SPRINT 3

a lot of invisible work

LAST WEEK

Time spent: 18.5h

What I learned

- Encoder pitfalls
- animations in matplotlib
- bluepad32 wireless gamepad library
- CMake pitfalls

BIGGEST SUCCESS

Bluetooth connection establishment :D (took a while, but could have been much worse)

BIGGEST FAILURE

Trying to write a motor PID controller (it's much more difficult than I thought)

SPRINT OVERVIEW

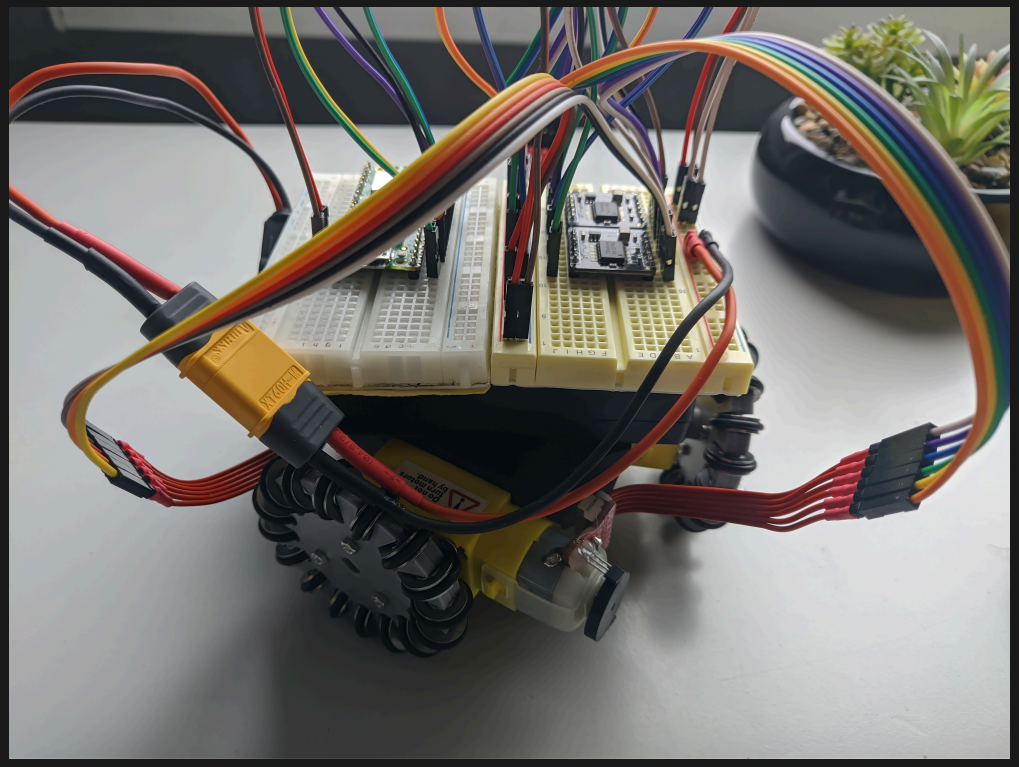
- **Planned**:
  - 12 Cards
  - 27h
- **Current status**:
  - 11 Cards done, 1 card backlog
  - 29h

