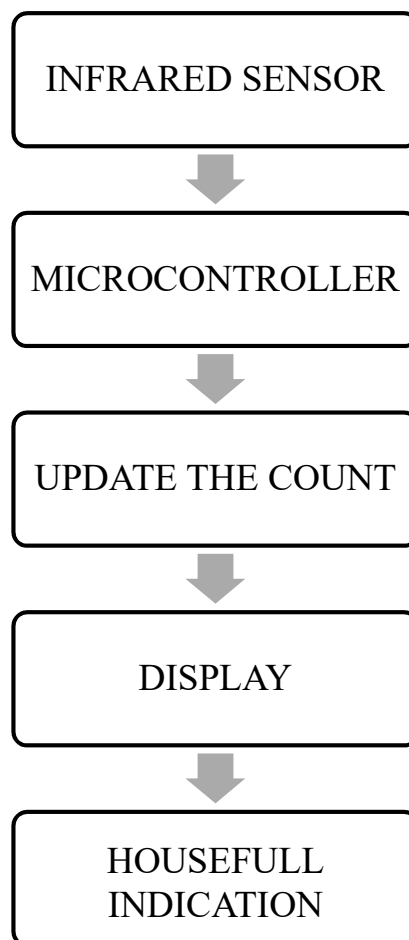


Figure 1 :Block diagram

CIRCUIT DIAGRAM:-

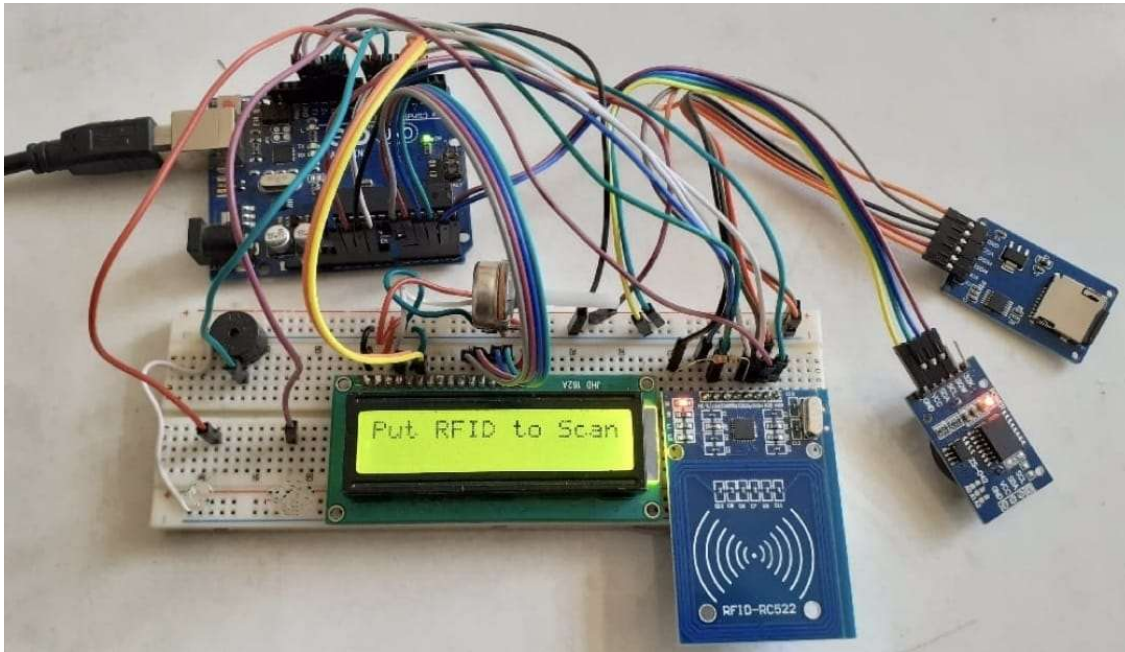


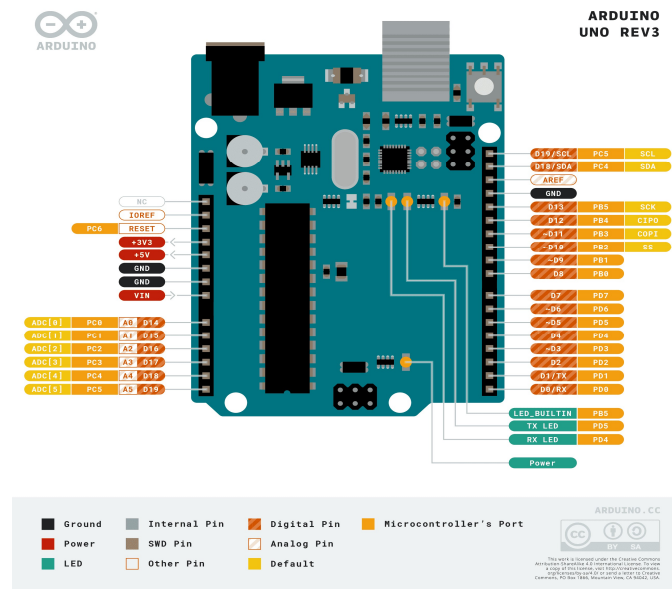
Figure 2 :Schematic diagram

COMPONENTS REQUIRED:-

MICROCONTROLLER :

