DAISY

AUTOMATIC

PAPER BIN

Designed by:Sergio

ME1 2017-2018

# ÍNDICE

1- Introduction of the project:

This is my third project named Daisy, it's an automatic recycle bin capable of measuring temperature and is able to show the time, all of it, on a 16x2 LCD display.

It's made of a paper bin with an ultrasonic sensor to measure the distance, a temperature sensor, RTC, and a 360 º Servo to open de cover.

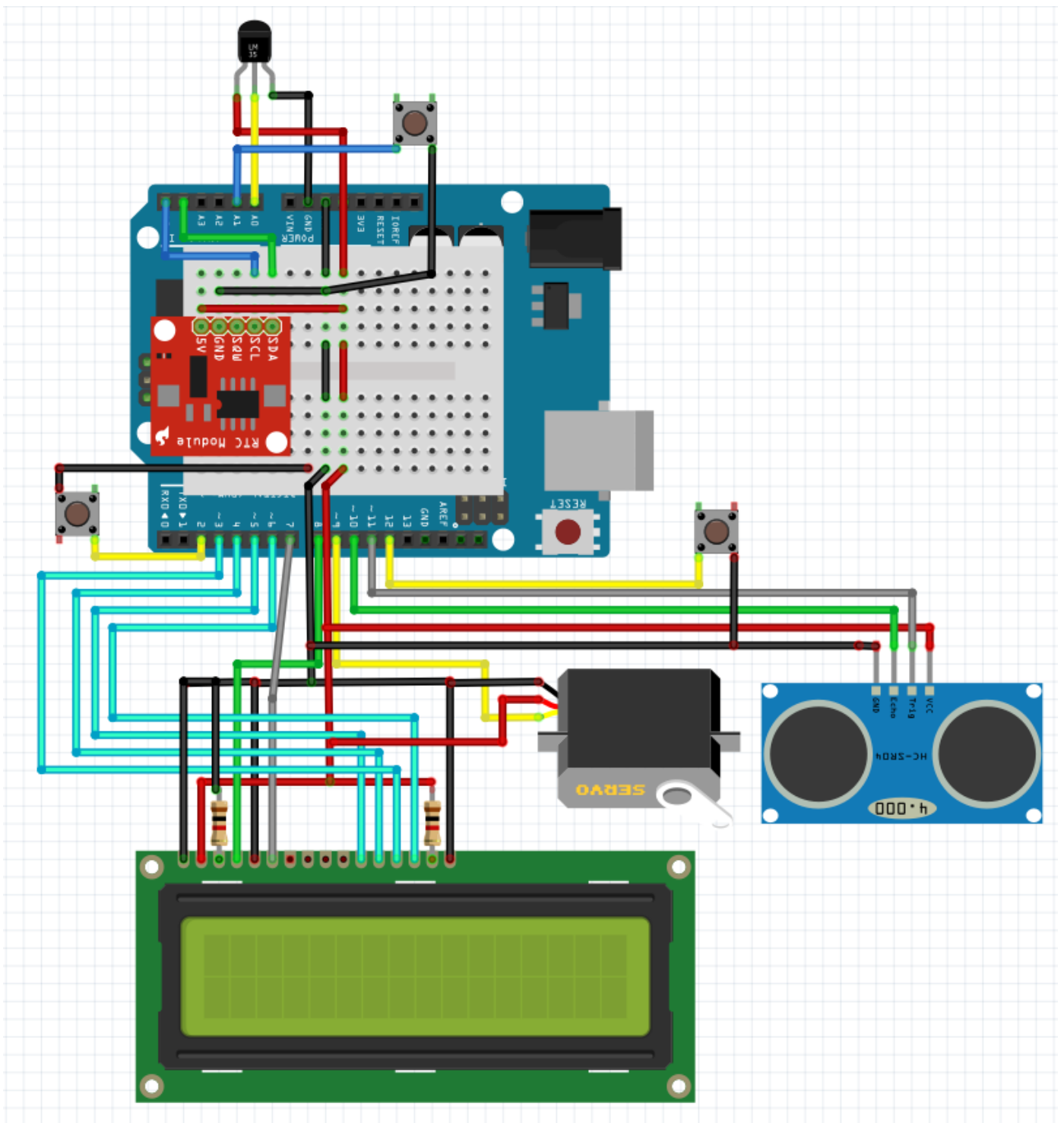Also, you have a menu to interact with the bin using tree buttons.
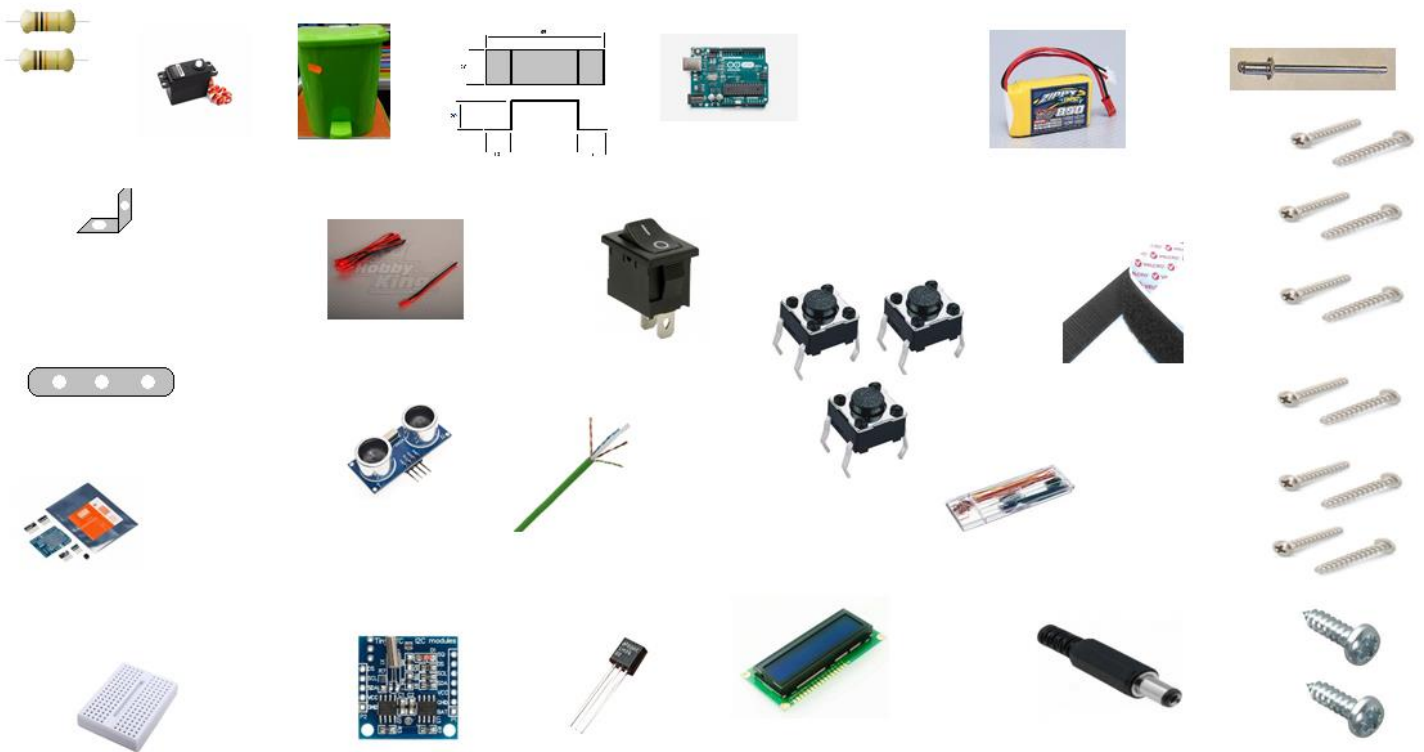
1- Options

2- SI

3- NO

1- Introduction of the project:
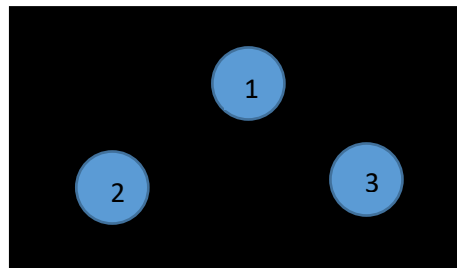
2- Electric scheme:

