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DESCRIPTION:

PPT PRESENTATION ON THE PROJECTS DONE

PROJECT :1
“CONTROLLING A ROBOT USING BLUETOOTH”

OBJECTIVE

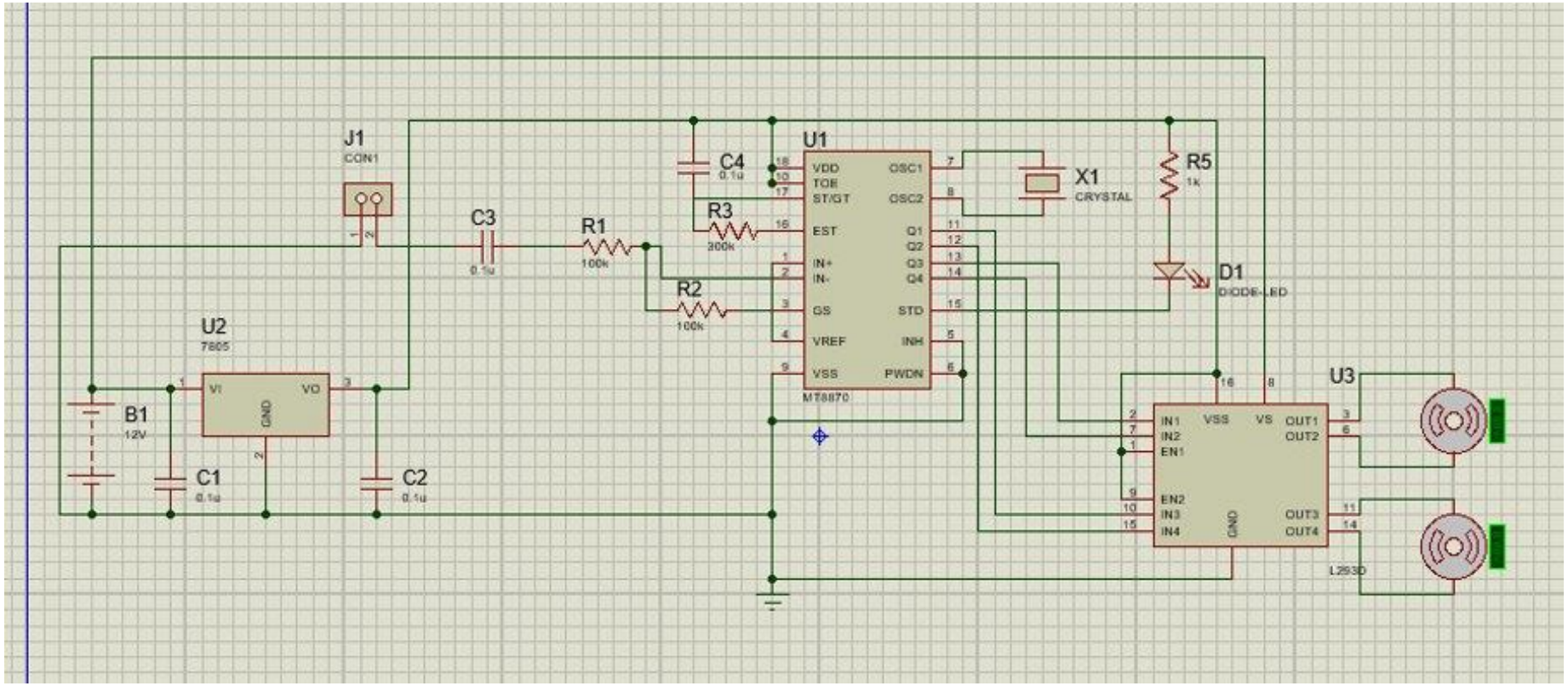
1. To control a robot with help of Bluetooth headset and DTMF android app.
2. To reduce complexity of circuit.
3. Controlling a system without using any programming boards either Arduino or Microcontrollers etc

INTRODUCTION

In the present-day scenario with the development and advancement of technology we find new innovation coming in a more profound into our lives. Nowadays IOT works have increased a lot in our society. The principle goal of this mini project is to design a simple Robot using a DTMF and Bluetooth.

