TEMPERATURE AND INVERTER MONITORING

UNIVERSITY OF TRENTO
EMBEDDED SOFTWARE FOR THE INTERNET OF THINGS

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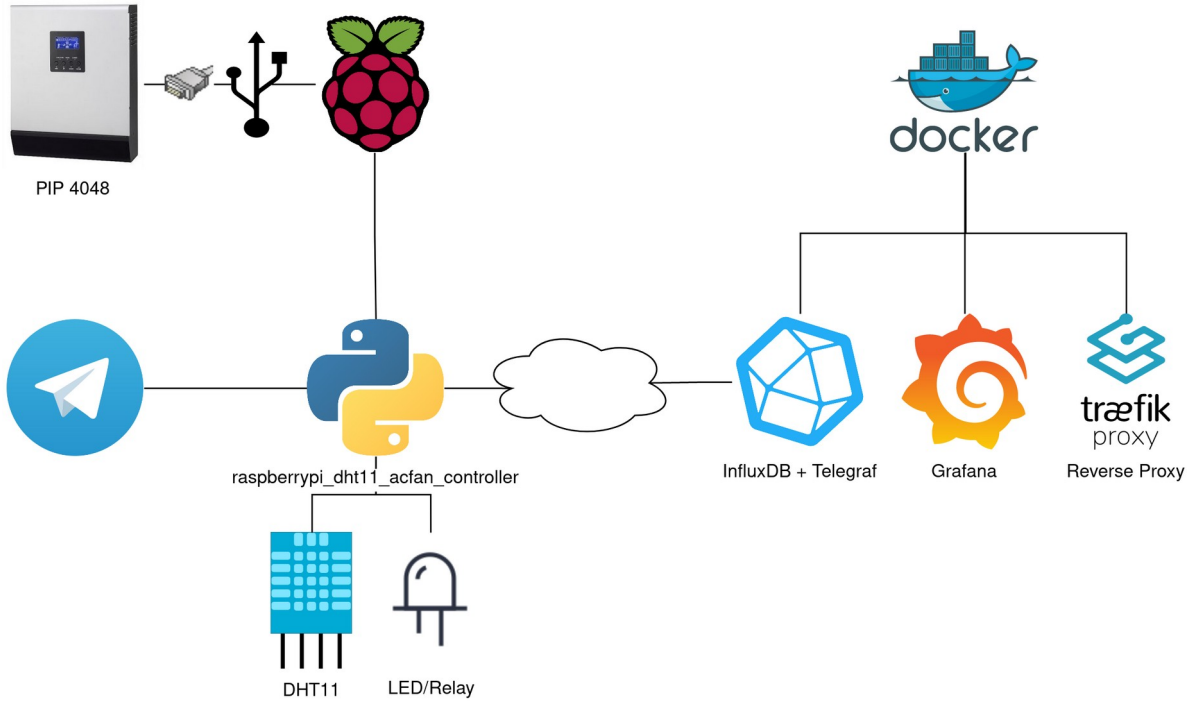
1. Problem Statement:

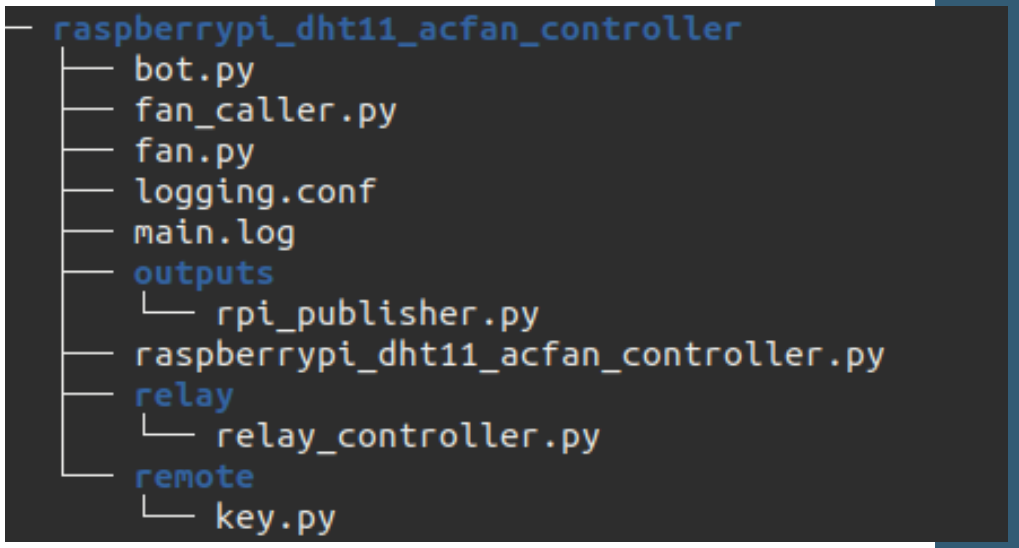
- Make a non IoT device an IoT device
- Automate room temperature management

2. Basic Working Scheme



3. Software Architecture

- When SIGTERM/KILL is received from the program:
  - Telegram’s thread kills itself, sends SIGUSR1 to fan_caller
  - fan_caller’s thread cleans GPiO and exit
- Threads communicate with a queue of fan status



4. Problems and Testing

Problems

- DHT11’s library discontinued
- RJ45-USB com cable
- Issues solved asking on forums

Testing

- Software was tested on the field and with hardcoded variables
- For safety a led was used instead of a relay

5. Conclusions and Future Work

- Make more responsive the package
- Add a Buzzer that rings when Active Power (AC) overshoots a threshold
- Add sensors in other rooms to monitor temperature and humidity