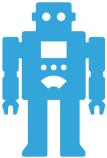




MELTDOWN & SPECTRE FOR NORMAL PEOPLE

SPECTRE: SPECULATIVE EXECUTION



























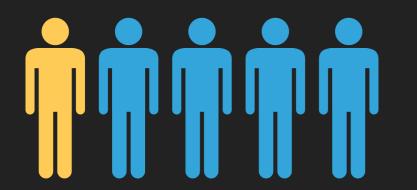
The CPU can improve the coffee machine utilisation by speculatively brewing the coffee for

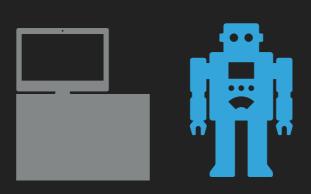
This is very similar to the effect seen in Meltdown.

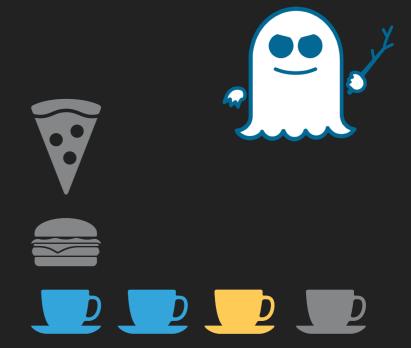
In the **Meltdown** attack the CPU knows the next instruction (order) and asynchronously checks the permissions

In **Spectre** the CPU guesses the next instructions based on heuristics

SPECTRE: SPECULATIVE EXECUTION







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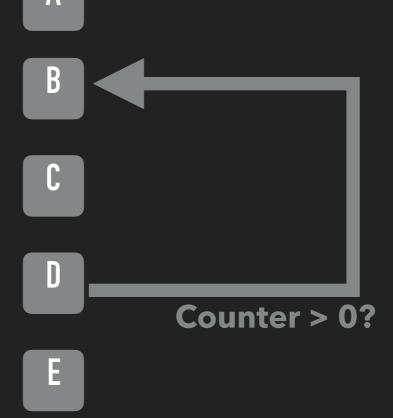
This is very similar to the effect seen in Meltdown.

- In the Meltdown attack the CPU knows the next instruction (order) and asynchronously checks the permissions
- In **Spectre** the CPU <u>guesses the next instructions based</u> on heuristics

SPECTRE: SPECULATIVE EXECUTION



3 Counter



COUNTER

Some variable used in branch

A B ... E

Instructions

A

Currently active instruction



Conditional branch