This particular robot basically aimed at eliminating the limitations of rang. The locomotion of robot in different directions can be controlled and maneuvered by pressing the assigned keys on the DTMF app. The robot is controlled by an android app (DTMF APP) that generates tone and transmits to Bluetooth which is attached to the robot. In this course of call if any button on the controller mobile phone is pressed, a tone corresponding to the button pressed is heard at the other end. This tone is called as the DTMF tone. The robot perceives this DTMF tone with the help of a Bluetooth stacked to the robot. This tone is processed by DTMF decoder with the help of a MT8870 DTMF decoder. The MT8870D then transmits a signal to the motor's driver IC-L293D to operate the motors. According to the decoded values the motors will run either forward or backward.

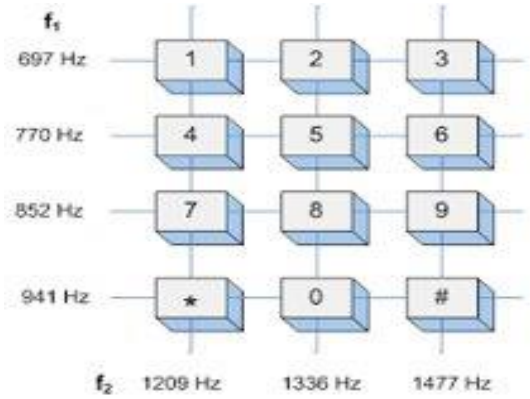
CIRCUIT DIAGRAM



WORKING

DTMF: (DUAL TONE MULTI FRIQUENCY)

- Signalling system for identifying the keys.
- Combination of two sine wave tones to represent a key.
- These tones are called row and column frequencies as they correspond to the layout of a telephone keypad



BLUETOOTH

Bluetooth is an open wireless technology standard for transmitting fixed and mobile electronic device data over short distances.

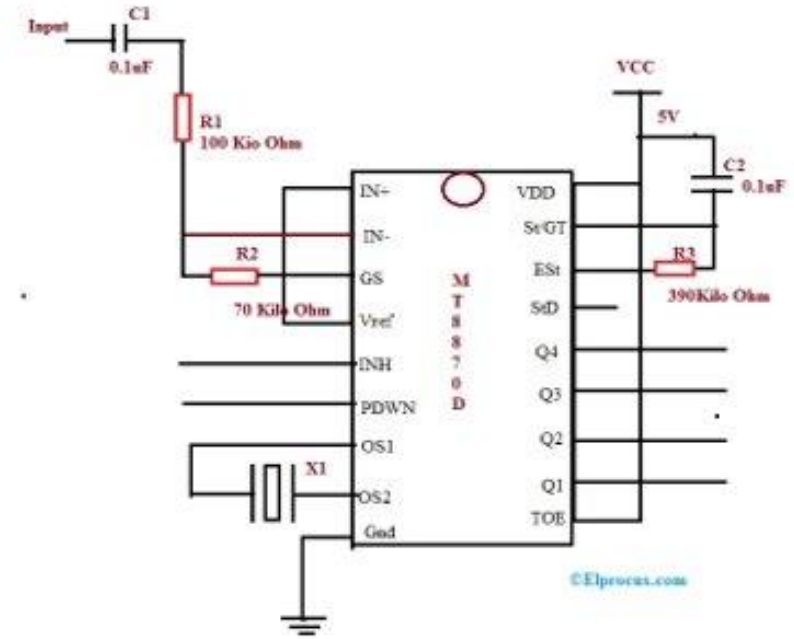
Range of Bluetooth is dependent on its class and primarily there are three classes of Bluetooth:

1. **Class 1** transmitting at **100 mW** with a range of **100 meters** or **328 feet**.
2. **Class 2** transmitting at **2.5 mW** with a range of **10 meters** or **33 feet**
   (most Bluetooth headsets and headphones are common Class 2 devices)

3.Class 3 transmitting at **1 mW** with a range of fewer than **10 meters**.