3- Assembly description:
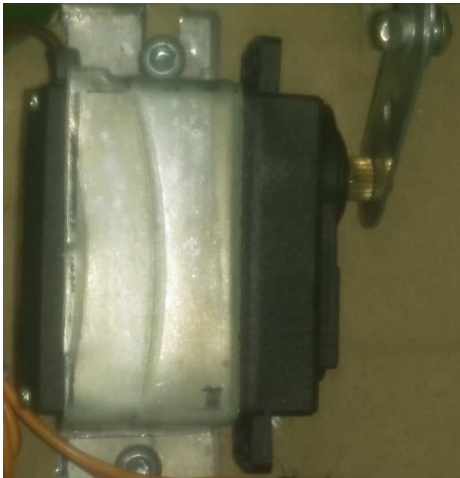
----All the components ---

---Assembly process---

1-First of all you have to make the opening system using the "Metal part" , "Metal part L" and the plastic system of the paper bin, assembly it with the "RIVET" .
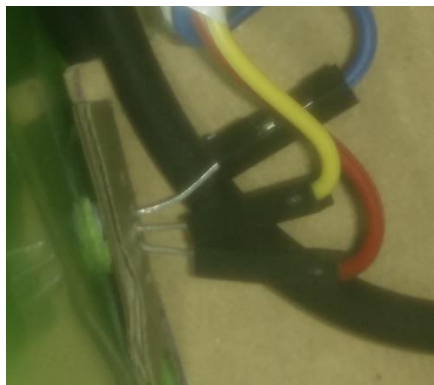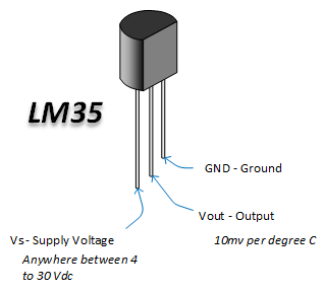
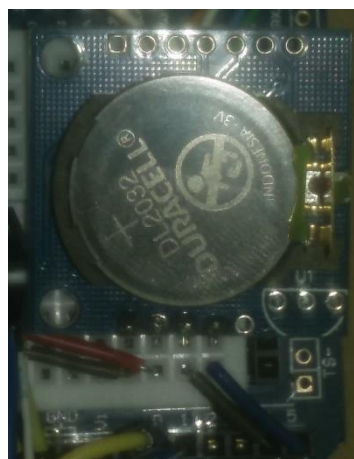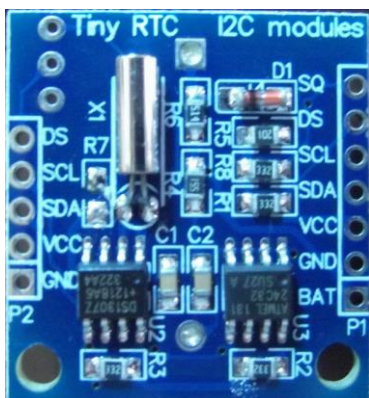2- Then you have to hold the "360º SERVO", using the "Metal part Ω" and 2x "SCREW 3X15"

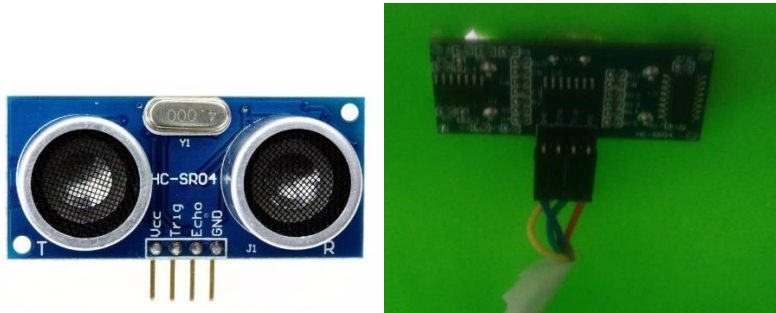3- Now, you have to wire all the sensor and the LCD:

Lm35

RTC

HC sr04
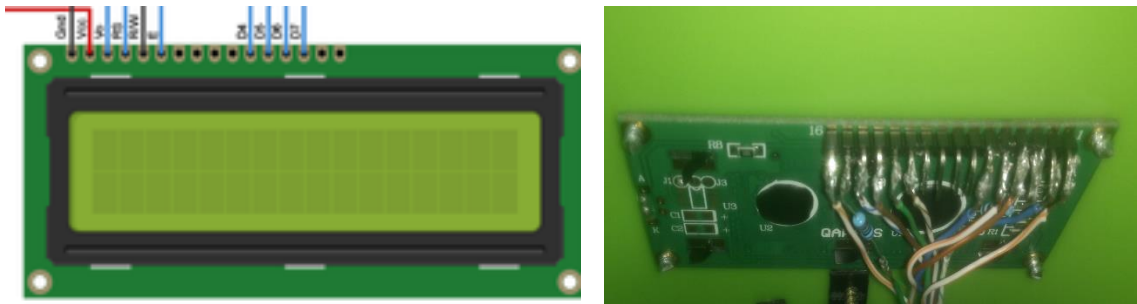

LCD 16X2

4-Then make all the holes you have to use:

LCD   LM 35
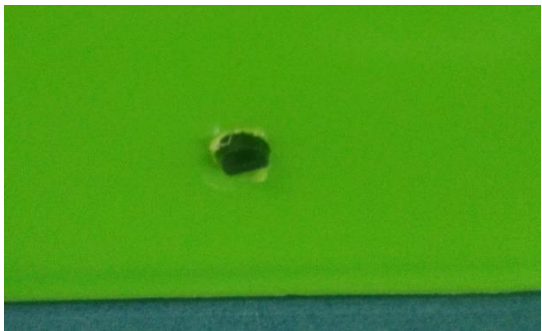
HC sr04   ON/OFF

5-The next step is wire the buttons for the menu interaction:
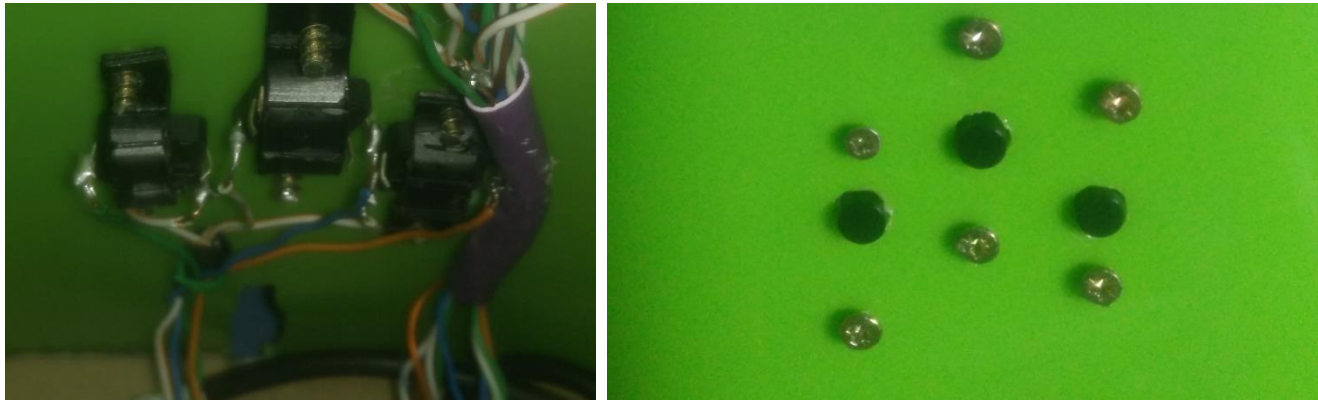
6- Now you have to hold the "ARDUINO", "PROTO SHILED" and the "PROTO 200", using the "ADESIVE VELCRO".

