

# J'ai hacké ma chaudière...



**PYCON** FR 2023  
**BORDEAUX**

**TR** Verkest

## Thermostat



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# Disclaimer



Photo de [Martin Adams](#) sur [Unsplash](#)

# La chaudière



# GOALS

- Éviter de consommer inutilement (la nuit) sans devoir se déplacer dans la chaufferie
- Avoir une température d'ambiance constante
- Apprendre !



Photo de Cédric Dhaenens sur Unsplash



Photo de Sander Weeteling sur Unsplash

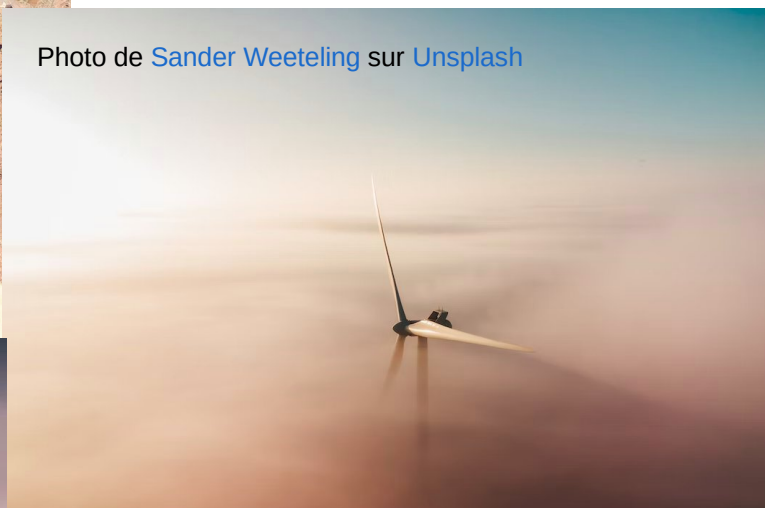


Photo de Josh Withers sur Unsplash

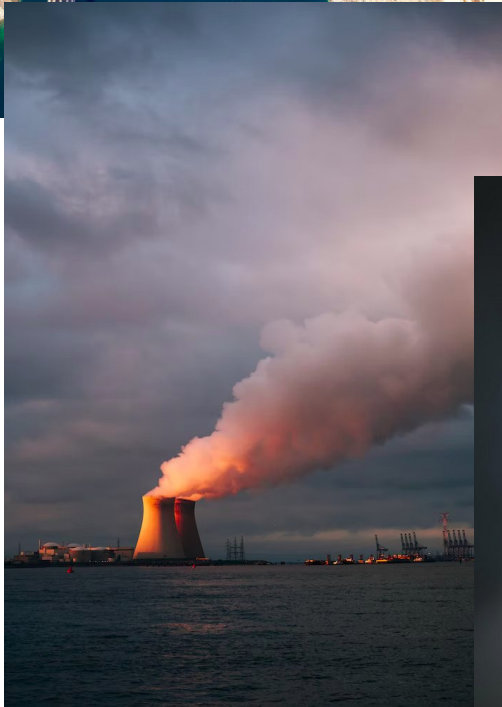


Photo de Mick Truyts sur Unsplash



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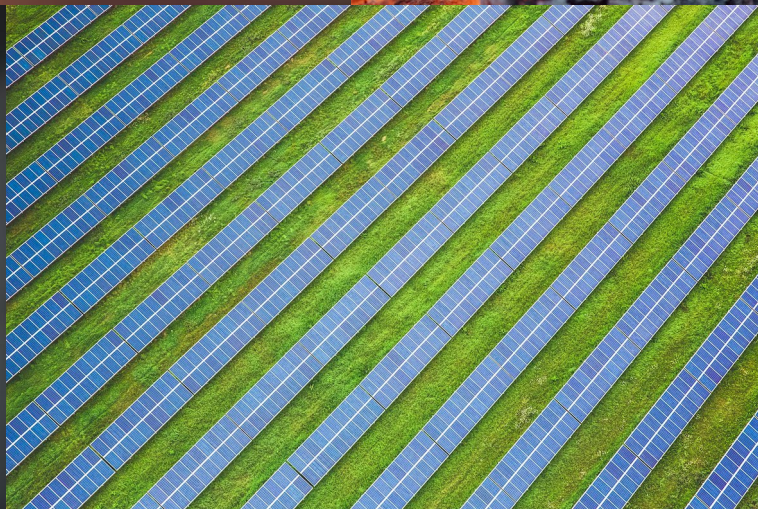
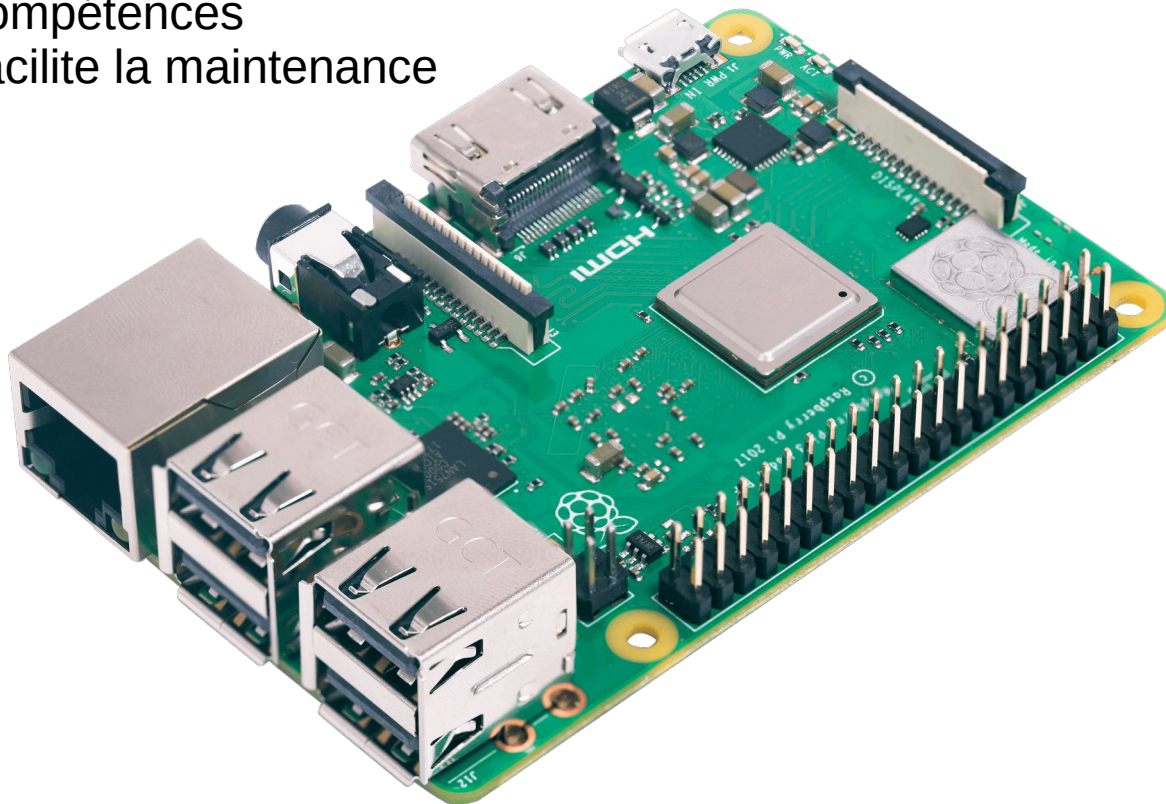


