SMART BUS OPTIMIZING PUBLIC TRANSPORT

IBM Naan Mudhalvan-Group2
Internet Of Things(IOT)

Kingston Engineering college

College code-5113

By

S. pavithra - naan mudalvan ID:au511321106019 ,
Email: pavithrasundervadivel04@gmail.com

R .Vijaya bharathi - naan mudalvan ID:au511321106026 ,
Email:Vijayabharathi152003@gmail.com

T. Madhu mitha - naan mudalvan ID: autle-06ece ,
Email: madhumithausha2002@gmail.com

S.Vaideeswari - naan mudalvan ID: autle-01ece,
Email: vaishusaravanan1315@gmail.com

S.Priya Dharshini - Naan mudalavan Id : autle-05ece,
Email: priyadharshinis07092000@gmail.com

RFID BASED TICKETING SYSTEM

The Public transport system is a major source of income in developing countries like India. So Government Earns lot of revenue from the ticketing But, this public transport system faces several problems. The conductor will face various problems in issuing the tickets. But, this new system will provide the tickets automatically and deduct the fare for the distance travelled from the passenger's account. It is also used for passenger's identification. RFID has been an emerging technology in recent years. RFID technology can be effectively employed in number of applications due to its penchant for efficiency. As for its application, it's been a widespread tool for both tracking the transit transports. A fundamental system of RFID consists of two primary components: The reader circuit and tag, details of which are discussed later. The main idea behind this project is to collect the fare automatically using the RFID technology and GSM modem. RFID TAG holds information about passengers, the information is about the passenger is contact number and name. RFID READER used to reads a RFID TAG and with the help of MICROCONTROLLER programs are declared in secure manner to get a ticket. Tickets which contain information about the source and destinations and price of the distance travelled. With the help of GSM modem ticket is downloaded or displayed on mobile phone

SOURCE CODE

```
//include the RFID libs
#include <SPI.h>
#include <MFRC522.h>
//include the LCD lib
#include <LiquidCrystal.h>


//declear the reset and SDA pins of RFID
#define SS_PIN 10
#define RST_PIN 9
// Create MFRC522 instance.
MFRC522 mfrc522(SS_PIN, RST_PIN);   // Create MFRC522 instance.
//declear what LCD pins u are sending data
LiquidCrystal lcd(3, 2, 6, 4, 7, 5);
 tring pass1 = "CHIBUEZE";
String acct1 = "6A 2D 67 07";
String pass2 = "SMART";
String acct2 = "77 1F 73 63";
int balance1 = 1000;
int balance2 = 1000;
int rate = 200;
void setup()
{
  Serial.begin(9600);
  // Initiate  SPI bus
```

```
SPI.begin();
// Initiate MFRC522
mfrc522.PCD_Init();
//begin the LCD
lcd.begin(16, 4);
//state your actuator pins
pinMode(A0, OUTPUT);
pinMode(A1, OUTPUT);
pinMode(A2, OUTPUT);
 //display a welcome note
lcd.setCursor(0, 0);
lcd.print("WELCOME CHIBUEZE ");
 delay(4000);
 lcd.setCursor(0, 0);
 lcd.print("   BUS TICKET       ");
   lcd.setCursor(0, 1);
 lcd.print(" PAYMENT SYSTEM  ");
  delay(2000);
   lcd.clear();
    //mfrc522.PCD_Init(); // Init MFRC522
    lcd.setCursor(0, 2);
 lcd.print("                    ");
 lcd.setCursor(0, 3);
 lcd.print("                    ");
  }
 void unregisted(){
  tone(A0, 1000);
delay(500);
noTone(Ao);
```

```
delay(500);
tone(A0, 1000);
delay(500);
noTone(A0);
delay(500);
tone(A0, 1000);
delay(500);
noTone(A0);
delay(500);
    lcd.setCursor(0, 0);
        lcd.print(" UNREGISTERED            ");
        delay(2000);
        lcd.setCursor(0, 1);
        lcd.print("PLS GET A VALID CARD");
            for (int positionCounter = 0; positionCounter < 43; positionCounter++) {
    // scroll one position left:
    lcd.scrollDisplayLeft();
        // wait a bit:
    delay(150);
  }
    //lcd.clear();
}
void loop() {
  //turn off the actuators
  digitalWrite(A0, LOW);
  analogWrite(A1, 0);
  analogWrite(A2, 0);
      lcd.setCursor(0, 0);
  lcd.print("Bus Fare is #");
```

```
lcd.println(rate);
 lcd.println("     ");
 lcd.setCursor(0, 1);
 lcd.print("  Swipe To Pay     ");
   // Look for new cards
 if ( ! mfrc522.PICC_IsNewCardPresent())
 {
   return;
 }
 // Select one of the cards
 if ( ! mfrc522.PICC_ReadCardSerial())
 {
   return;
 }
 //Show UID on serial monitor
 Serial.print("UID tag :");
 String content= "";
 byte letter;
 for (byte i = 0; i < mfrc522.uid.size; i++)
 {
    Serial.print(mfrc522.uid.uidByte[i] < 0x10 ? " 0" : " ");
    Serial.print(mfrc522.uid.uidByte[i], HEX);
    content.concat(String(mfrc522.uid.uidByte[i] < 0x10 ? " 0" : " "));
    content.concat(String(mfrc522.uid.uidByte[i], HEX));
 }
 Serial.println();
 Serial.print("Message : ");
 content.toUpperCase();
 //this is where u put the UID of the card that you want to give access
```

```
if (content.substring(1) == "6A 2D 67 07") {
    analogWrite(A2, 255);
     delay(250);
     analogWrite(A2, 0);
      delay(250);
     analogWrite(A2, 255);
      if (balance1 >= rate){
         balance1 -= rate;
   lcd.setCursor(0, 0);
         lcd.print("   Hi CHIBUEZE   ");
         lcd.setCursor(0, 1);
         lcd.print("__Payment O.K__      ");
         }
        else{
         lcd.setCursor(0, 0);
         lcd.print(" Sorry CHIBUEZE   ");
         lcd.setCursor(0, 1);
         lcd.print("Insuficient Fund");
           }
         delay(4000);
         lcd.setCursor(0, 1);
         lcd.print("_Balance is #");
         lcd.println(balance1);
         lcd.println(".      .");
         delay(4000);
        return;
       }
 if (content.substring(1) == "77 1F 73 63") {
    analogWrite(A2, 255);
```

```
delay(250);
analogWrite(A2, 0);
 delay(250);
analogWrite(A2, 255);
 if (balance2 >= rate){
    balance2 -= rate;
    lcd.setCursor(0, 0);
    lcd.print("    Hi SMART    ");
    lcd.setCursor(0, 1);
    lcd.print("__Payment O.K__     ");
     }
    else{
    lcd.setCursor(0, 0);
    lcd.print("   Sorry SMART   ");
    lcd.setCursor(0, 1);
    lcd.print("Insuficient Fund");
     }
    delay(4000);
    lcd.setCursor(0, 1);
    lcd.print("_Balance is #");
    lcd.println(balance2);
    lcd.println(".     .");
    delay(4000);
   return;
  }
   }
```

```
else{
 lcd.clear();
 analogWrite(A1, 255);
 delay(250);
 analogWrite(A1, 0);
  delay(250);
 analogWrite(A1, 255);
unregisted();

}
lcd.clear();
}
```