DTMF DECODER: (MT8870)

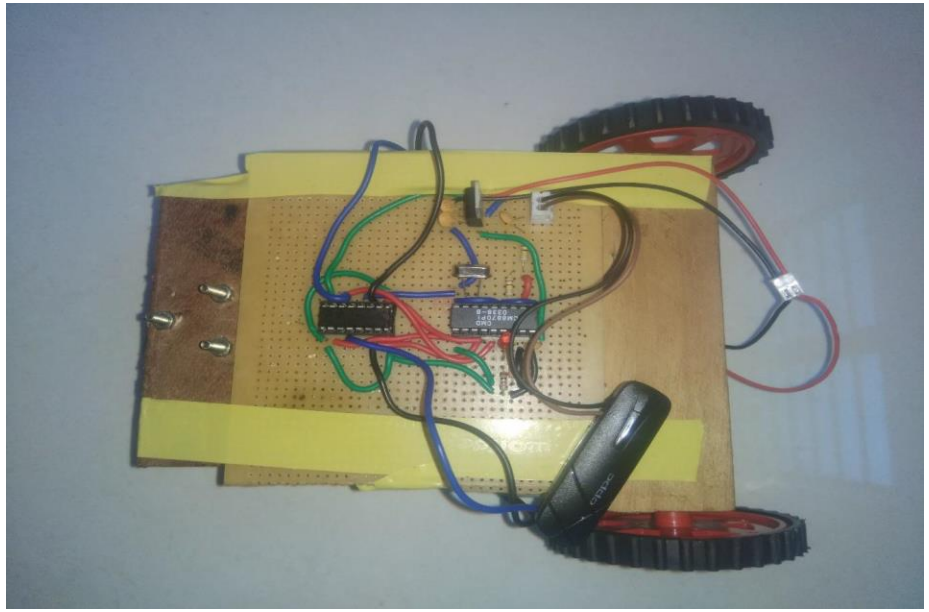
- This circuit detects the dial tone (DTMF Tone) from a telephone line.
- Decodes the keypad pressed on the remote telephone.
- A complete communication consist of the tone generator and the tone decoder.

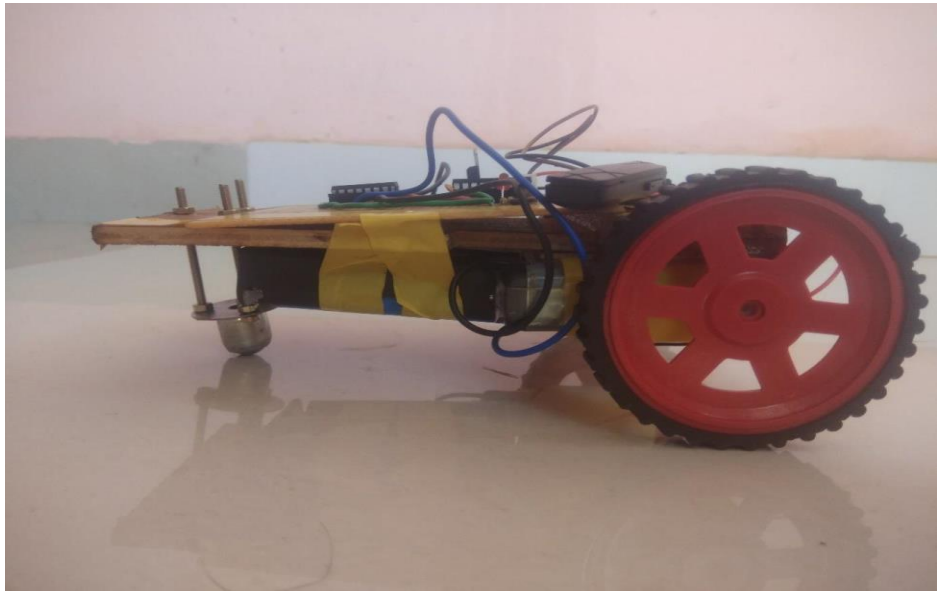


OUTPUT TABLE

Button	Low DTMF frequency (Hz)	High DTMF frequency (Hz)	Binary coded output			
			Q1	Q2	Q3	Q4
1	697	1209	0	0	0	1
2	697	1336	0	0	1	0
3	697	1477	0	0	1	1
4	770	1209	0	1	0	0
5	770	1336	0	1	0	1
6	770	1477	0	1	1	0
7	852	1209	0	1	1	1
8	852	1336	1	0	0	0
9	852	1477	1	0	0	1
0	941	1336	1	0	1	0
*	941	1209	1	0	1	1
#	941	1477	1	1	0	0

WORKING MODEL





CONCLUSION

The design which is proposed to work as a robot is actualized with features as mentioned in the above sections. The circuit can be changed to suit any necessary application. The device is planned and realized successfully and it is ready to be utilized.

