



**Exeute**

- Example **ADDI**:
  - Bits in `$rd` are overwritten with `$rs1 + imm`.
  - `PC = PC + INSTRUCTIONSIZE`.
  - Used for initialization - loading constants into registers.


semantics: 64-bit unsigned addition with  
wrap-around semantics



# Realize...

- This is how virtually every general-purpose processor operates.
- Instructions only have a tiny effect on the overall machine state.
- What makes modern computation so powerful is:
  - the incredible **speed**.
  - the enormous size of **memory**.

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