Photo de Markus Spiske sur Unsplash

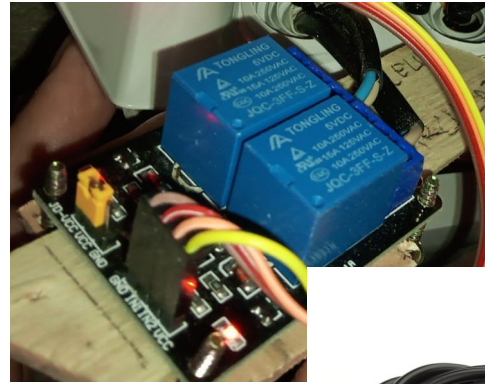
# RPi

- J'en avais d'avance
- Le fait d'avoir un système d'exploitation linux
  - Compétences
  - Facilite la maintenance



# Composants

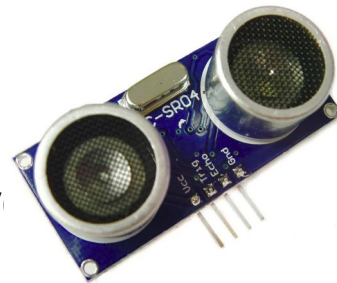
- Relais : Allumer / éteindre
  - Brûleur
  - circulateur



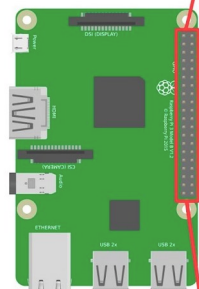
- Sonde de température :
  - Salon
  - Départ eau chaude
  - Retour eau chaude



- Capteur ultra-son: jauge cuv

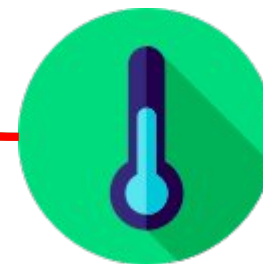


# Banc d'essai



3.3V PWR	1		2	5V PWR
GPIO2 (SDA1, I2C)	3		4	5V PWR
GPIO3 (SCL1, I2C)	5		6	GND
GPIO4 (GPIO_GCLK)	7		8	(UART_TXD0) GPIO14
GND	9		10	(UART_RXD0) GPIO15
GPIO17 (GPIO_GEN0)	11		12	(GPIO_GEN1) GPIO18
GPIO27 (GPIO_GEN2)	13		14	GND
GPIO22 (GPIO_GEN3)	15		16	(GPIO_GEN4) GPIO23
3.3V PWR	17		18	(GPIO_GEN5) GPIO24
GPIO10 (SPI0_MOSI)	19		20	GND
GPIO9 (SPI0_MISO)	21		22	(GPIO_GEN6) GPIO25
GPIO11 (SPI0_CLK)	23		24	(SPI_CE0_N) GPIO18
GND	25		26	(SPI_CE1_N) GPIO17
ID_SD (I2C EEPROM)	27		28	ID_SC (I2C EEPROM)
GPIO5	29		30	GND
GPIO6	31		32	GPIO12
GPIO13	33		34	GND
GPIO19	35		36	GPIO16
GPIO26	37		38	GPIO20
GND	39		40	GPIO21

broches GPIO



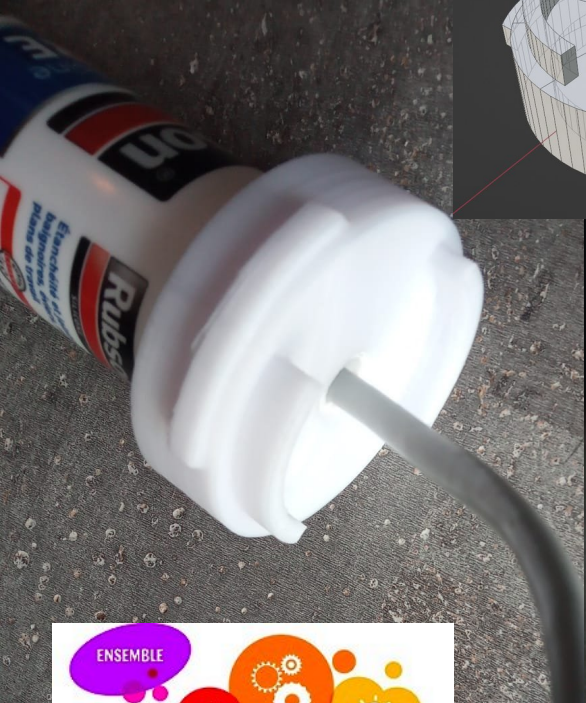
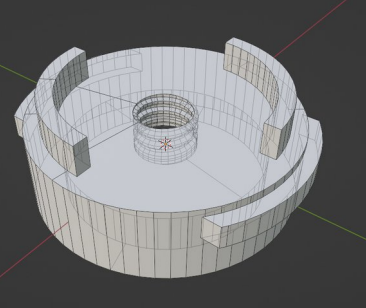
GPIO signifie « General Purpose Input/Output » (entrée/sortie à usage général).