The working of the circuit can be further improvised by adopting the following points.

1.The speed of the robot can be controlled by using the gear motors.

2. The entire circuit can be implemented using still more effective android application for better device interface.

REFERENCES

- Electronics For You (Magazine)
- Website(www.efxkits.us)

- https://electronicsforu.com/electronics-projects/hacking-bluetooth-headset-control-robot

- https://people.ece.cornell.edu/land/courses/ece4760/FinalProjects/s2001/pr57/M-8870.PDF

- https://www.rakeshmondal.info/L293D-Motor-Driver

PROJECT :2

“Secured means of entrance for examination hall using face recognition ”

Problem Statement:

To design a model to detect and recognize student face using python to enter the examination hall.

Objectives:

- To develop a model for face detection and recognization.
- To ensure enrolled student should enter the exam hall .

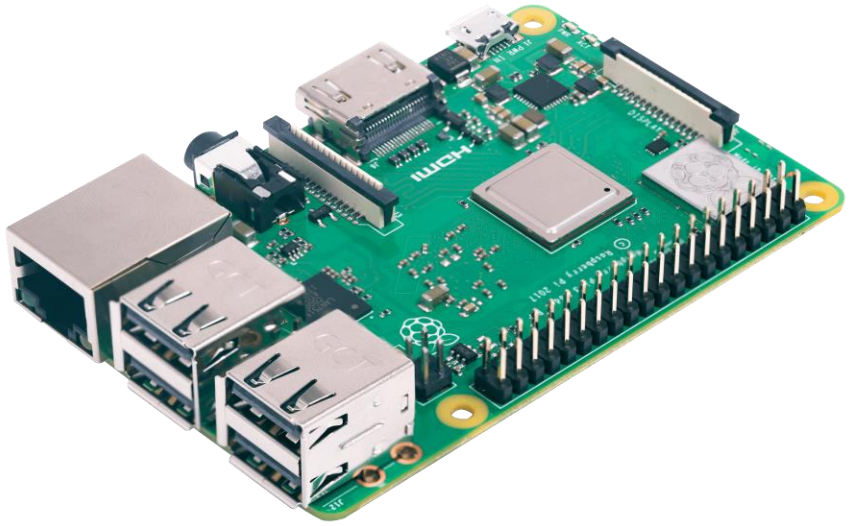
INTRODUCTION

Nowadays, the identity forgery used in exams are becoming more and more advanced. Test taking is a common method used for cheating in exams. Therefore, how to correctly recognize those forged identities has become a difficult issue in exam management. This project aims to design a face recognition system that can be used in the exam identity authentication system. This system integrates various advanced technologies, such as face image capturing, human-machine interaction, data transmission. In this system, handheld terminals feature low cost, compact size, various functionalities, and high scalability.

HARDWARE &SOFTWARE DESCRIPTIONS

Hardware:

