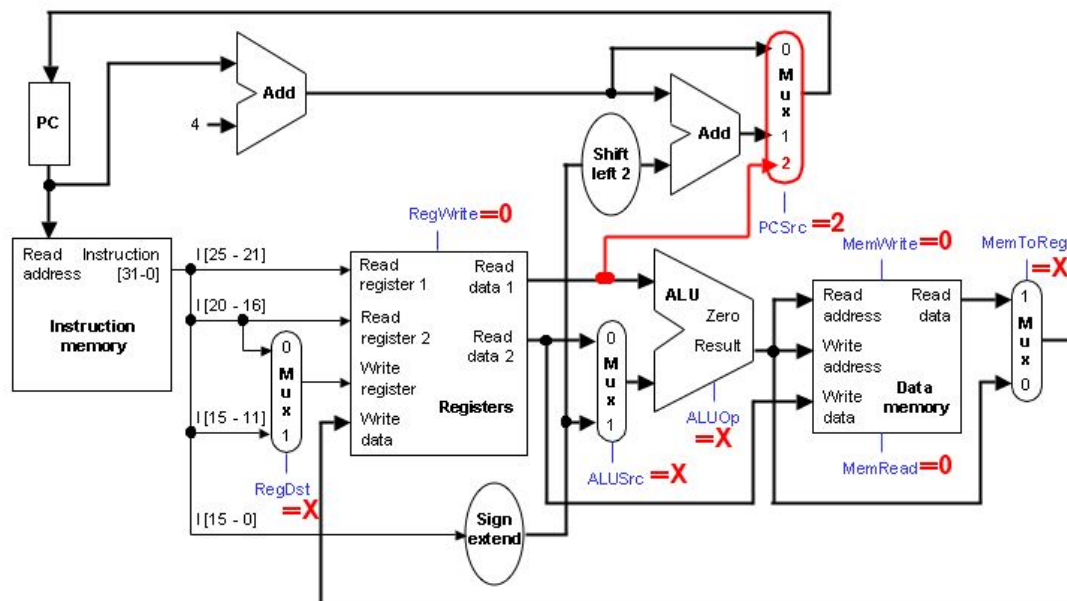


1. **Implementing jr:** Expand the PCsrc mux to take a third input (thus, it becomes a two-bit control signal). The third input will be from the Read data 1 line – see the diagram:



2. **Implementing lui:** Insert a “Shift Left by 16” unit which takes the 16-bit immediate as its input (it doesn’t matter whether this is before or after the “Sign Extend” unit). The resulting 32-bit signal is routed to the 3rd input of an extended MemToReg multiplexor.