TIME ESTIMATES

- 4 cards matched exactly
- 4 cards ± 0.5h
- 1 card + 4h :/

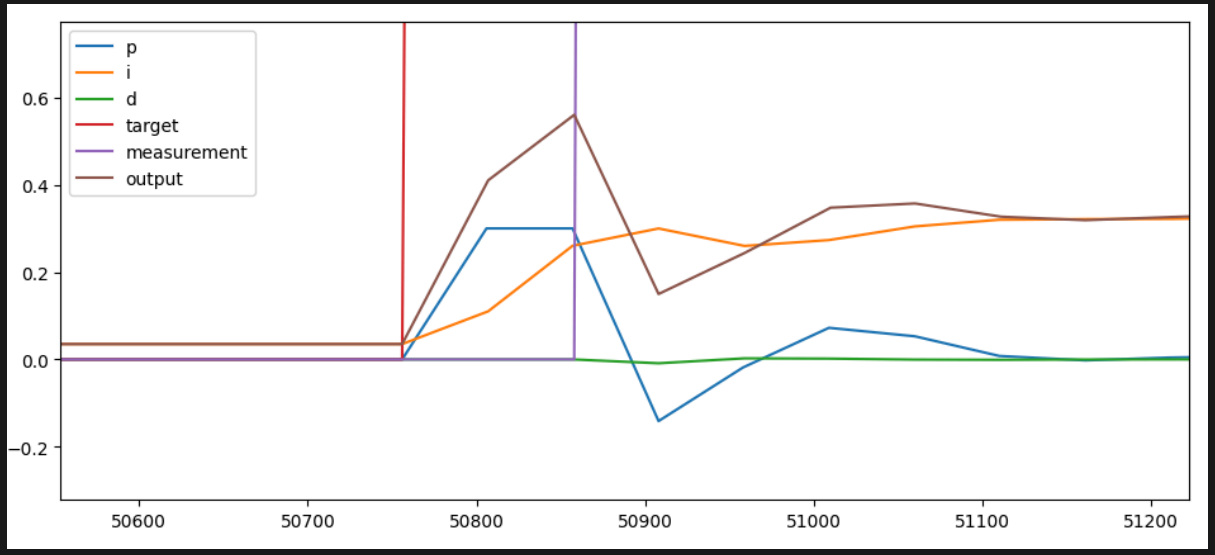
BEST CARDS

ADD 3RD MOTOR & MAKE 6-PIN CONNECTORS



omnidirectional movement works very well :D

MAKE PLOTTING/PID TUNING UTILITY



dynamic setting of parameters and simultaneous plotting help a lot

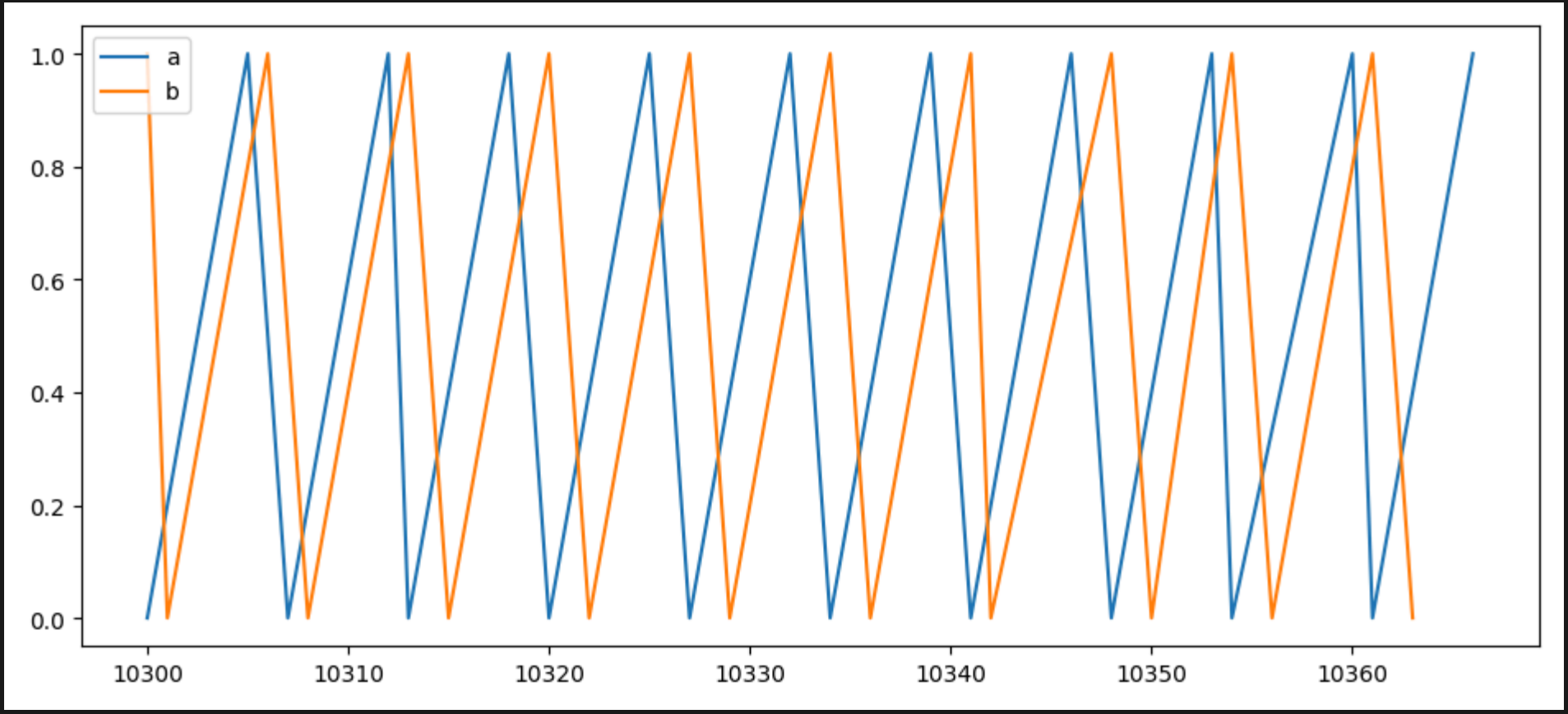
WORST CARDS

IMPLEMENT ENCODER PROCESSING

- 2h instead of 1
- reasons:
  - interrupt handling less straightforward then expected in C++

IMPLEMENT MOTOR PID CONTROLLER

- Implementation done almost in time (2.5h)
- But debugging took **much** longer than expected (and controller still not fully working)
- reasons:
  - wrong assumptions about encoders
  - underestimated PID complexity


a
b
1.0
0.8
0.6
0.4
0.2
0.0
10300
10310
10320
10330
10340
10350
10360

NEXT SPRINT THE WORK WILL PAY OFF :)