Where2

Code #LikeABosch

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Introduction

Aim

- Decrease the gas and electricity consumption while being comfortable

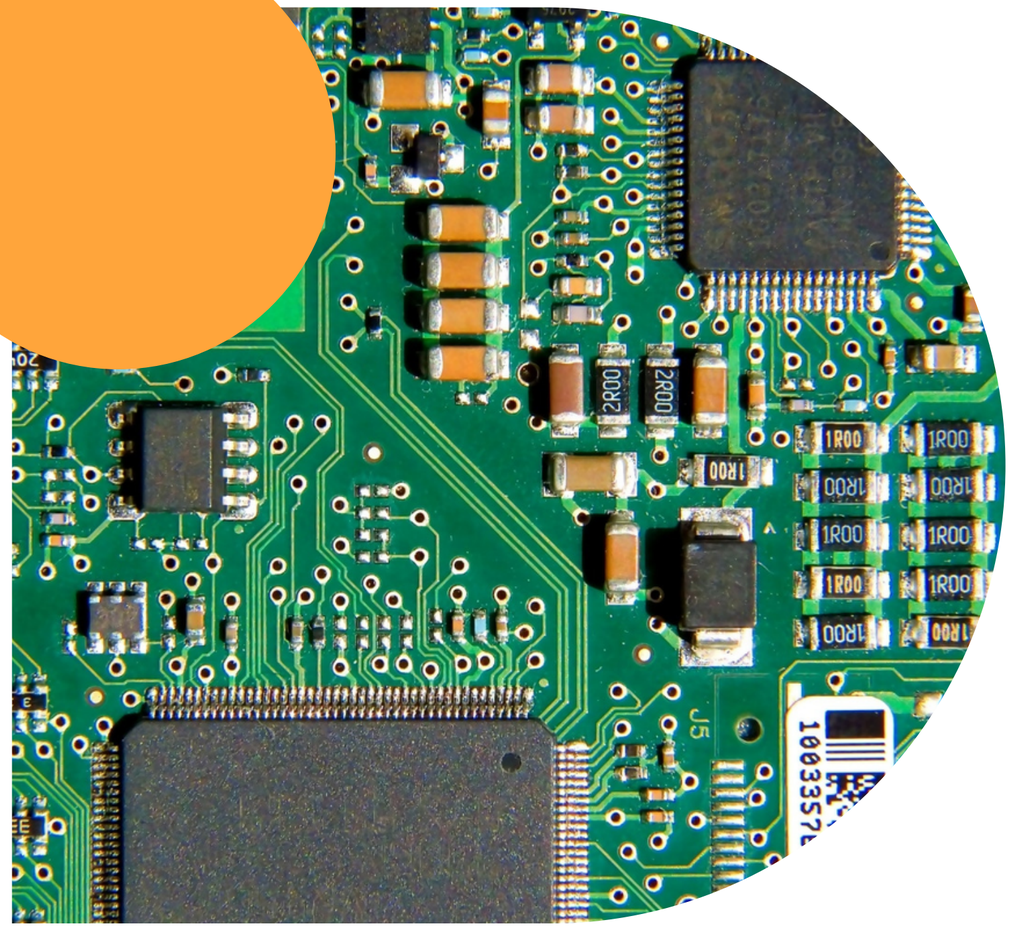
How

- Create a PCB with an ESP microcontroller

Example

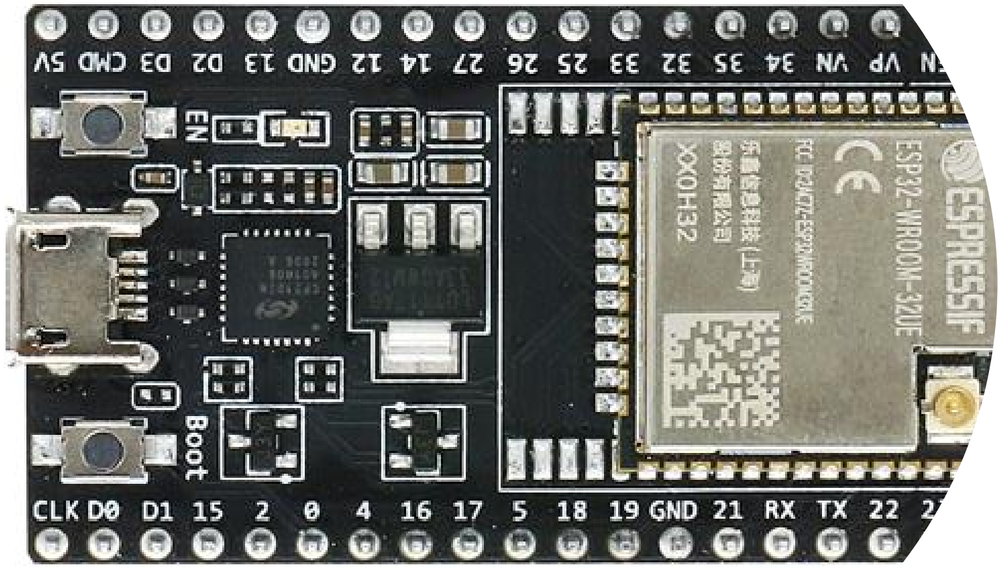
The house has a base temperature of 15 °C and a comfortable like 22 °C configured, we are going to predict by Markov Chain where and when the person is going to be during the day, and in that way, the room temperature is going to be sensed by a TMP126 sensor and raised by an actuator. We will also track the person's position using BLE connected to a smart band and when someone enters the room, the lights will turn on depending on the LDR sensor to measure light level.