7-This is the moment to wire all the components to the Arduino plate, use the electric scheme to do the correct connections:

8-The last step is making the supply wires with interrupter for ON/OFF the bin. Then connect the Lipo with the wires on the Arduino:

---The result---

4- Firmware description:

This is paper bin have 4 menus:

You can move across then pressing the OPTION button.

1.First Menu

1-   When you turn on the paper bin, you will be set in the first mode, you will see something like that:
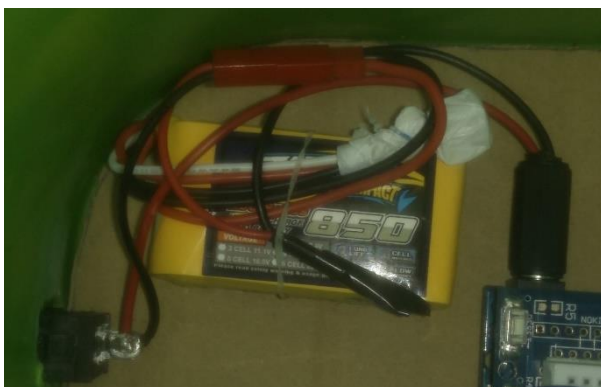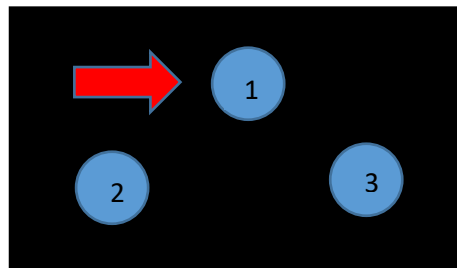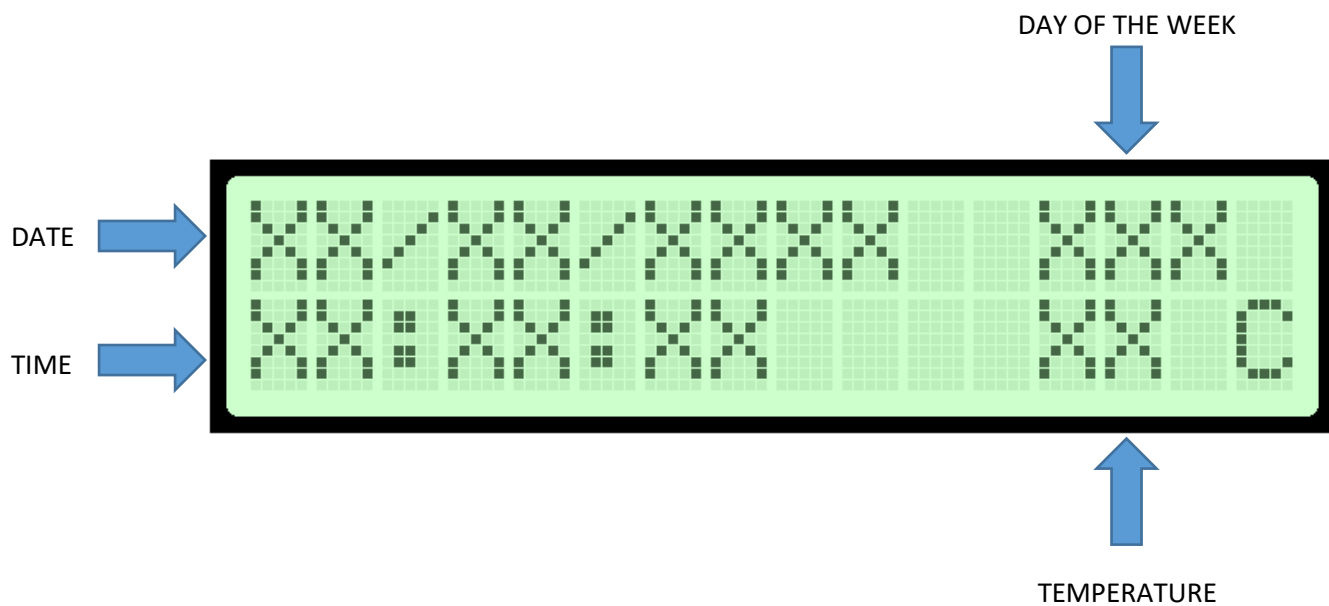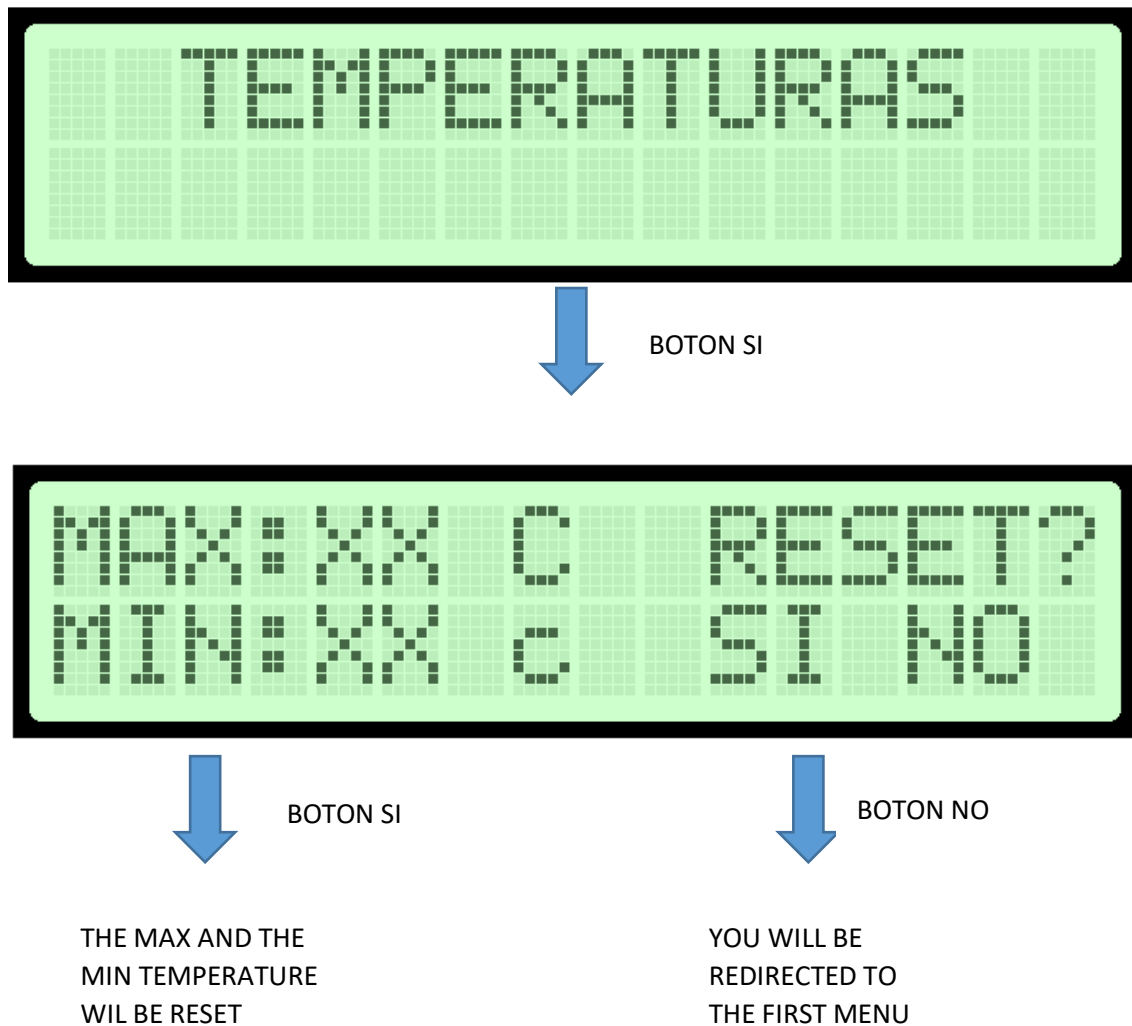

In this mode, you can see all the information, and you can open the cover passing your hand over the ultrasonic sensor. All the sensors are running in this mode.