ARDUINO UNO:

The Arduino Uno is an open-source microcontroller board based on the Microchip ATmega328P microcontroller. The board has 14 digital I/O pins (six capable of PWM output), 6 analog I/O pins, and is programmable with the Arduino IDE (Integrated Development Environment), via a type B USB cable. It can be powered by a USB cable or a barrel connector that accepts voltages between 7 and 20 volts, such as a rectangular 9-volt battery. It is similar to the Arduino Nano.



RFID READER:

The reader is a device that has one or more antennas that emit radio waves and receive signals back from the RFID tag. Tags, which use radio waves to communicate their identity and other information to nearby readers, can be passive or active. Passive RFID tags are powered by the reader and do not have a battery



Figure 5:RFID READER

LCD DISPLAY:

This is an LCD Display designed for E-blocks. It is a 16 character, 2-line alphanumeric LCD display connected to a single 9-way D-type connector. This allows the device to be connected to most E-Block I/O ports.

Specifications :

- Operating Voltage: 4.7V to 5.3V.
- Can display (16x2) 32 Alphanumeric Characters.
- Custom Characters Support.
- Works in both 8-bit and 4-bit Mode.

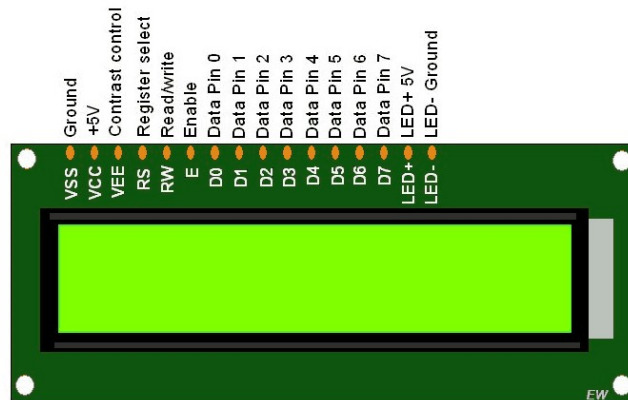


Figure 6 : LCD DISPLAY(16x2)

Sim Module:

The reader is a device that has one or more antennas that emit radio waves and receive signals back from the RFID tag. Tags, which use radio waves to communicate their identity and other information to nearby readers, can be passive or active. Passive RFID tags are powered by the reader and do not have a battery.



Figure 7:SIM MODULE

EXPERIMENT PROCESS:

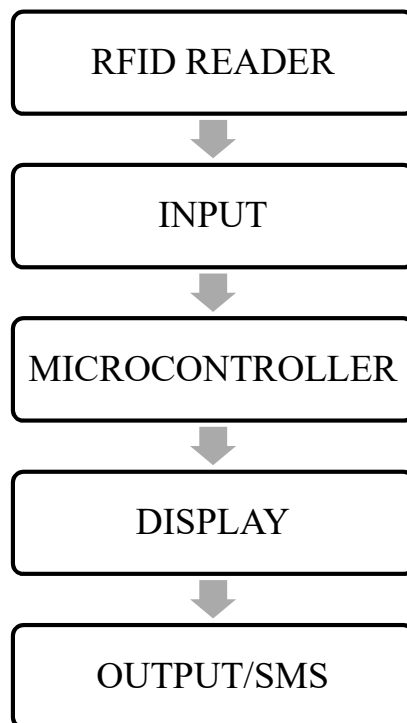


Figure 8: Block Diagram

In this project, we have designed RFID RC522 Based Attendance System Using Arduino with Data Logger. MFRC522 RFID Reader is a very simple yet effective module. It is an RFID module and is used for scanning RFID cards. It's a new technology and is expanding day by day. Nowadays it is extensively used in offices where employees have issued an RFID card and their attendance is marked when they touch their card to the RFID reader. We have seen it in many movies that when someone places one's card over some machine then the door opens or closes. In short, its a new emerging technology which is quite useful.

In this project, we will make RFID MFRC522 based Time Attendance System Using Arduino Board. When you swipe an RFID tag next to the RFID reader, it saves the user UID and time in an SD card. It also shows if you are late or in time accordingly to a preset hour and minute. For this, we are interfacing the MFRC522 RFID SPI module with Arduino. We are also interfacing SD Card Module as a Datalogger where the data is saved in text format. Similarly, RTC Module DS3231 or DS1307 is used to store time information.

