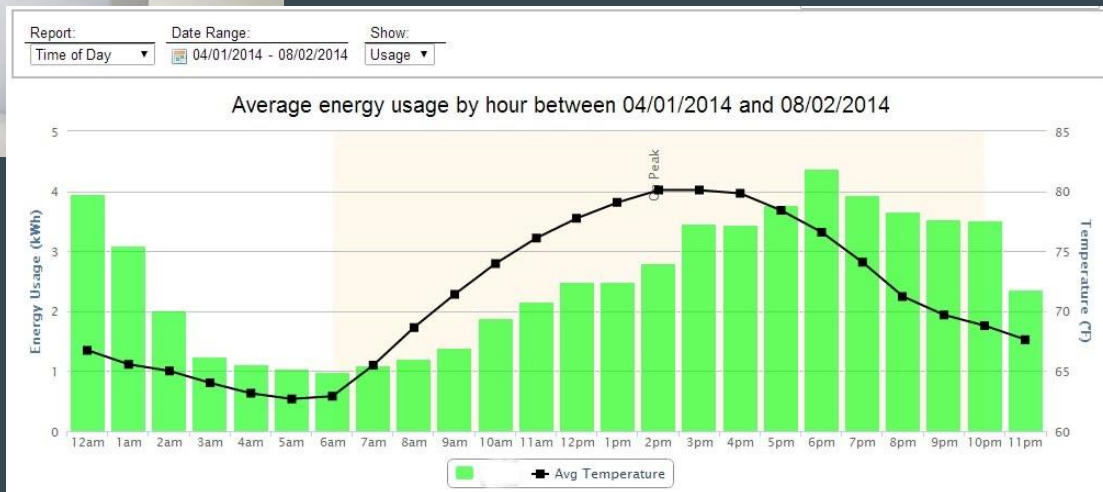


# Smart Energy Meter (SEM)



By Sander Speetjens  
Electronics ICT  
Embedded Software

# Idea

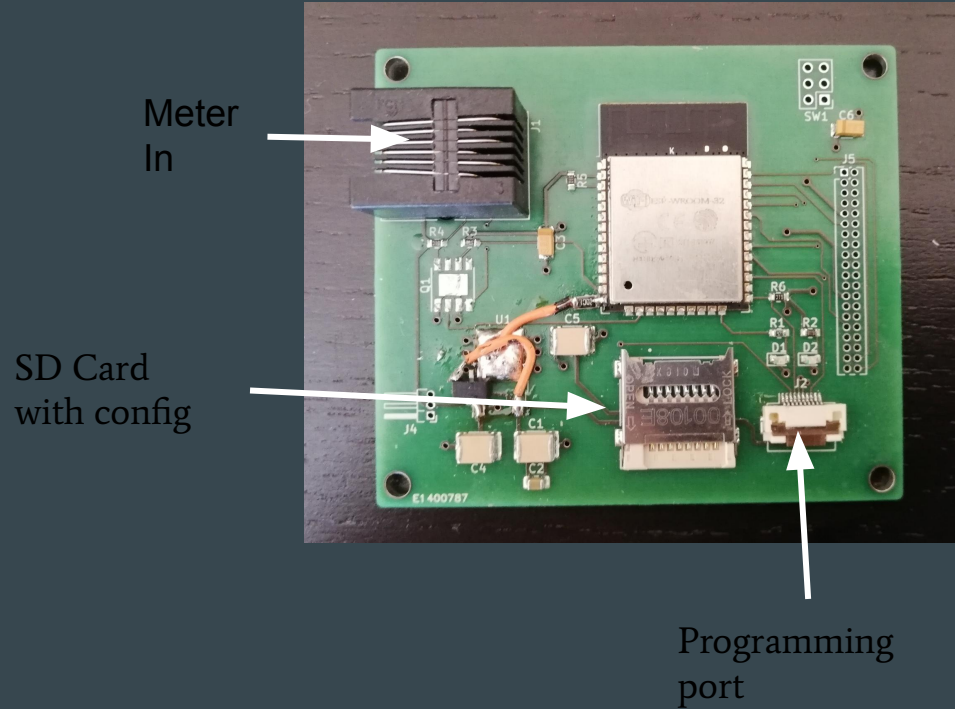


# Implementation



# Implementation: Meter side

- Open Drain -> add pull up
- Read UART (inverted)
- Decode datagram
- Send Data via HTTP Post



# Implementation: Database

- MariaDB
- PHP
- Apache2 (HTTP web server)

Data management:

