Single-Stage Schematic

Datapath — Single Cycle

IMEM ←— PC — IF stage

IMEM —— Instruct. 32 bits —→ IF stage

IF stage ↓ ID stage

ID stage —— READ —→ Register File

Register File —— rs1, rs2 data —→ ID stage

ID stage ↓ EX stage (ALU)

EX stage (ALU) ↓ MEM stage

MEM stage ←— Load —— DMEM

MEM stage —— Store —→ DMEM

MEM stage ↓ WB stage (Reg)

WB stage (Reg) —— Write result —→ Register File

WB stage (Reg) ↓

PC = PC+4 OR HALT