SOURCE CODE:

```
#include <LiquidCrystal_I2C.h>
```

```
#include <LiquidCrystal_I2C.h>
```

```
#include <Wire.h>
```

```
#include <SoftwareSerial.h>
```

```

SoftwareSerial mySerial(1,0);

LiquidCrystal_I2C lcd(0x27,16,2);

void setup() {

    Serial.begin(9600);

    mySerial.begin(9600);

    lcd.init();

    lcd.backlight();

    lcd.setCursor(1,0);

    lcd.print("welcome2eticket");

    lcd.setCursor(2,1);

    lcd.print("place card");

    Serial.print("PLace the card");

}

char rx_byte = 0;

char v;

int i,j=3;

void loop() {

    if (Serial.available() > 0) {

        // is a character available?

```

```

rx_byte = Serial.read();    // get the character

// check if a number was received

if ((rx_byte >= '0') && (rx_byte <= '9'))

{

    lcd.setCursor(1,0);


    Serial.println("Number received: ");

    Serial.println(rx_byte);

    lcd.setCursor(0,0);

    lcd.print("Your_id Verified");

    delay(5000);

    lcd.setCursor(0,0);

    lcd.print("Enter_Your_1,2,3");

    while(1){

        lcd.setCursor(2,1);

        lcd.print("karur-RS12");

        delay(5000);

        lcd.setCursor(0,1);

        lcd.print("CHERAN_SCHL_RS8");

```

```
delay(5000);

lcd.setCursor(0,1);

lcd.print("MKCE_collegeRs12");//

delay(5000);

break;

}
```

```
//lcd.setCursor(0,0);
```

```
//lcd.print("Enter_Your_1,2,3");
```

```
v = Serial.read();
```

```
if ((v>= '0') && (v <= '3'))
```

```
{
```

```
switch (v){
```

```
case 1:
```

```
lcd.setCursor(0,0);
```

```
lcd.print("plz_SMS");
```

```
lcd.setCursor(2,1);
```

```
lcd.print("karur-RS12");
```

```
mySerial.println("AT+CMGF=1"); // text mode on

delay(1000);

mySerial.println("AT+CMGS=\"+919080398501\"\\r");

delay(1000);

mySerial.println("you ticket id is 202341");

delay(100);

mySerial.println((char)26);

delay(1000);

break;

case 2:

    lcd.setCursor(0,0);

    lcd.print("plz_SMS");

    lcd.setCursor(0,1);

    lcd.print("CHERAN_SCHL_RS8");

    mySerial.println("AT+CMGF=1"); // text mode on

    delay(1000);

    mySerial.println("AT+CMGS=\"+919080398501\"\\r");

    delay(1000);

    mySerial.println("you ticket id is 202342");

    delay(100);
```

```
    mySerial.println((char)26);

    delay(1000);

    break;

case 3:

    lcd.setCursor(0,0);

    lcd.print("plz_SMS");

    lcd.setCursor(0,1);

    lcd.print("MKCE_collegeRs12");

    mySerial.println("AT+CMGF=1"); // text mode on

    delay(1000);

    mySerial.println("AT+CMGS=\"+919080398501\"\\r");

    delay(1000);

    mySerial.println("you ticket id is 202343");

    delay(100);

    mySerial.println((char)26);

    delay(1000);//

    break;

}}

}}
```


CONCLUSION:

In this paper we have explained the digital system of distributing the tickets in the public transport. Using this system in public transports like buses, trains, metros, etc., we can easily provide the ticket to the passenger in an efficient manner and make the journey more comfortable and easy.

REFERENCES

- [1] "Arduino UNO for beginners - Projects, Programming and Parts". makerspaces.com. 7 February 2017. Retrieved 4 February 2018.
- [2] "RFID Inventory Tracking". CONTROLTEK. February 28, 2014. Archived from the original on May 16, 2021. Retrieved May 12, 2022.
- [3] Automatic Identification and Data Collection (AIDC) Archived May 5, 2016, at the Wayback Machine
- [4] "Official Publication of the International Card Manufacturers Association February 2017 Volume 27 No1" (PDF). Retrieved 28 May 2017.
- [5] "LCD Image Persistence". Fujitsu technical support. Fujitsu. Archived from the original on April 23, 2012. Retrieved December 11, 2011.
- [6] Ibrahim, Dogan (August 22, 2012). Using LEDs, LCDs and GLCDs in Microcontroller Projects. John Wiley & Sons. ISBN 978-1-118-36103-0.
- [7] <https://www.iata.org/en/training/subject-areas/fares-ticketing-courses>.

[8] Lowry, James. "how to connect systems" (PDF). Women's Enterprise Centre. Retrieved 21 August 2017.

[9] "Automatic passenger counting systems for public transport". on September 27, 2016. Retrieved 17 August 2017.

