







A blue speech bubble with a white outline, pointing towards the bottom right. The word "DONE" is written in white, bold, capital letters in the center of the bubble.

**DONE**



A blue speech bubble with a white question mark and the word 'ORDER?' inside.

**ORDER?**



MELTDOWN & SPECTRE FOR NARRATIVE PEOPLE

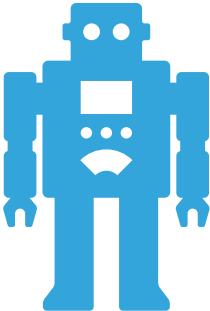
CONFIDENTIALBURGLING - SERIAL, IN ORDER EXECUTION



1

5







waiter













Prizzen  
Ovorn

Burgherrin





conference machine





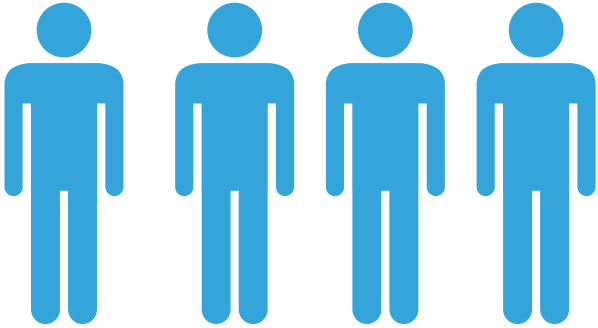


- ▶ One customer<sup>1</sup> after another (**in order**)
- ▶ Each part of the order <sup>2</sup> executed **serially**

I.e. first the burger, then the coffee

- ▶ PRO: Easy to implement and understand
- ▶ CON: Slow because resources<sup>3</sup> not utilised fully

<sup>1</sup> customer == CPU instruction    <sup>2</sup> part ==  $\mu$ OP - micro operation    <sup>3</sup> oven, grill, coffee machine



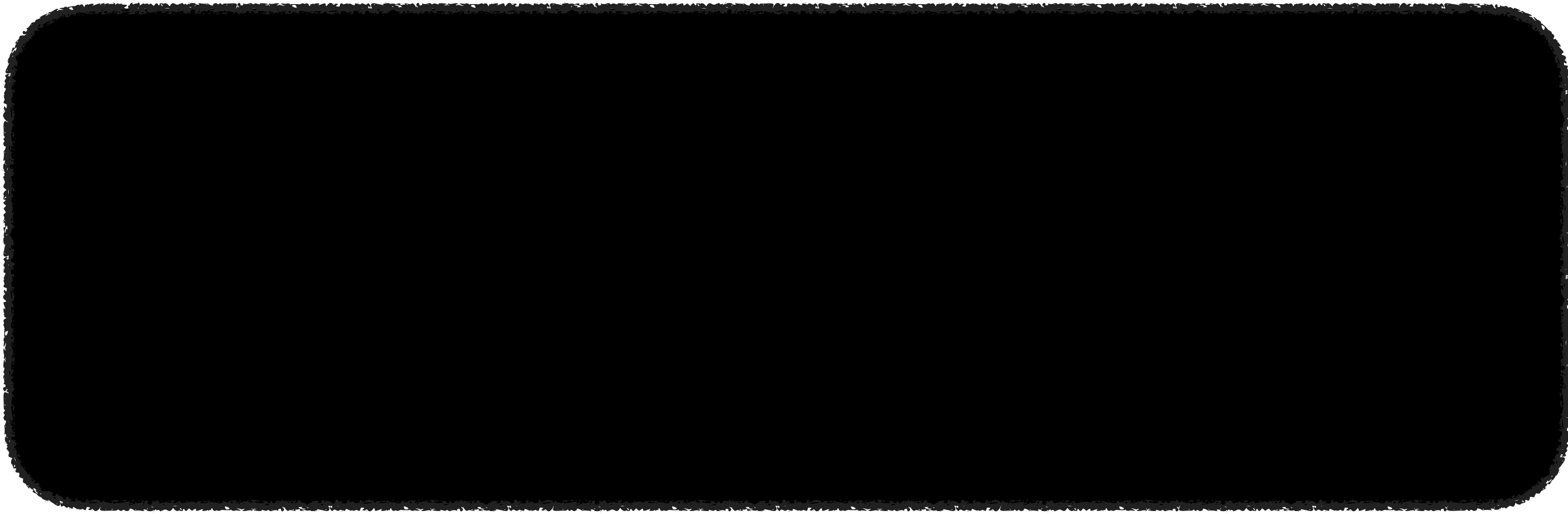
► Decode instruction into  $\mu$ OPs ("Burger", "Coffee")

► Schedule props

► run 1st  $\mu$ OP (grill the burger)

► run2nd  $\mu O P$  (brew coffee, serial execution)