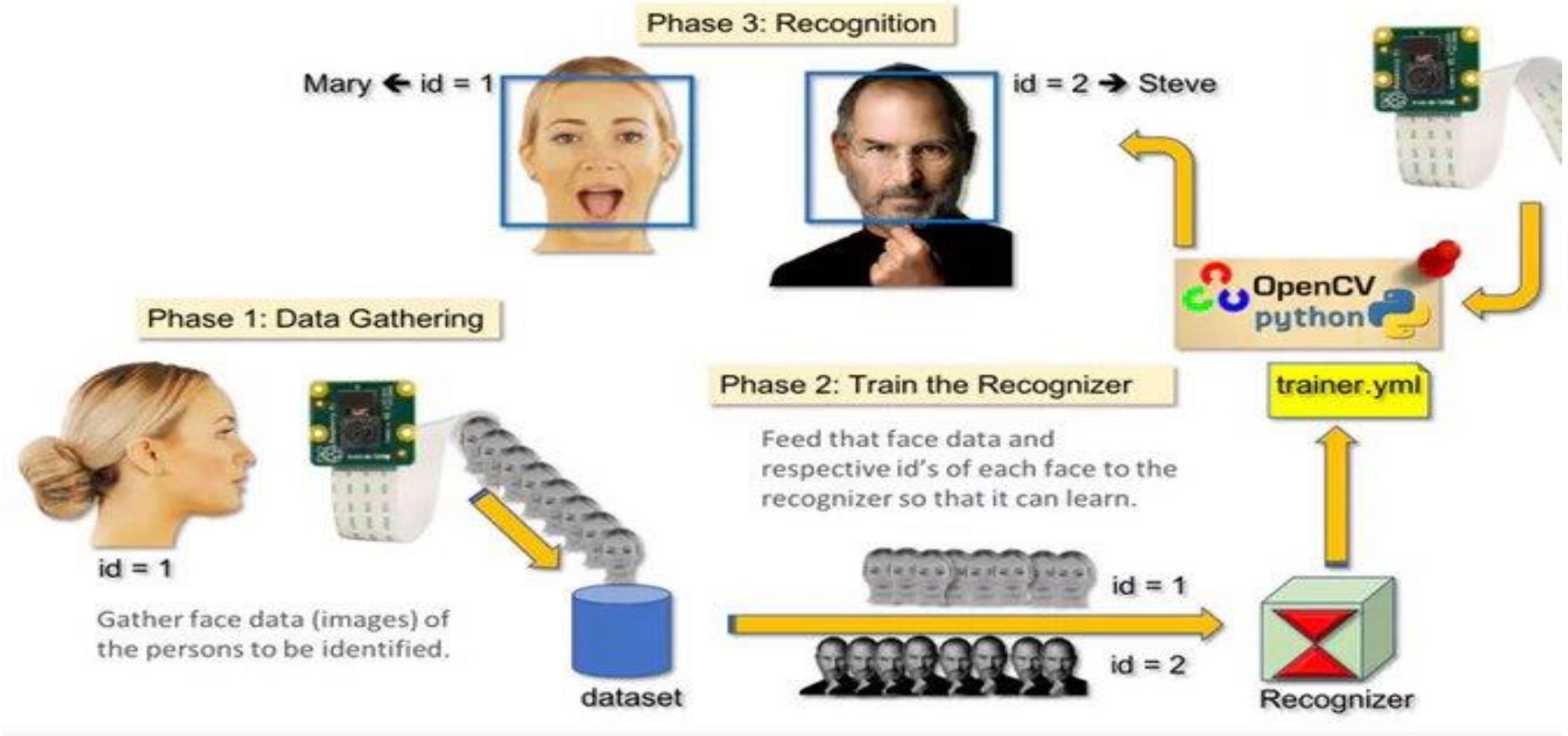
Raspberry Pi
Pi Camera
Motion Sensor
servo motor



Software:

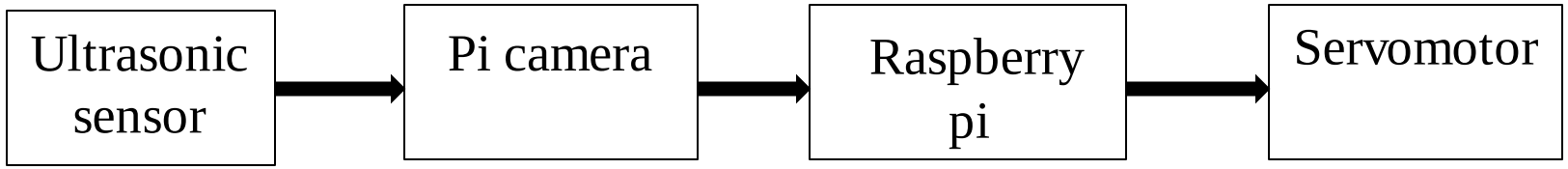
Raspbian Buster
open CV
Thonny IDE

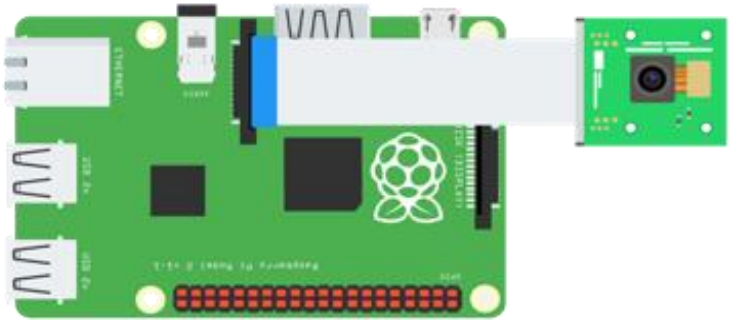
PROPOSED STSTEM



BLOCK DIAGRAM

This Includes the basic level of block diagram involved in the project.