2.Second Menu

2-This is the second menu, you can see the max and the min temperature the paper bin has registered. Also, you can reset it.

```
TEMPERATURAS
```

⬇ BOTON SI

```
MAX:XX C    RESET?
MIN:XX c    SI  NO
```

⬇ BOTON SI   ⬇ BOTON NO

THE MAX AND THE   YOU WILL BE
MIN TEMPERATURE   REDIRECTED TO
WIL BE RESET   THE FIRST MENU

CAUTION: IN THIS MENU, YOU CAN'T OPEN THE PAPER BIN AUTOMATICALY AND THE TEMPERATURE SENSOR ARE DISABLED TOO.

3.Third Menu

3-In this menu, you can see how many times the paper bin has AUTOMATICALY opened.
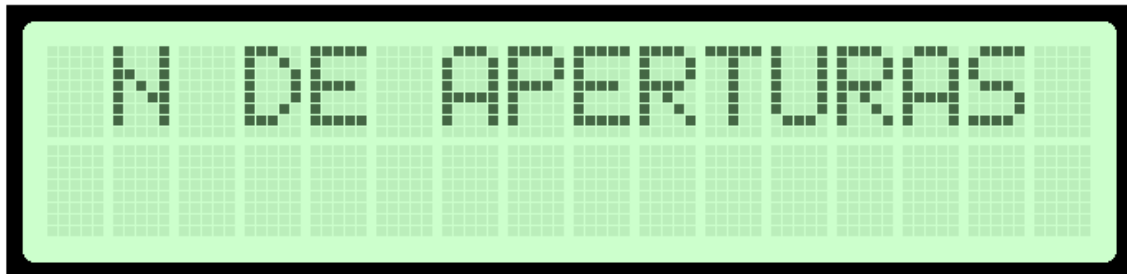
BOTON SI