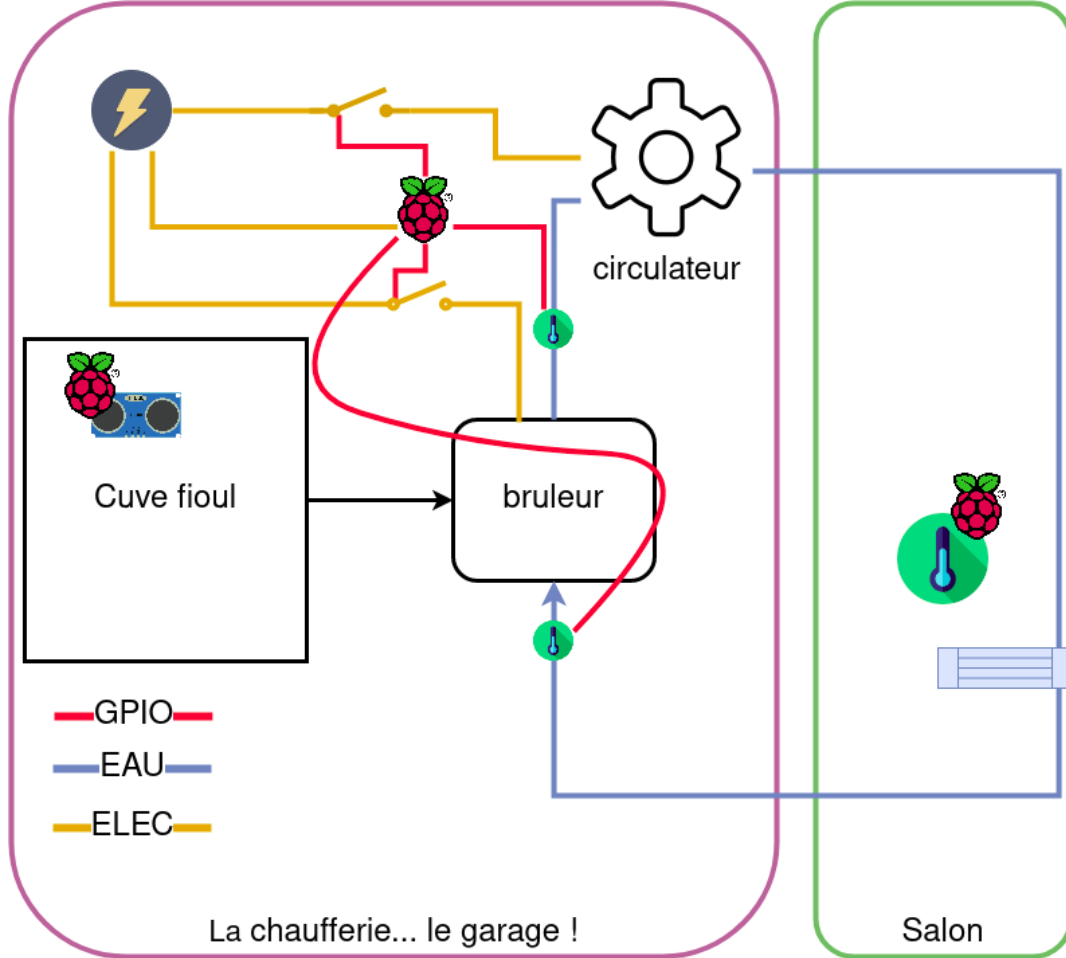


Mise en  
boite

Jauge



Gâtinais en transition



C Rafrâichir

Thermostat ▾

## Réglages

## Température minimale (°C)

- 17.5 +

## Confort

⌚ 06:00 ⌚ 21:30

- 20.3 +