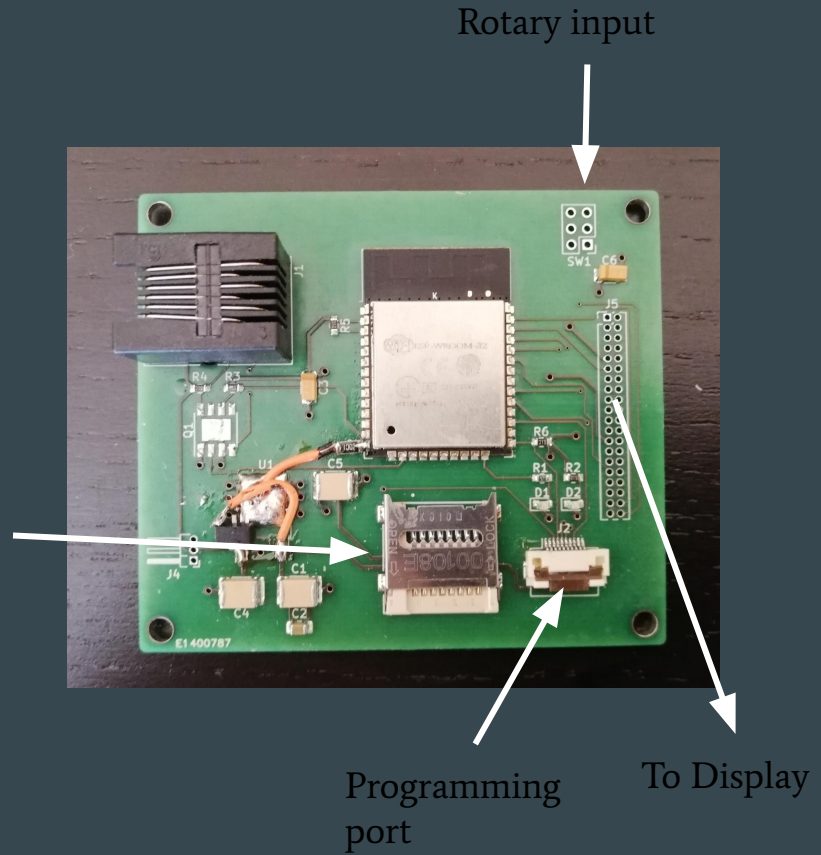
- Retrieve
- Write



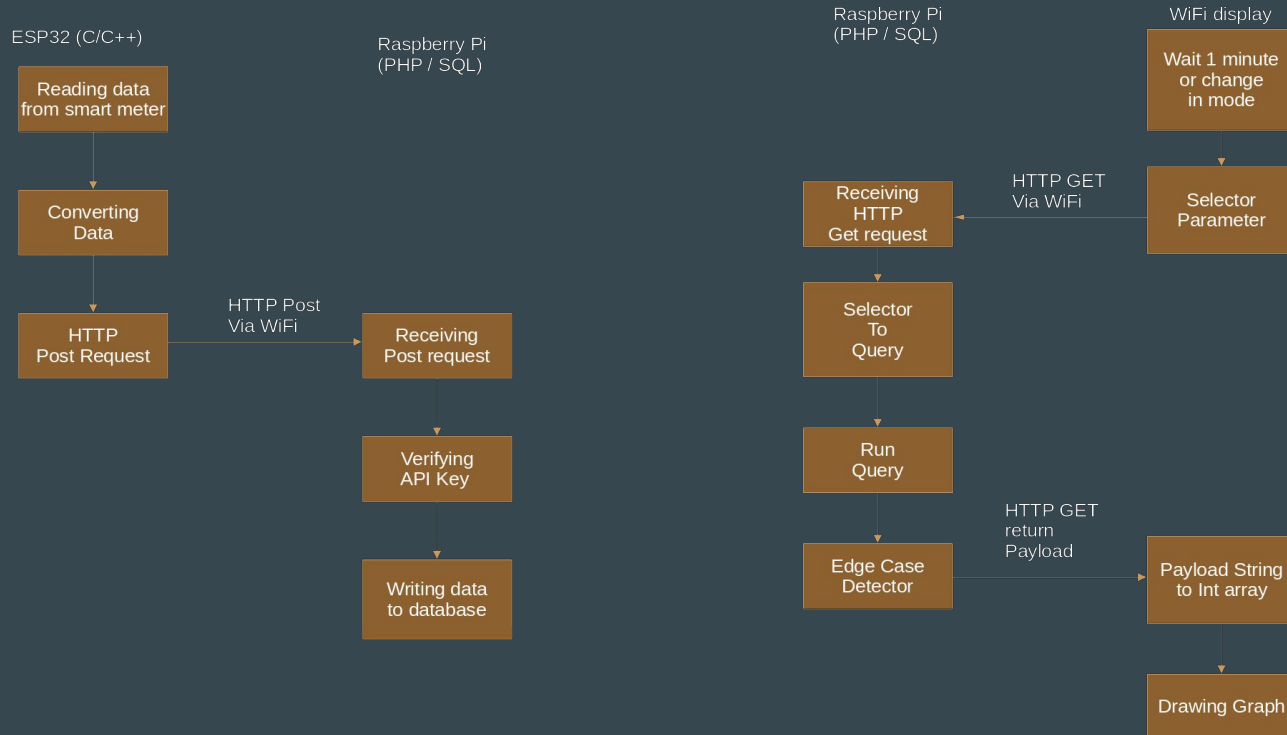
# Implementation: Visualisation

- Retrieving data
- Converting
- Draw graph
- Rotary Encoder

SD Card  
with config



# Implementation: Block Diagram



# Challenges / Issues

- I messed a lot up on my PCB
- Ordering wrong components
- Forgetting to buy a component
- Declaring a variable as static
- TLS lib necessary for HTTP?



?

...

Demo