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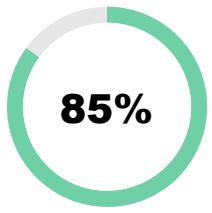

Unique

Total Words:	**674**
Total Characters:	**6395**
Plagiarized Sentences:	**1.95**
Unique Sentences:	**11.05 (85%)**

Content Checked for Plagiarism

Attendance tracking system using RFID sensor
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Dissertation submitted in partial fulfillment of the requirements for the degree of
BACHELOR OF ENGINEERING
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
PSG COLLEGE OF TECHNOLOGY
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1. INTRODUCTION:
RFID that stands for Radio Frequency Identification is a wireless system that is composed of two components,
* Tags
* Readers
The reader is a device that is capable of emitting and receiving radio waves using its antenna Tags when brought near the reader emit radio waves in order to communicate the unique ID present inside it to the reader.
Radio-frequency identification (RFID) generates electromagnetic fields that identify and track tags attached to tags automatically. Unlike a barcode, the tag does not need to be within the line of sight of the reader, so it may be embedded in the tracked object.
RFID attendance system can be used to mark attendance at schools, colleges and work places. Students and workers can mark their attendance by placing their RFID card in front of the RFID reader.
2. PROBLEM STATEMENT:
A RFID based attendance tracking system by interfacing the RFID sensor(RC522) with Arduino UNO. Once the RFID data is read, it is displayed on the serial port of Arduino IDE. With the help of python code the serial data is stored in the phpMyAdmin database.
The marked attendance can be viewed using a web application developed using php, HTML and CSS. The user can view the attendance
* By date
* By student roll no
3. COMPONENTS REQUIRED:
* Arduino UNO
* RFID reader
* RFID tag
* Breadboard
* Jumper wire

4. SCHEMATIC DIAGRAM:

Arduino
RFID-RC522
SDA
10
SCK
13
MOSI
11
MISO
12
GND
GND
RST
9
3.3V
3.3V

5. CODE:
5.1. Attendance.ino:

```
#include //include the SPI bus library
#include //include the RFID reader library
#include

#define SS_PIN 10 //slave select pin
#define RST_PIN 9 //reset pin
#define No_Of_Card 7


MFRC522 rfid(SS_PIN,RST_PIN); //instantiate a MFRC522 reader object
MFRC522::MIFARE_Key key; //create a MIFARE_Key struct named 'key' to hold card information
byte id[No_Of_Card][4]={
{51,143,132,174},
{67,195,242,11},
{185,206,89,136},
{105,86,132,135},
{233,30,69,135},
{217,185,113,135},
{89,233,103,136}
};
byte id_temp[3][3];
byte i;
int j=0;

void setup() {
Serial.begin(9600);

SPI.begin(); //initialise the SPI bus
rfid.PCD_Init();
for(byte i=0;i<6;i++)
{
key.keyByte[i]=0xFF;
}
}
//------------------------------------------------------------------------
```

```
/* Infinite Loop */
void loop()
{int m=0;
if(!rfid.PICC_IsNewCardPresent())//look for new cards
return;
if(!rfid.PICC_ReadCardSerial())//select one of the cards
return;
for(i=0;i<4;i++)
{
id_temp[0][i]=rfid.uid.uidByte[i];
delay(50);
//Serial.print(rfid.uid.uidByte[i]);
//Serial.print(" ");
}
Serial.println("Card detected:");
for(i=0;i {
if(id[i][0]==id_temp[0][0])
{
if(id[i][1]==id_temp[0][1])
{
if(id[i][2]==id_temp[0][2])
{
if(id[i][3]==id_temp[0][3])
{

for(int s=0;s<4;s++)
{
Serial.print(rfid.uid.uidByte[s]);

}
Serial.print(" ");
Sending_To_db();
j=0;

rfid.PICC_HaltA(); rfid.PCD_StopCrypto1(); return;
}
}
}
}
}
else
{j++;
if(j==No_Of_Card)
{
Serial.println("Card detected:");
for(int s=0;s<4;s++)
{
Serial.print(rfid.uid.uidByte[s]);
}
Serial.print(" ");
Sending_To_db();
j=0;
}
}
}

// Halt PICC
rfid.PICC_HaltA();
```

```
// Stop encryption on PCD
rfid.PCD_StopCrypto1();
}

void Sending_To_db()
{
if(j!=No_Of_Card)
{
Serial.print('1');
Serial.print(" ");
}
else
{
Serial.print('0');
Serial.print(" ");
}
}
```

5.2. Rfid_attendance.py:

```
import serial
import MySQLdb
import time

#establish connection to MySQL.
dbConn = MySQLdb.connect("localhost","root","","student_attendance") or die ("could not connect to
database")
#open a cursor to the database
cursor = dbConn.cursor()

device = 'COM3'
try:
print("Trying...",device)
arduino = serial.Serial(device, 9600)
except:
print("Failed to connect on",device)
while True:

try:
data=arduino.readline()
print(data)
pieces=data.split()

try:
if(pieces[1][0]!=100):
cursor=dbConn.cursor()
cursor.execute("""INSERT INTO attendance_details (ID,Member_ID,allowed_members) VALUES
(NULL,%s,%s)""", (pieces[0],pieces[1]))
dbConn.commit()
cursor.close()
data=arduino.readline()
except MySQLdb.IntegrityError:
print("failed to insert data")
finally:
cursor.close()
except:
print("Processing")
```

6. SNAPSHOTS OF OUTPUT:

6.1. CONNECTION:

6.2. SERIAL PORT:

6.3. WEB APPLICATION:

View by date:

View by student roll no:

7. CHALLENGES FACED:

* The process of debugging the arduino code was quite challenging.

8. CONTRIBUTION OF TEAM MEMBERS:

Team Members
Contribution
Harini.S(19Z317)
Worked on the interfacing of RFID sensor with arduino
Jayasree.B.S(19Z322)
Worked on the development of web application to display the attendance.
Nivedha.K(19Z336)
Worked on the storing of serial data in the database using python
Selva Keerthana.B.G(19Z346)
Worked on the development of web application to display the attendance.

9. REFERENCES:

[1] https://www.youtube.com/watch?v=aUHDtCRmVIo&t=4s

[2] https://create.arduino.cc/projecthub/embedotronics-technologies/attendance-system-using-arduino-and-rfid-with-python-3b69c8

[3] https://www.instructables.com/Attendance-System-by-Sending-RFID-Data-to-MySQL-Se/

[4] https://www.w3schools.com/php/
10.PLAGIARISM REPORT:

ZHICHEN XU A dissertation submitted in partial fulfillment of ...

by Z XU · 2001 · Cited by 103 — We wish to stress that, although we use techniques originally developed for verification of correctness, we are not trying to prove either total or partial ...

https://research.cs.wisc.edu/wpis/papers/xu_thesis.pdf

17%

Radio-frequency identification - Wikipedia

Unlike a barcode, the tag does not need to be within the line of sight of the reader, so it may be embedded in the tracked object.

https://en.wikipedia.org/wiki/Radio-frequency_identification

100%