Pipeline Stages

- Instruction Fetch (IF).
  - Load instruction into Instruction Register (IR).
  - Increment PC by 4.
- Instruction Decode (ID).
  - Determine what instruction it is.
  - Read register file.
  - Sign-extend immediate operand (if any).
- Execute (EX)
  - Load/Store: Calculate address.
  - R type: Execute.
  - I type: Execute.
  - Conditional branch: Calculate address to branch to.
- Memory (MEM)
  - Load: Read items from memory.
  - Store: Write into memory.
  - Conditional branch: If branch condition is satisfied, branch; otherwise increment PC.
- Write Back (WB)
  - Update register file for R, I, and load instructions.