PA3 Report

Design

Illustration of ZMQ push-pull sockets (where do we need sleep):
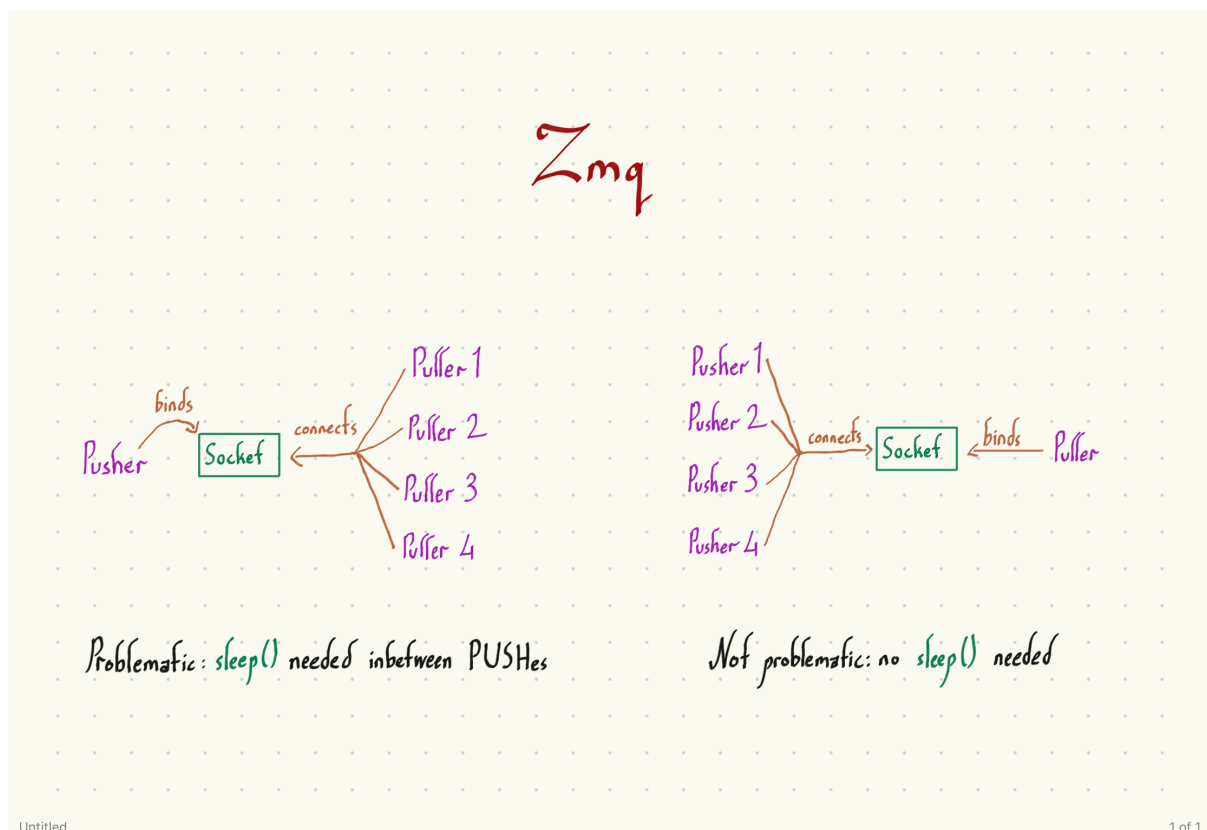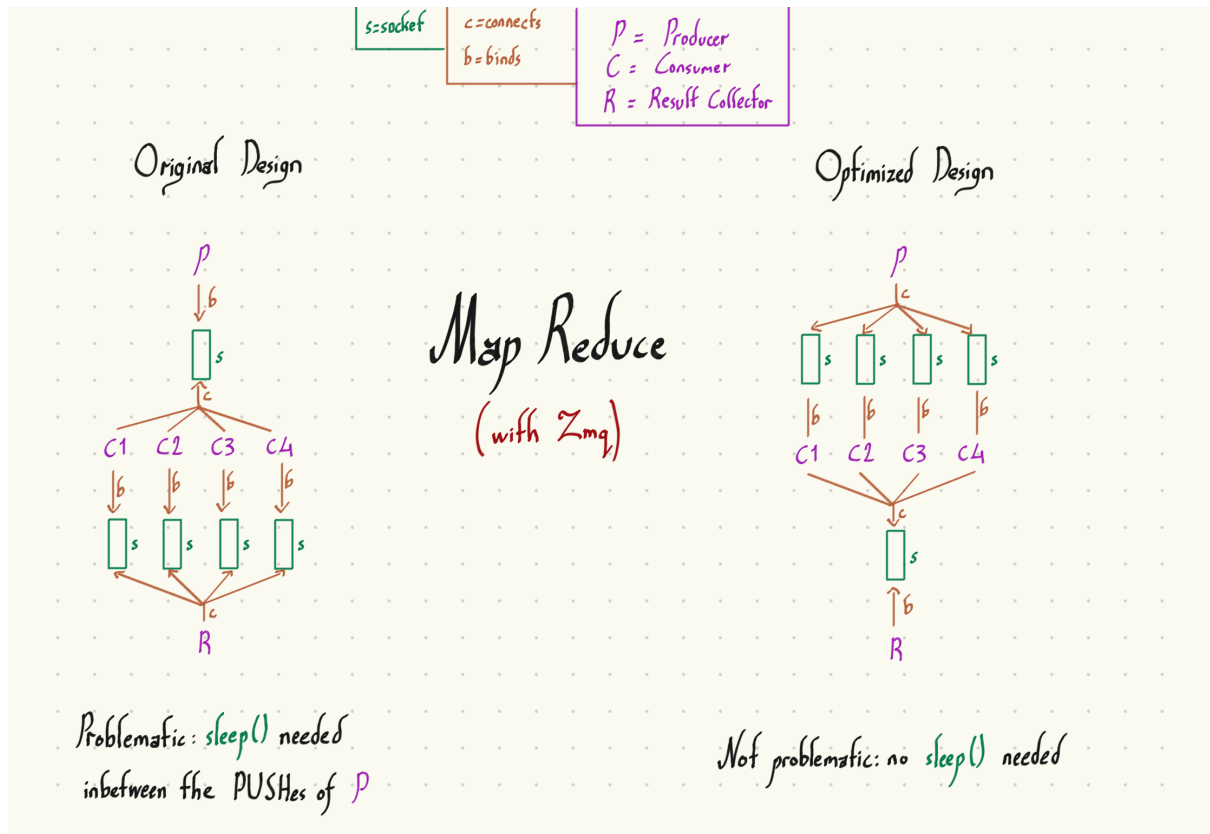
Illustration of 2 designs for MapReduce with ZMQ push-pull sockets:

s=socket | c=connects / b=binds | P = Producer / C = Consumer / R = Result Collector

Original Design

P
↓ b
□ s
↑ c
C1   C2   C3   C4
↓ b   ↓ b   ↓ b   ↓ b
□ s   □ s   □ s   □ s
↑   ↑   ↑   ↑
c
R

Problematic: sleep() needed inbetween the PUSHes of P

Map Reduce
(with Zmq)

Optimized Design

P
↓ c
□ s   □ s   □ s   □ s
↓ b   ↓ b   ↓ b   ↓ b
C1   C2   C3   C4
↓
c
□ s
↑ b
R

Not problematic: no sleep() needed

Code

In the code, optimized design is being followed for the performance. But the original design is also implemented, it's still present in the same code files, but left as commented out.