## Relais

 Etat désiré du bruleur  Etat du bruleur  
13/02/2023 11:02 Etat désiré du circulateur  Etat du circulateur  
13/02/2023 11:02

## Températures

## Intérieur



## Extérieur



## Départ (°C)



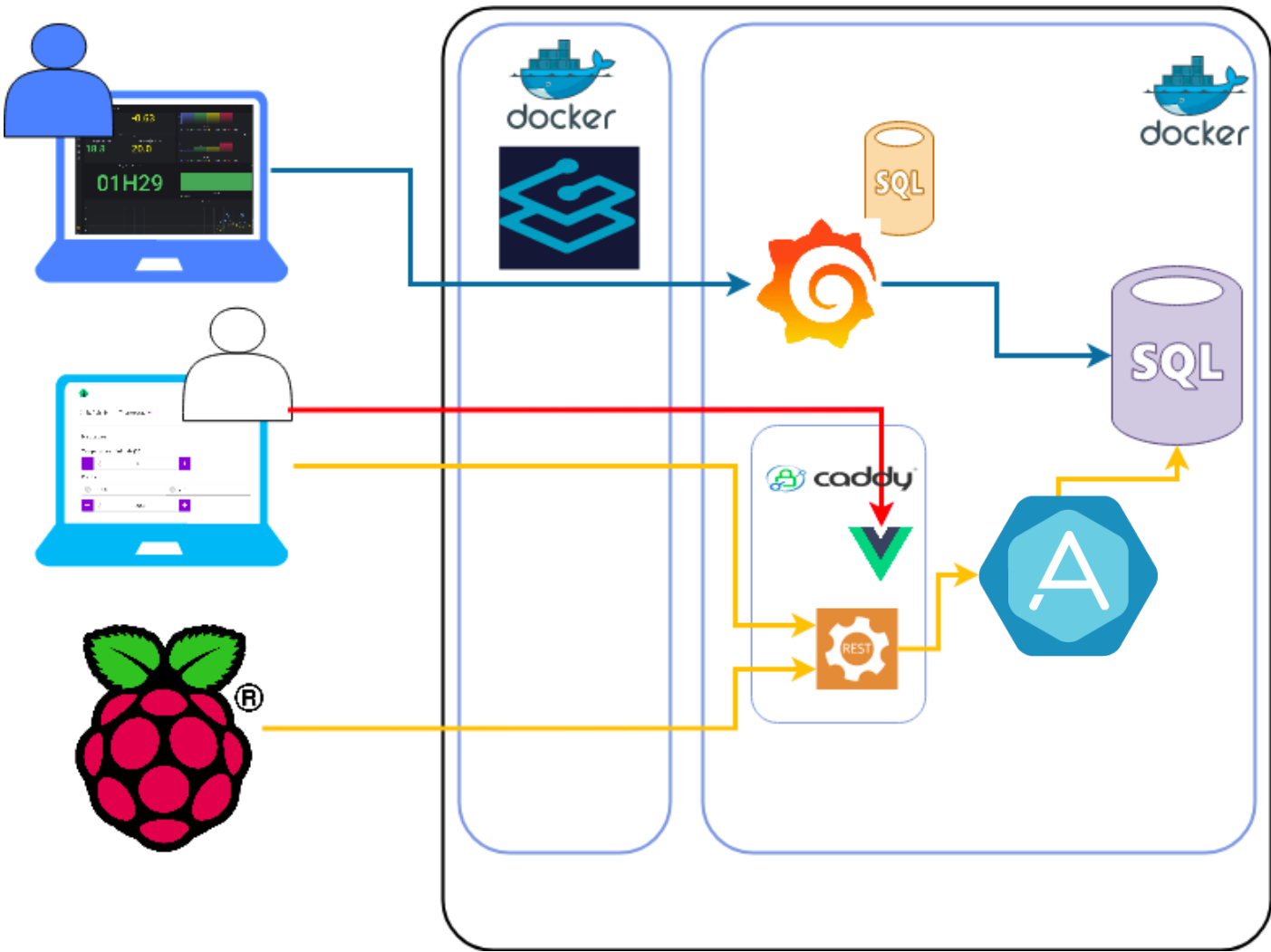
## Retour (°C)