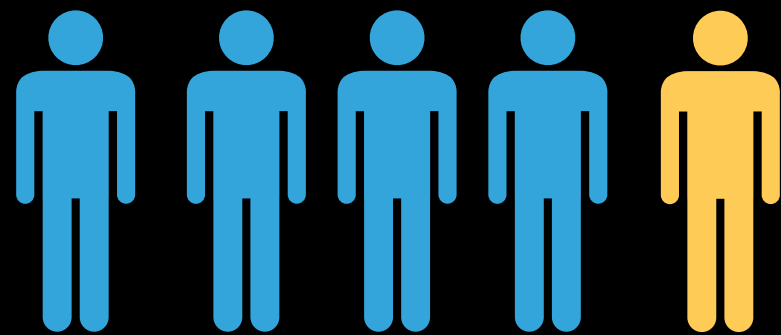
► Retire instruction (customer)



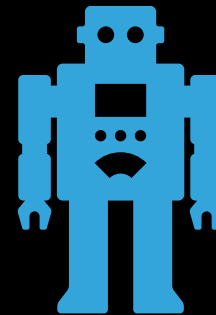


- ▶ Decode instruction into  $\mu$ OPs ("Burger", "Coffee")
- ▶ Schedule  $\mu$ OPs
  - ▶ run 1st  $\mu$ OP (grill the burger)
  - ▶ run 2nd  $\mu$ OP (brew coffee, serial execution)
- ▶ Retire instruction (customer)

## CONFIDENTIAL BURGERS INC. : PARALLEL, IN ORDER EXECUTION



Customer



Waiter



Pizza oven

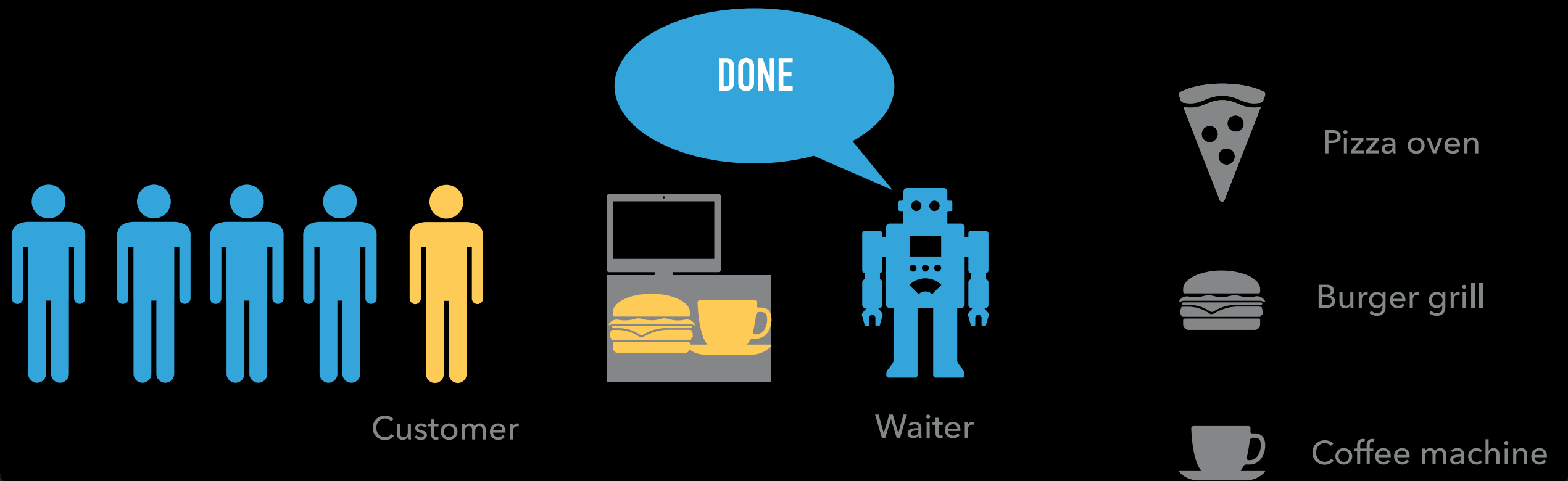


Burger grill



Coffee machine

## CONFIDENTIAL BURGERS INC. : SERIAL, IN ORDER EXECUTION



- ▶ One customer<sup>1</sup> after another (**in order**)
- ▶ Each part of the order <sup>2</sup> executed **serially**

I.e. first the burger, then the coffee

- ▶ PRO: Easy to implement and understand
- ▶ CON: Slow because resources<sup>3</sup> not utilised fully

<sup>1</sup> customer == CPU instruction    <sup>2</sup> part ==  $\mu$ OP - micro operation    <sup>3</sup> oven, grill, coffee machine