Luanma S.R.L

Índex

Technical Documentation

The following document shows the technical specifications of the project "Biometric Reader" of the company "LUANMA S.R.L.".

The biometric reader is based on facial recognition for the detection of people in a specific work environment.

It consists a software: An application developed by the company that must be downloaded to a computer, this is the one that contains the biometric reader.

It must be accompanied by a hardware: device developed by the company, this is the one that will trigger an electronic lock for the passage of personnel. In addition, this hardware includes a digital thermometer and an alcohol sprayer for hygiene.

Product

Facial Recognition Application:

This application is the one that contains Face Recognition. Its main function is to detect faces and decide whether to open the electronic lock or keep it closed. It must be downloaded to a computer (Windows) for it to work. It must be connected to the hardware, through the (USB) port. It will send commands to the microcontroller on the device according to what the facial recognition detects.

Atmega328P:

Microcontroller that will execute orders according to the data it receives from the serial port, these orders will be such as to open the electronic lock or to leave it closed.
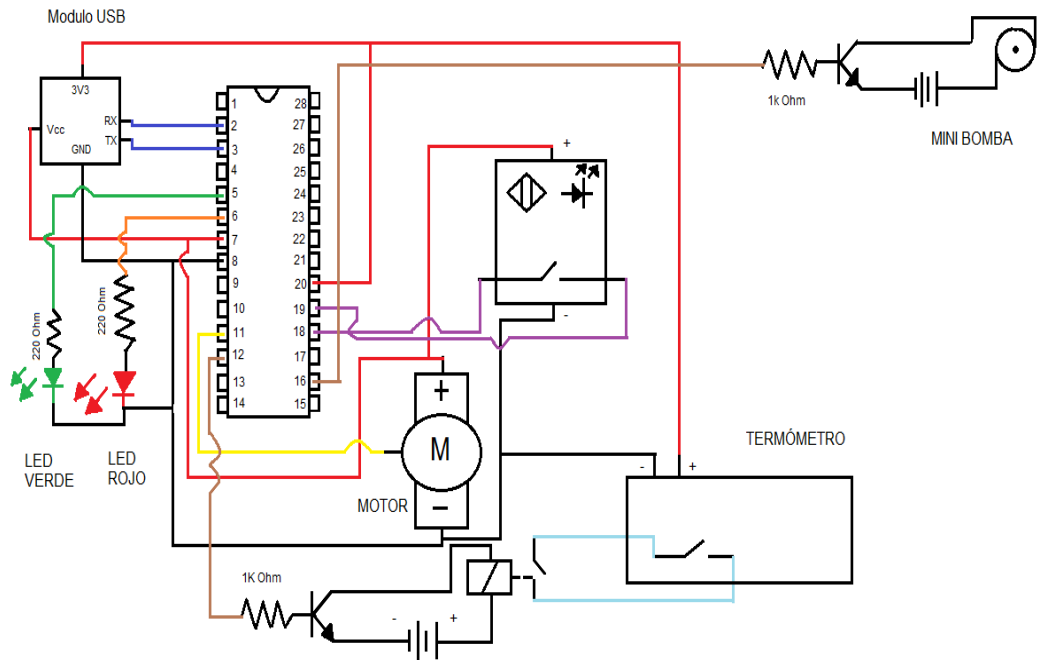
Thermometer and Alcohol Sprayer:

Temperature record of each personnel before entering the work environment, plus alcohol spray to sanitize their hands. This system is located in the hardware next to the microcontroller, is automatic thanks to sensors such as ultrasonic sensor, which is responsible for sensing when it detects an object under it, in order to "warn" the system orders to take the temperature measurement with the thermometer. And an infrared sensor that is in charge of reading the radiation in order to have data of the body temperature.
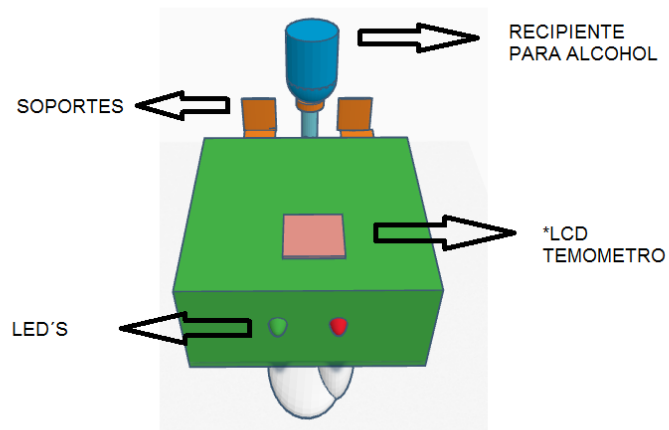
Building Materials

