SMART GARDEN
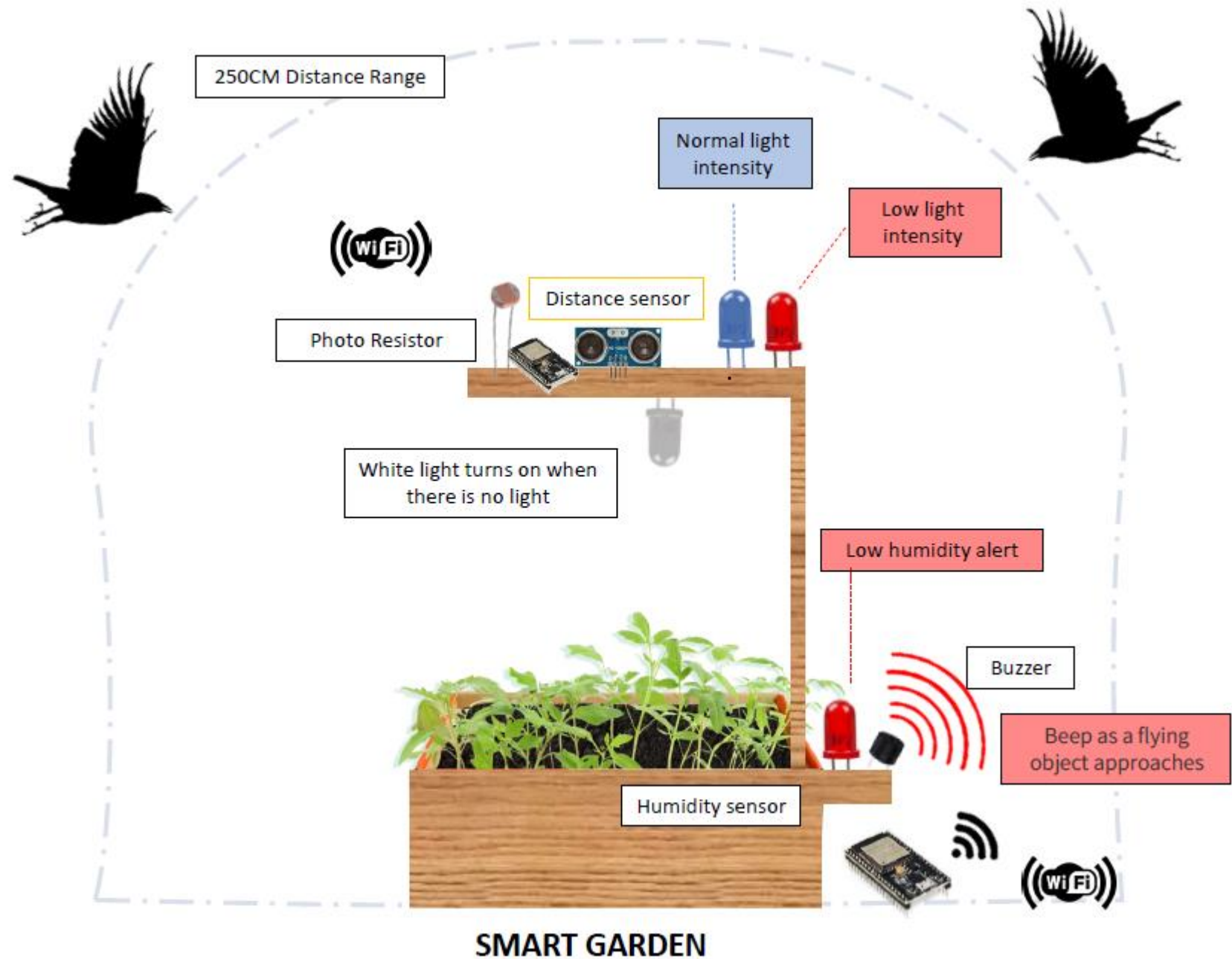
Light Sensor project:

- Michal Tamir
- Ori Shinsholker
- Osnat Blau
- Deviad Bokobza
- Tuval Barak

POC
PROOF OF CONCEPT
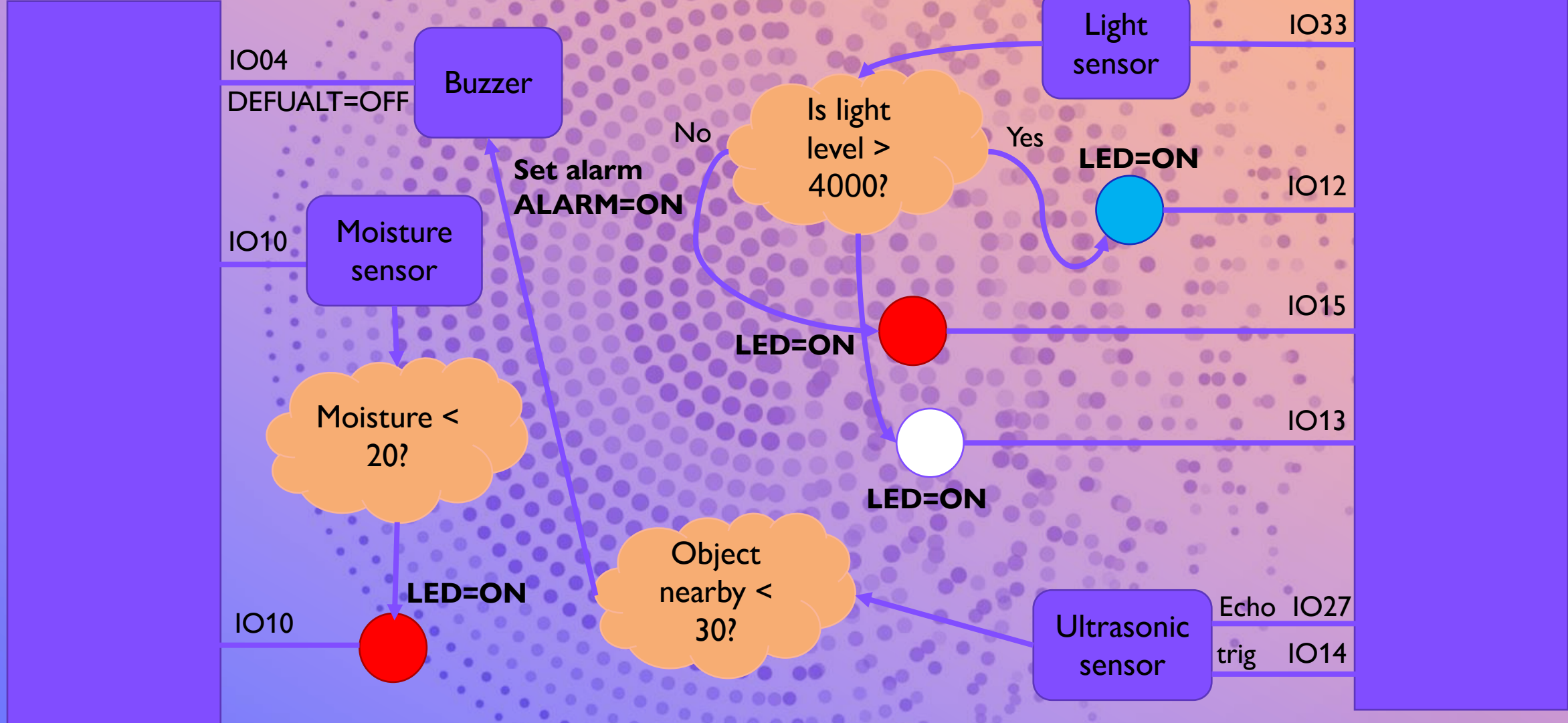
250CM Distance Range

Normal light intensity

Low light intensity

WiFi

Distance sensor

Photo Resistor

White light turns on when there is no light

Low humidity alert

Buzzer

Beep as a flying object approaches

Humidity sensor

WiFi

SMART GARDEN

PROJECT

<u>SmartGarden</u>

- Automated system to enhance plant life.

