





## MELTDOWN & SPECTRE FOR NORMAL PEOPLE

# CONFIDENTIAL BURGERS INC. : ORDER IS IMPORTANT

































The green instruction will finish before the red instruction. The CPU ensures that red is seen before green.

### **CPU** core













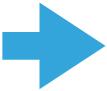






## Actual µOP execution order

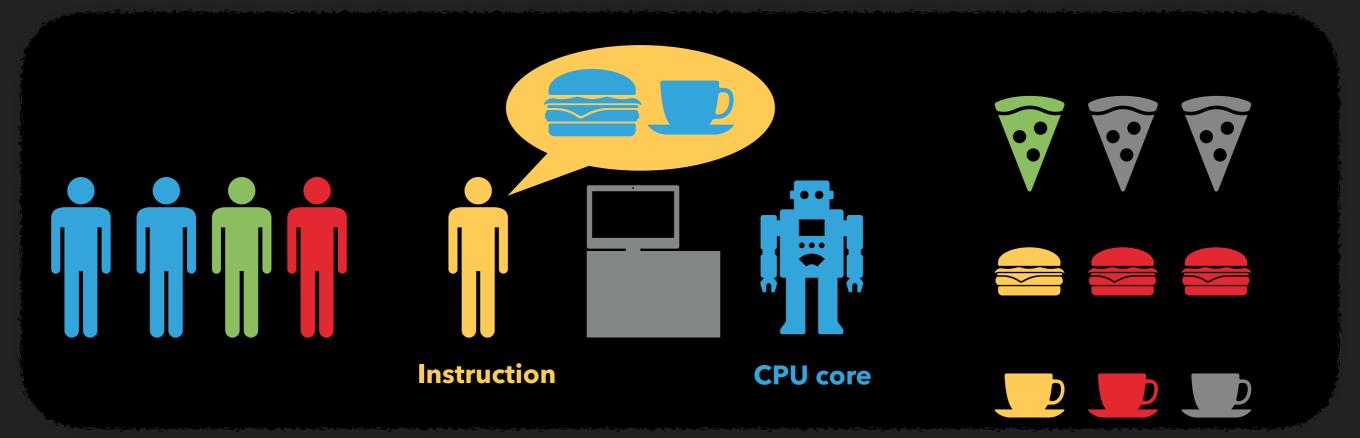
## Instruction execution order as seen





# WHY DID MELTDOWN & SPECTRE HAPPEN?

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The green instruction will <u>finish</u> before the red instruction.

The CPU ensures that red is seen before green.