BOTON SI

BOTON NO

THE NUMBER OF TIMES THE PAPER WAS OPENED WILL BE RESET

YOU WILL BE REDIRECTED TO THE FIRST MENU

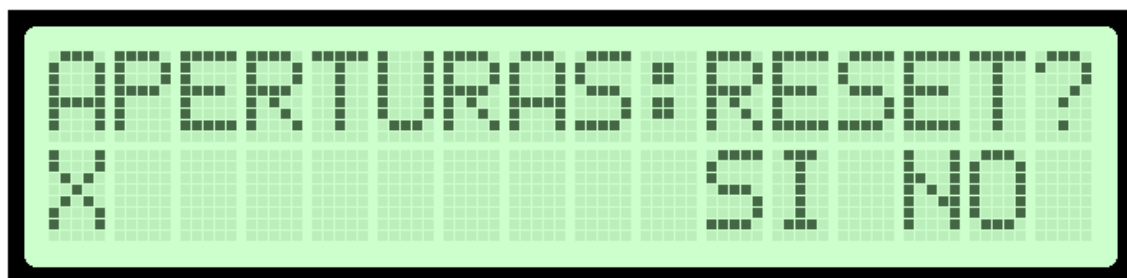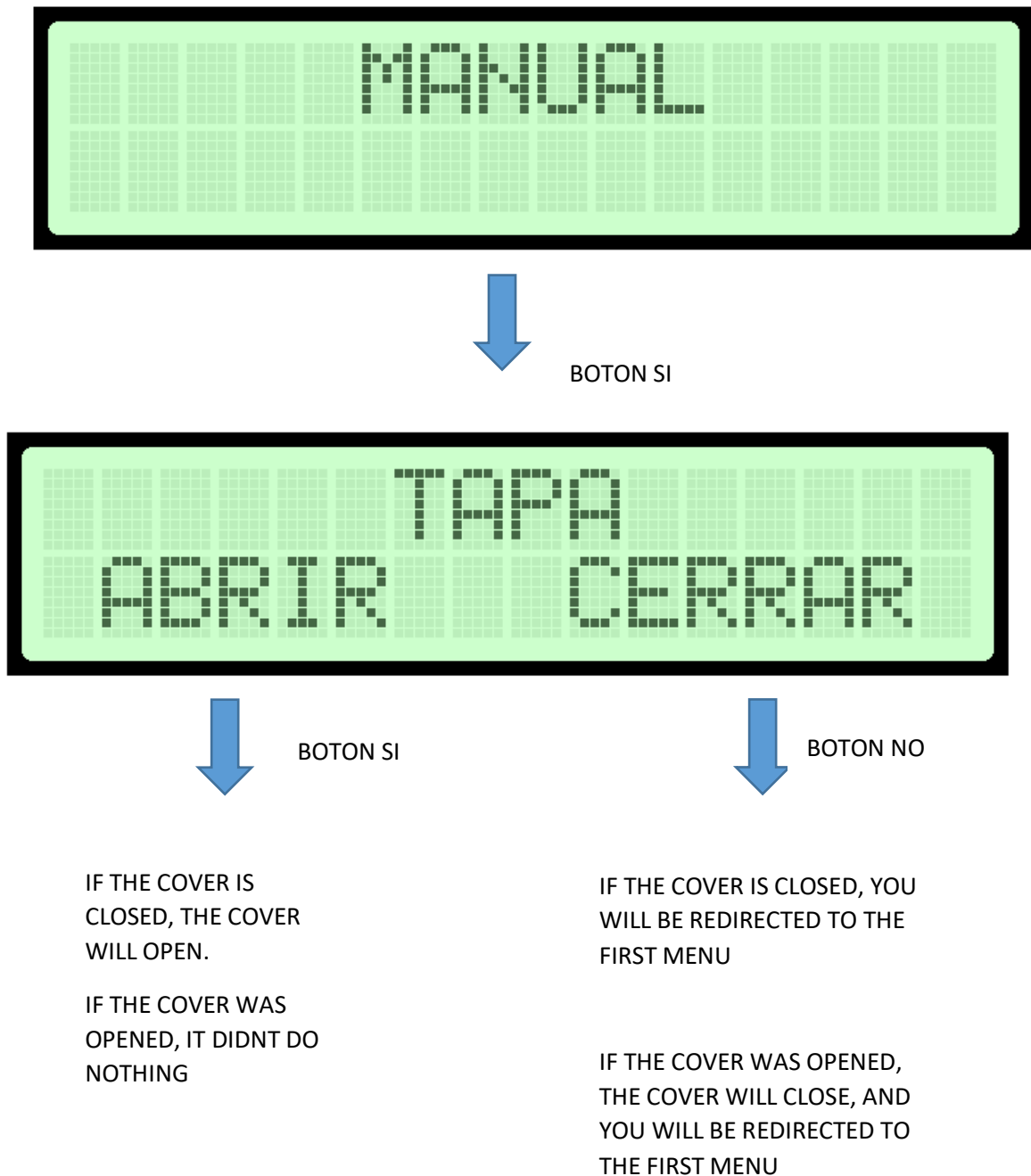CAUTION: IN THIS MENI, YOU CAN'T OPEN THE PAPER BIN AUTOMATICALY AND THE TEMPERATURE SENSOR ARE DISABLED TOO.

4.Fourth Menu

4-This is the last menu, here you can open the paper bin manually and for the time you need.

```
        MANUAL
```

↓ BOTON SI

```
            TAPA
 ABRIR        CERRAR
```

↓ BOTON SI   ↓ BOTON NO

IF THE COVER IS CLOSED, THE COVER WILL OPEN.

IF THE COVER WAS OPENED, IT DIDNT DO NOTHING

IF THE COVER IS CLOSED, YOU WILL BE REDIRECTED TO THE FIRST MENU

IF THE COVER WAS OPENED, THE COVER WILL CLOSE, AND YOU WILL BE REDIRECTED TO THE FIRST MENU

CAUTION: IF YOU PRESS THE OPTION BUTTON, AND THE COVER WAS OPENED, IT WILL BE CLOSED INMEDATLY

CAUTION: IN THIS MENI, YOU CAN'T OPEN THE PAPER BIN AUTOMATICALY AND THE TEMPERATURE SENSOR ARE DISABLED TOO.