1	Atmega328P	$ 7,37 USD
1	Digital Thermometer	$19,66 USD
1	Mini Alcohol Pump	$4,42 USD
2	Transistor BC548	$0,20 USD
2	Resistors 1K Ohm	$0,09 USD
2	Resistors 220 Ohm	$0,09 USD
2	Relay 9v	$1,97 USD
2	Battery 9V	$5,31 USD
1	Module USB	$2,84 USD
1	Electronic Lock	$15,73 USD
2	LED´s	$0,16 USD
1	Ultrasonic Sensor	$2,15 USD
1	PCB	$3,93 USD
	wood Aglomerada 4mm	$5,31 USD
	Others	$4,42 USD
	Total------------------------------------	$73,65 USD

Electronic Circuit

Design

Front View

RECIPIENTE PARA ALCOHOL

SOPORTES

*LCD TEMOMETRO

LED'S

Bottom View

1=Sensor de Aporximidad

2=Sensor de Temperatura

3=Rociado de Alcohol

4=Puertos

Mano

Rear View

Recipiente para Alcohol

LCD del Temometro

Soportes

Puertos

Mano

Measures

25cm

15cm

15cm

19,5cm

9,5cm
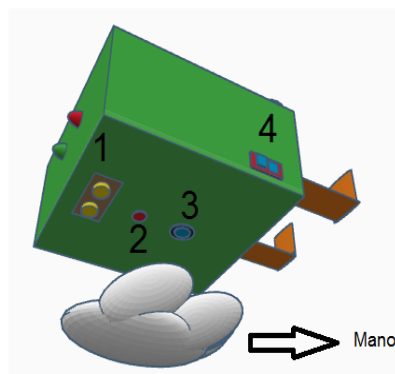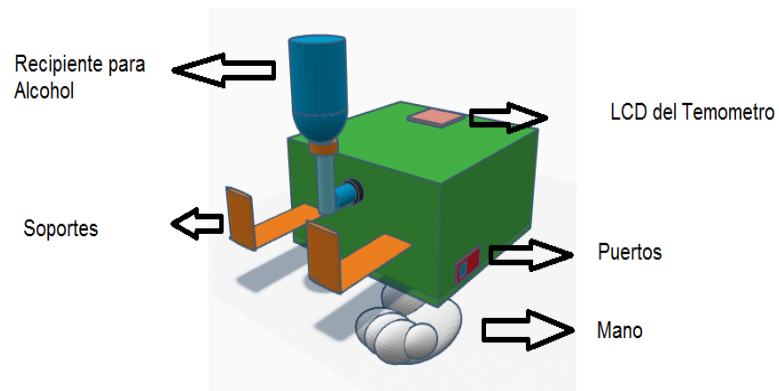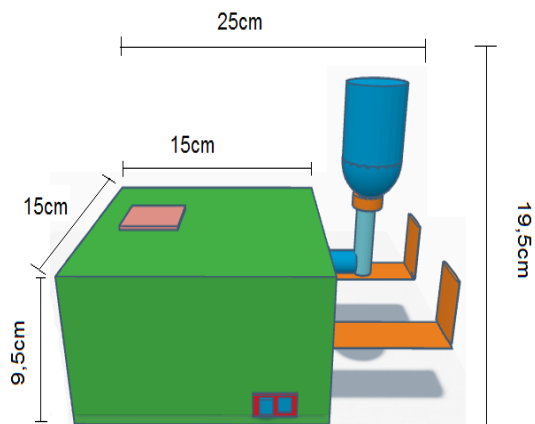
Installation

1- Download the "Biometrics.py" app.

2- Connect your device to a computer (Make sure you have good lighting and white-coloured walls if possible)

3- Open the app, go to "Settings" then select the Input Port where the device is Connected. Once you do that, adjust the "Baud" value (we recommend you change it to 9600)

4- Install the Electronic Lock in your door and connect the cables in your device, which are located on both sides of it.

5- Record your faces in the "Camera" option, it will ask for the person's name after that. Then wait for it to take samples, this will only take around 1-2 minutes for each person.

6- Then select the "Model" option, this will take time according to how many people have been recorded.

7- Finally, select the "Recognition" option and test if the door opens when detects someone that has been recorded, and if it stays closed when detects an unknown person.

Suggestions

*The application must be permanently turned on.

* if the application closes or the computer shuts down, repeat step 7

* if you want to register another person, select "delete model" and repeat steps 5, 6 and 7.

*In case you want to delete a person, enter the application folder, in the faces folder there will be all the faces, delete the person you no longer want to have, run the application and select the option "delete model". Once this is done, repeat step 6 onwards.

*If you want to see the time record of each person, select the "record" option in the menu and type the person's name.

Details

*The place where the computer or camera is located must have good lighting, otherwise it may cause problems when detecting people. It is recommended that, at the time of taking the 300 photos, take them with different illumination.

*The distance between the person and the camera should be approximately 20cm.

*No cambie de lugar el dispositivo, en lo contrario puede afectar el funcionamiento.

Contact us

In case of problems, you can visit our website: https://luanmatienda.wixsite.com/my-site-1

Or our Instagram: luanma.tienda and contact us there. You will be able to find answers from other customers or buy more products.