- Analyze the amount of light needed for each plant.

- SmartGarden has the ability to increase light exposure needed for each plant and any lifecycle.

- Analyze the moisture of the plant and creating a report on cloud.

- SmartGarden also includes subsystemCrowGuard.

- CrowGuard include Ultrasonic sensor – protects in range of 4 meters and FOV of 30 degrees, and Buzzer.

- Conceptually, in order to create a dome, there will be needed 6 distance sensors.

- Secure plant from any crow or any other flying pests, by detecting them and setting an alarm to keep them away.

- Cloud services that contains the information for each plant, light exposure, and statistics.

- Ability to read and write light exposure rate for each plant and turn on the light needed.

FLOW CHART

ESP32-PICO

ESP32-PICO

IO04

DEFUALT=OFF

Buzzer

Set alarm ALARM=ON

IO10

Moisture sensor

Moisture < 20?

LED=ON

IO10

Is light level > 4000?

No

Yes

Light sensor

IO33

LED=ON

IO12

LED=ON

IO15

LED=ON

IO13

Object nearby < 30?
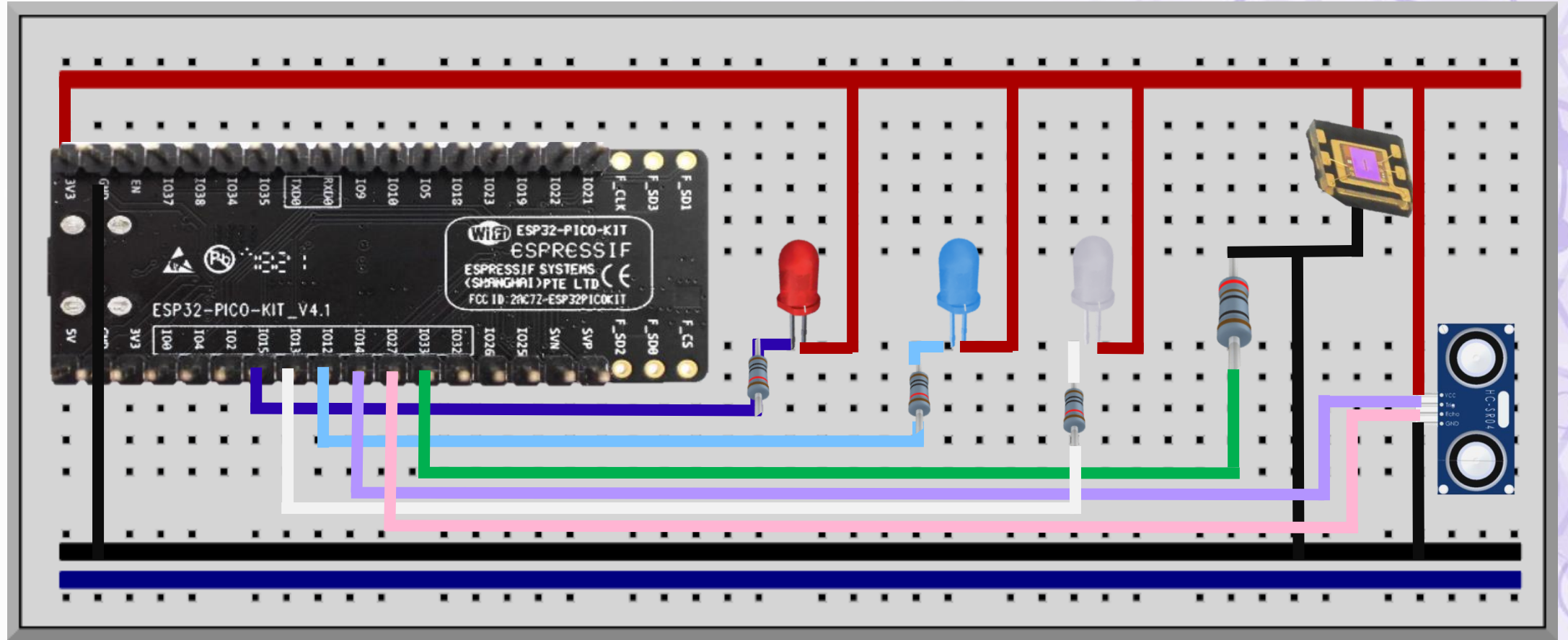
Ultrasonic sensor

Echo IO27

trig IO14

BOM

BILL OFF MATERIALS

- 2 x ESP32-PICO
- 4 x LED – 2 x red, blue, white
- 2 x Breadboard
- Light Sensor
- Speaker
- Ultrasonic sensor
- Moister sensor
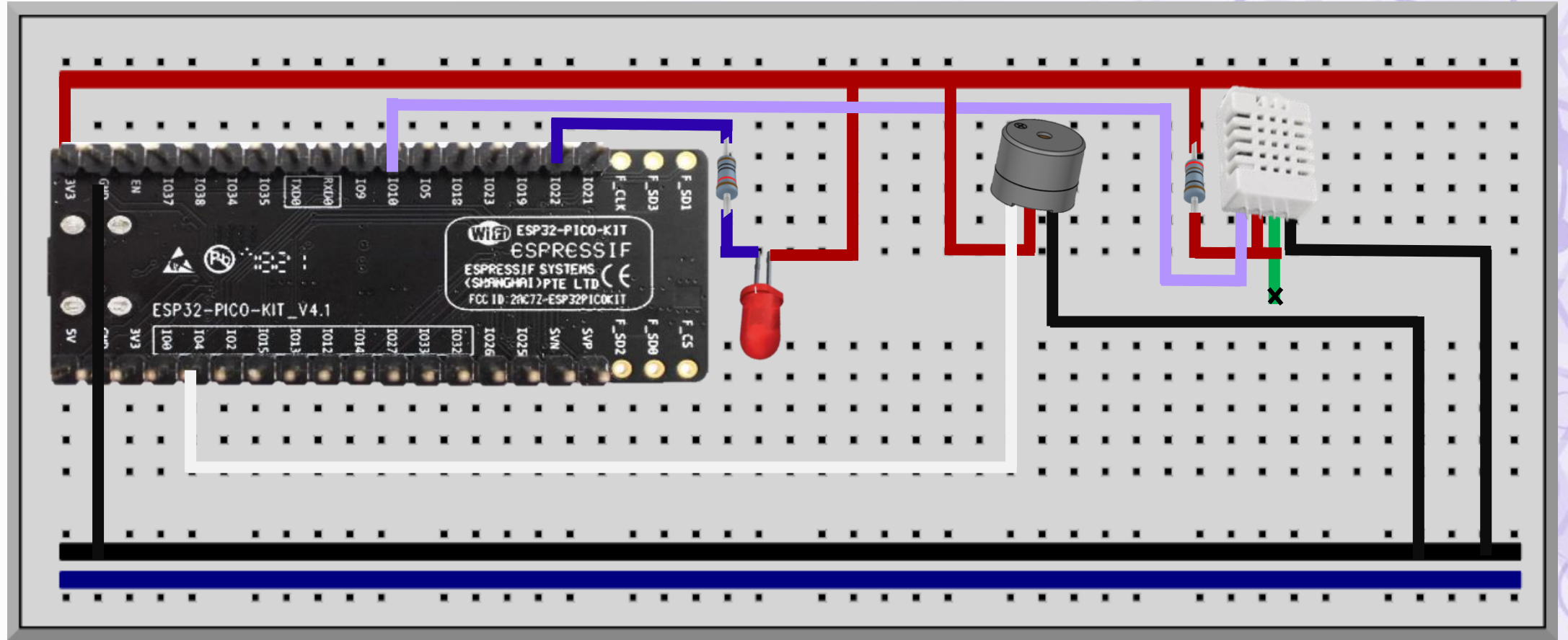- USB cable
- 2 x Resistor 210Ω
- 4 x Resistor 10KΩ

URLs

- Git:

  Link

- Drive

  Link

J2J – PART I

SYSTEM PICTURE