WORKING

Step I : Data Gathering

- Face id of different students is collected using camera.
- Collected data is framed into sets.

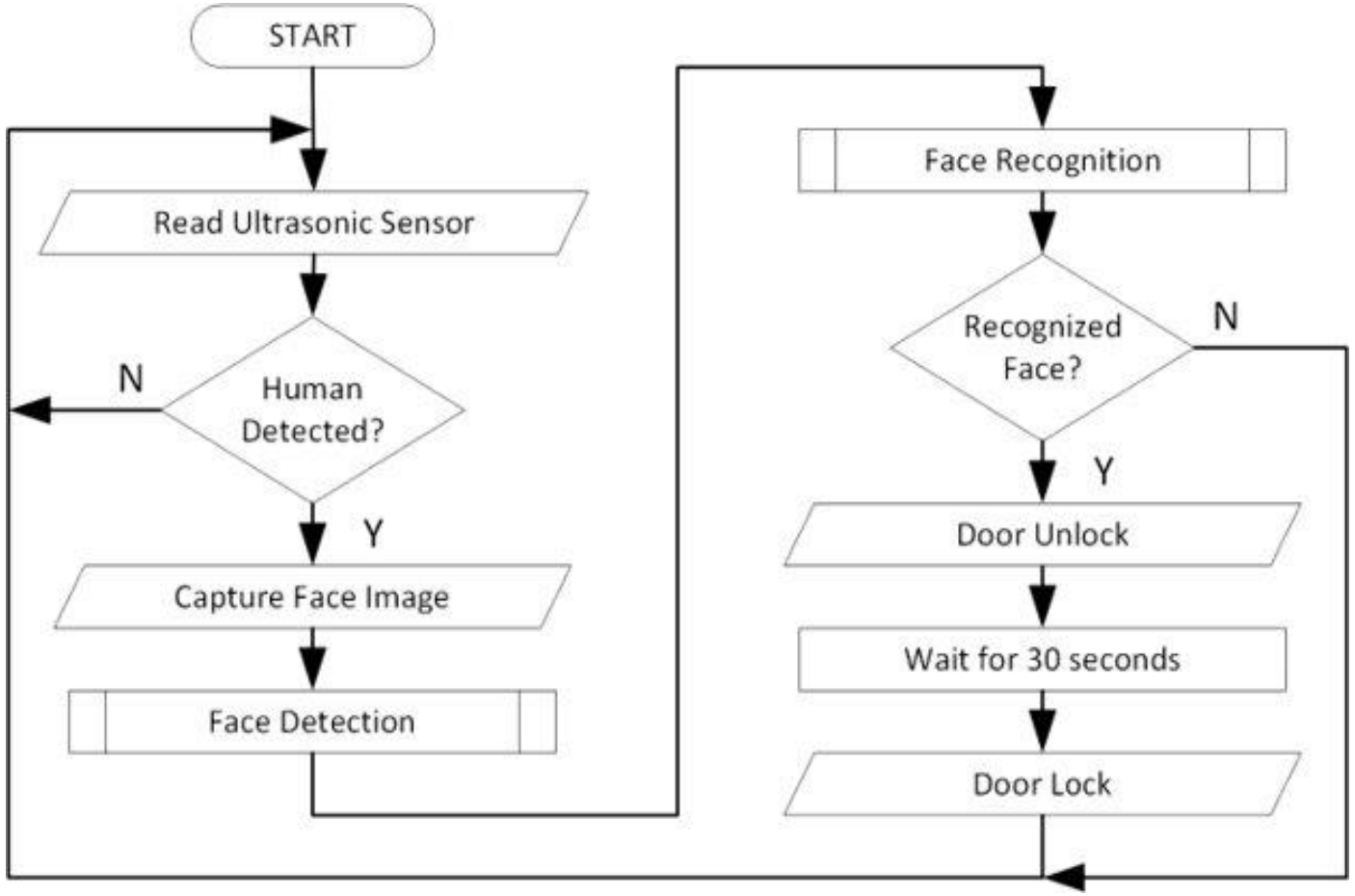
Step II : Train the Recognizer

- Using the collected data sets Pi has to be trained.
- Training is done with help of certain codes.

