**EXECUTION OF CODE**

**SOFTWARE USED -**

1. Arduino ide
2. XAMPP server
3. PYTHON 2.7
4. PYSERIAL

**HARDWARE REQUIRED -**

1. Arduino Uno
2. RFID RC522 scanner
3. GPS Ublox neo 6m
4. 20-25 jumper cables
5. Laptop for database
6. 2 L.E.D , 2 Resistors

**STEPS OF EXECUTION -**

1. Start the XAMPP control panel.
2. In the control panel, start the Apache as well as the Mysql module.
3. Open any local browser.
4. Search for localhost and then select phpmyadmin option.
5. Select new database option and create 3 new tables in the database.
6. Connect the arduino to the laptop.
7. Copy the code, compile and upload the code into the arduino.
8. Choose the correct baud rate and open the serial monitor.
9. Open the python 2.7 ide.
10. Install the pyserial version for python2.7.
11. This will help connect the arduino output to the python and then connect the database to the python.
12. Copy the code and run the python module.
13. The Script will connect the output of the Serial monitor with the input of the database.
14. The python will prompt the user to connect tthe card and present the output on the screen.
15. Connect the Tag, this will transfer the data in the tag to the database.
16. Open the mysql page and click on Refresh, to refresh the data in the database.
17. Write any query to get user defined data.

**CODE -**

**RFID ARDUINO CODE**

#include <SPI.h>

#include<MFRC522.h>

#include <Ethernet.h>

#define card 3

MFRC522 rfid(10,9);

MFRC522::MIFARE\_Key k;

byte arr[card][4]={

{147,232,113,12},

{151,94,80,84},

{199,124,138,98}

};

byte t[3][3];

byte a;

int b=0;

int red = 7;

int blue = 6;

int buzzer = 8;

void setup() {

Serial.begin(9600);

pinMode(blue,OUTPUT);

pinMode(red,OUTPUT);

pinMode(buzzer,OUTPUT);

Serial.println("please wait");

SPI.begin();

rfid.PCD\_Init();

for(byte a=0;a<6;a++)

{

}

Serial.println("a Card is required - ");

}

void loop()

{int n=0;

if(!rfid.PICC\_IsNewCardPresent())

return;

if(!rfid.PICC\_ReadCardSerial())

return;

for(a=0;a<4;a++)

{

t[0][a]=rfid.uid.uidByte[a];

}

for(a=0;a<card;a++)

{

if(arr[a][0]==t[0][0])

{

if(arr[a][1]==t[0][1])

{

if(arr[a][2]==t[0][2])

{

if(arr[a][3]==t[0][3])

{

Serial.println("Card detected:");

for(int c=0;c<4;c++)

{

Serial.print(rfid.uid.uidByte[c]);

}

digitalWrite(red,HIGH);

digitalWrite(buzzer,HIGH);

delay(1000);

digitalWrite(buzzer,LOW);

digitalWrite(red,LOW);

send();

b=0;

rfid.PICC\_HaltA();

rfid.PCD\_StopCrypto1();

return;

}}}}

else

{b++;

if(b==card)

{

Serial.println("Card has been connected:");

for(int c=0;c<4;c++)

{

Serial.print(rfid.uid.uidByte[c]);

}

digitalWrite(blue,HIGH);

delay(2000);

digitalWrite(blue,LOW);

Serial.print(" ");

send();

b=0;

}

}

}

rfid.PICC\_HaltA();

rfid.PCD\_StopCrypto1();

}

void send()

{

if(b!=card)

{

Serial.print("Stolen");

}

else

{

Serial.print("Not\_Stolen");

}

}

**GPS ARDUINO CODE**

#include <TinyGPS++.h>

#include <SoftwareSerial.h>

static const int RXPin = 4, TXPin = 5;

static const uint32\_t GPSBaud = 9600;

TinyGPSPlus gps; // Creating TinyGPS++ object

SoftwareSerial ss(TXPin,RXPin); // Making the serial connection

void setup()

{

Serial.begin(9600);

ss.begin(GPSBaud);

}

void loop()

{

while (ss.available() > 0)

if (gps.encode(ss.read()))

displayInfo();

if (millis() > 5000 && gps.charsProcessed() < 10)

{

Serial.println(F("No GPS detected: check wiring."));

while(true);

}

}

//To show Location

void displayInfo()

{

Serial.println("Current Location: ");

if (gps.location.isValid())

{

Serial.print("Latitude: ");

Serial.println(gps.location.lat(), 6);

Serial.print("Longitude: ");

Serial.println(gps.location.lng(), 6);

}

else

{

Serial.println(F("INVALID"));

}

//To show Date

Serial.print("Date: ");

if (gps.date.isValid())

{

Serial.print(gps.date.day());

Serial.print("/");

Serial.print(gps.date.month());

Serial.print("/");

Serial.println(gps.date.year());

}

else

{

Serial.println("INVALID");

}

//To show time

Serial.print("Time: ");

if (gps.time.isValid())

{

if(gps.time.minute() <= 29)

{

Serial.print(gps.time.hour() + 5);

Serial.print(":");

Serial.print(gps.time.minute() + 30 );

Serial.print(":");

Serial.println(gps.time.second());

}

else

{

Serial.print(gps.time.hour() +6);

Serial.print(":");

Serial.print(gps.time.minute() - 30 );

Serial.print(":");

Serial.println(gps.time.second());

}

}

else

{

Serial.println("INVALID");

}

Serial.println("----------------------------------");

delay(5000);

}

**PYTHON SCRIPT**

import serial

import MySQLdb

import time

#Connection to the database.

dbConn = MySQLdb.connect("localhost","root","","rfiddatabase") or die ("could not connect to database")

#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:

time.sleep(1)

try:

data=arduino.readline()

print data

pieces=data.split(" ")

try:

cursor=dbConn.cursor()

cursor.execute("""INSERT INTO intersection1 (ID,INTERSECTION\_ADDRESS,RFID\_NUMBER,STATUS,NEAREST\_POLICE) VALUES (NULL,%s,%s,%s,%s)""", ("sec - 47 ",pieces[0],pieces[1],"9566117389"))

dbConn.commit()

cursor.close()

except MySQLdb.IntegrityError:

print "failed to insert data"

finally:

cursor.close()

except:

print "Processing"