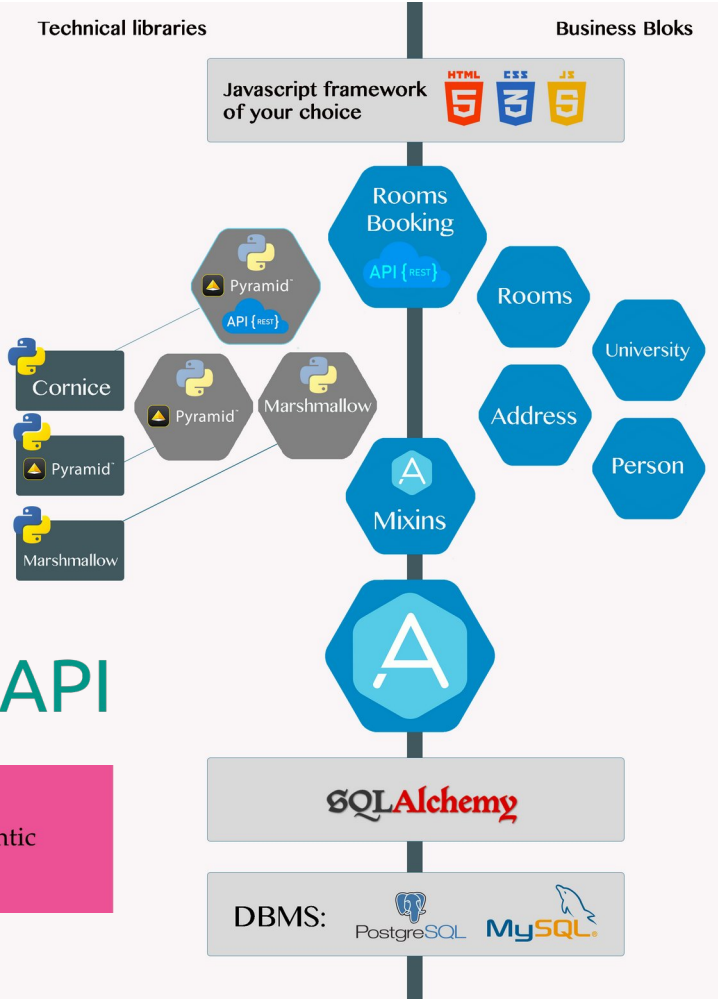
# Démo supervision



# Applications



# Librairies



 FastAPI



# Météo



<http://www.findu.com/citizenweather/citizenweather.html>







Photo de [Anem Maltsev](#) sur [Unsplash](#)

A stylized blue snake with a red tongue, positioned at the top left of the slide. The background features a faded image of a city street with buildings and a river, overlaid with large, colorful, swirling lines in shades of blue, orange, and red.

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FR  
**BORDEAUX** 2023

<https://github.com/petrus-v/home-thermostat>

**Merci**

**TR**Verkest