Project Bases



- Markov Chain

- PCB
  - ESP32-WROOM-32,
  - 3 LDR sensors
  - 1 TMP126 sensor
  - 1 Low Power 2.4GHz Transceiver for ZigBee
  - 3 batteries



ESP32-WROOM-32

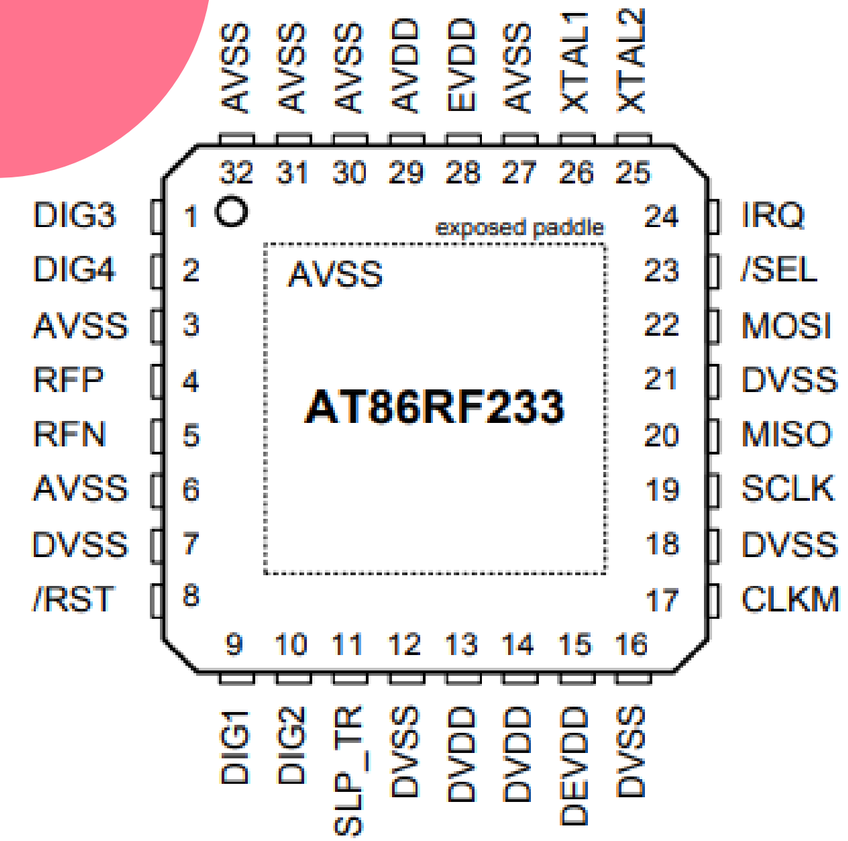
- Bluetooth Low Energy
- Easy to configure, program, and maintenance
- Add more features

TMP126 Low-Power, 0.25°C SPI Temperature Sensor

- Configurable precision (-+0.4°C)
- Cheap
- Low power
- SPI interface

LDR Photoresistor

- Sense the presence of light
- Easy to implement
- Cheap



ZigBee Transceiver (2.4GHz Transceiver for ZigBee)

- Short distance range*
- 15ms-30ms of delay
- Cheap
- Easy to configure and maintain
- Low-power consumption

Cost

19.38 euros (€) per board to develop 1000 considering the manufacture and the components

Thank you!