











### MELTDOWN & SPECTRE FOR NORMAL PEOPLE

## CONFIDENTIAL BURGERS INC. : PARALLEL, OUT OF ORDER EXECUTION



#### Customer

Waiter









#### Pizza oven

### Burger grill



### Coffee machine









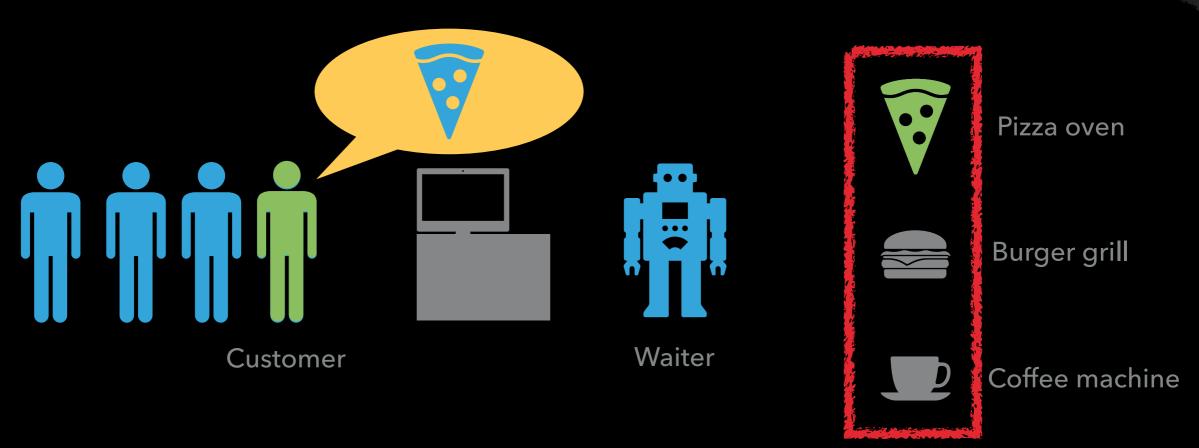


Multiple customers' orders <u>executed in parallel</u> and <u>delivered</u> (retired) in order I.e. multiple orders prepared at the same time PRO: Faster because resources are utilised even better CON: More difficult to implement

## <sup>1</sup> this is called *superscalar*



# CONFIDENTIAL BURGERS INC. : PARALLEL, OUT OF ORDER EXECUTION

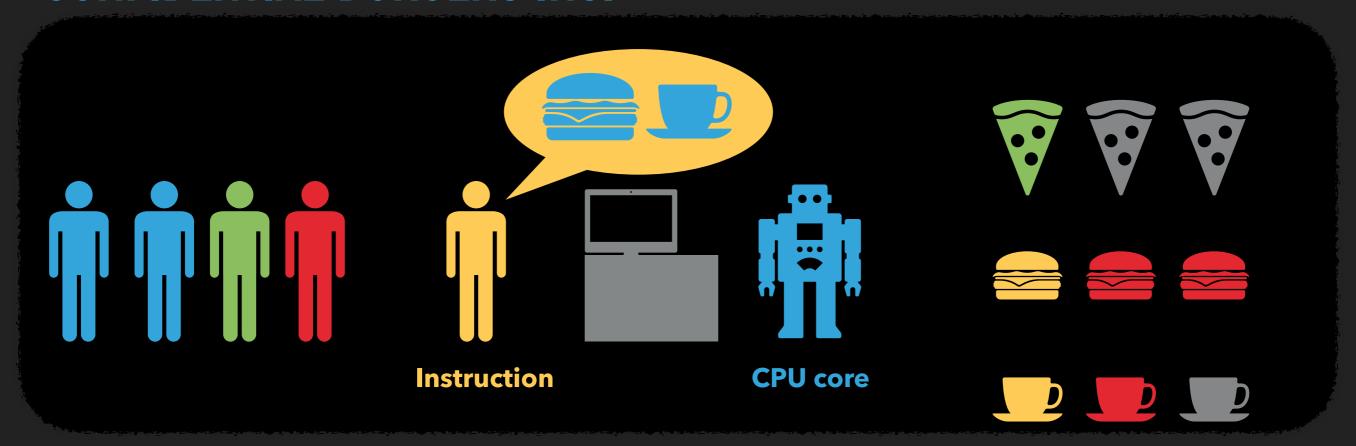


▶ Multiple customers' orders <u>executed in parallel</u>¹ and <u>delivered</u> (retired) <u>in order</u>

I.e. multiple orders prepared at the same time

- PRO: Faster because resources are utilised even better
- CON: More difficult to implement

# **CONFIDENTIAL BURGERS INC.**



Adding more resources increase parallelism & throughput. This is all on one CPU core.