[10] Marsan, Jeremy. "How To Determine Foot Traffic & Use Data To Pick A Business Location". Fit Small Business. Retrieved 18 August 2017.

OUTCOME



AUTOMATIC TICKET DISTRIBUTER

ABSTRACT:

Bus transportation is one of the main transportation systems in India. The passengers are increasing day by day, so it is important to make their journey more comfortable and easy. Therefore, we are introducing a system called E-Ticket which helps the passengers to get the ticket in one swipe. The system contains components like Arduino, LCD, Sim Module, RFID Reader/Writer. When the passengers swipe the card while they are enter and exit the location is read and the distance will be calculated and the amount is directly paid through net-banking. The information acknowledged to the passengers to their mobile phone and receipt. The system is also used to calculate the number of passengers inside the bus.

Indexed Terms- Arduino, LCD, Sim Module, RFID Reader/Writer.

SUBMITTED BY:

JAISURYA.S (927621BEC065)

HARIKUMARESAN.S (927621BEC060)

GUHANRAJ.P.K (927621BEC056)

MAHENDRAN .V (927621BEC306)

Guided by:

Mr.P.T.SIVAGURUNATHAN

(Assistant professor)



M.KUMARASAMY COLLEGE OF ENGINEERING

NAAC Accredited Autonomous Institution

Approved by AICTE & Affiliated to Anna University
ISO 9001:2015 & ISO 14001:2015 Certified Institution

Thalavapalayam, Karur-639 113, Tamilnadu.



ICSPCS 2023

BEST PAPER AWARD

This is to certify that Dr./Mr./Ms./Mrs. JAI SURYA S of

M.KUMARASAMY COLLEGE OF ENGINEERING has presented

a paper titled AUTOMATIC TICKET DISTRIBUTER

is conferred as

the BEST PAPER in DST-SERB Sponsored Second International Conference on "Signal Processing and Communication Systems" Organized by the Department of Electronics and Communication Engineering on 07th March 2023 of our Institution.

Organizing Chair

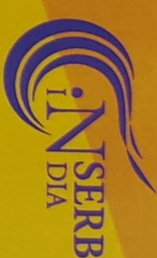
Dr.S.Palanivel Rajan
HoD / ECE



M.KUMARASAMY COLLEGE OF ENGINEERING

NAAC Accredited Autonomous Institution

Approved by AICTE & Affiliated to Anna University
ISO 9001:2015 & ISO 14001:2015 Certified Institution
Thalavapalayam, Karur-639 113, Tamilnadu.



ICSPCS 2023

CERTIFICATE OF PARTICIPATION

This is to certify that Dr./Mr./Ms./Mrs. JABISURYA S of

M. KUMARASAMY COLLEGE OF ENGINEERING has presented

a paper titled AUTOMATIC TICKET DISTRIBUTER

_____ in _____

DST-SERB Sponsored **Second International Conference** on "**Signal Processing and Communication**

Systems" Organized by the Department of Electronics and Communication Engineering on

07th March 2023 of our Institution.

Organizing Chair

Dr.S.Palanivel Rajan
HoD / ECE



M.K.UMARASAMY COLLEGE OF ENGINEERING

NAAC Accredited Autonomous Institution

Approved by AICTE & Affiliated to Anna University

ISO 9001:2015 & ISO 14001:2015 Certified Institution

Thalavapalayam, Karur-639 113, Tamilnadu.



ICSPCS 2023

CERTIFICATE OF PARTICIPATION

This is to certify that Dr./Mr./Ms./Mrs. HARIKUMARESAN S of

M. KUMARASAMY COLLEGE OF ENGINEERING has presented

a paper titled AUTOMATIC TICKET DISTRIBUTER in

_____ in

DST-SERB Sponsored Second International Conference on "Signal Processing and Communication

Systems" Organized by the Department of Electronics and Communication Engineering on

07th March 2023 of our Institution.

Organizing Chair

Dr.S.Palanivel Rajan
HoD / ECE



M.K.UMARASAMY COLLEGE OF ENGINEERING

MAAC Accredited Autonomous Institution

Approved by AICTE & Affiliated to Anna University
ISO 9001:2015 & ISO 14001:2015 Certified Institution

Thalavapalayam, Karur-639 113, Tamilnadu.



ICSPCS 2023

CERTIFICATE OF PARTICIPATION

This is to certify that Dr./Mr./Ms./Mrs. SUBHANKRAT P K of M. KUMARASAMY COLLEGE OF ENGINEERING has presented a paper titled AUTOMATIC TICKET DISTRIBUTER in _____ DST-SERB Sponsored Second International Conference on "Signal Processing and Communication Systems" Organized by the Department of Electronics and Communication Engineering on 07th March 2023 of our Institution.

Organizing Chair

Dr.S.Palanivel Rajan
HOD / ECE