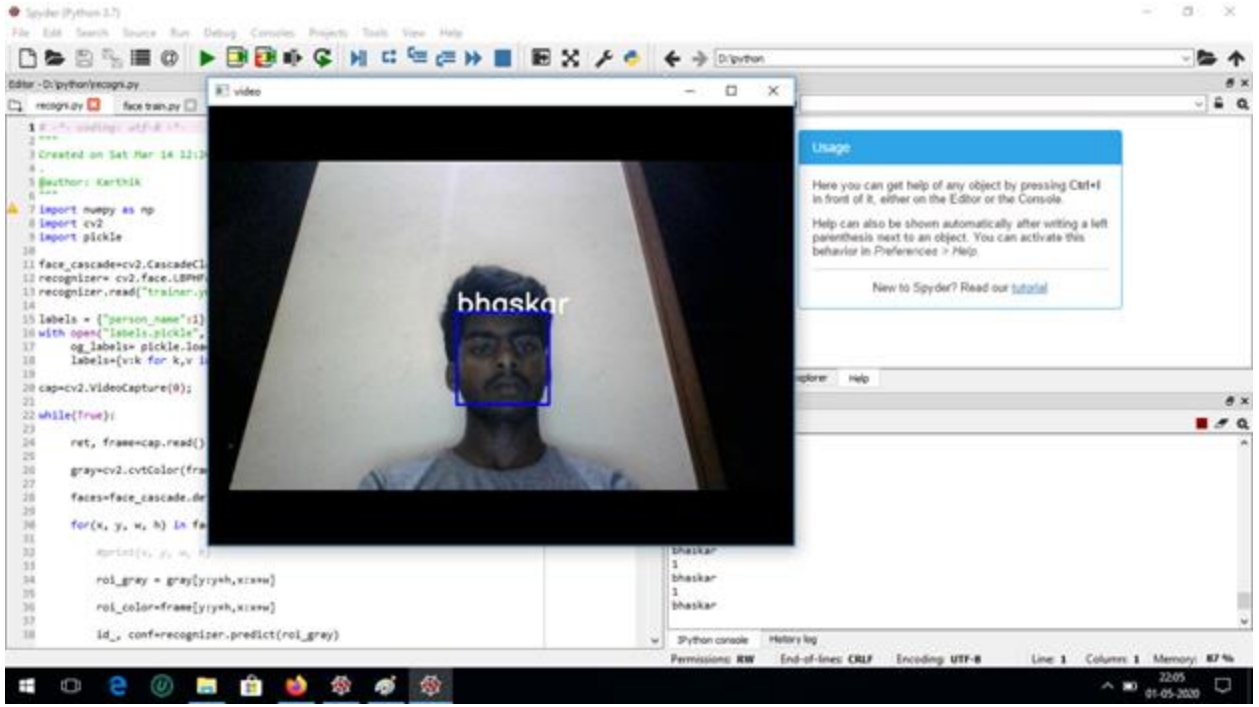
Step III: Recognization

- The device compares input data(face) with trained data.
- Id of matched face will be displayed.

FLOW CHART


START
Read Ultrasonic Sensor
Human Detected?
N
Y
Capture Face Image
Face Detection
Face Recognition
Recognized Face?
N
Y
Door Unlock
Wait for 30 seconds
Door Lock

OUTPUT RESULTS



CONCLUSION AND FUTURE SCOPE

The whole world is using the facial recognition technology and enjoying its benefits and uses. There is a huge scope for this facial recognition technology in India and it is helping to improve the country in various process. This technology and its applications can be used across different segments of the country.

Prevention of the frauds at ATMs across India. The databases of all the customers of their respective banks along with their ATM cards in India can be created and facial recognition systems can be installed across all the ATM's. So, whenever the user enters the ATM his photo will be taken and it will permit the access only after it is being matched with stored photo from the database.

Duplicate voters can be easily identified in India.

Verification of passport and visas can also be done using this technology.

Driving license verification can be done easily done using the same approach.

Thank You