HOMEWORK 1. ISA 2 (1/1 point)

What is the result of the LC-3 BR instruction 0000000000000000?

- A branch to location 0 in memory.
- No operation is performed. ✔
- The program gets put into an endless loop, which causes the computer to hang.
- The program restarts at the beginning.

EXPLANATION

Since none of the n z p bits are set in the instruction, the branch is never taken so no operation is performed. This is referred to as a NOP or NOOP instruction.

Final Check | **Save** | Hide Answer | *You have used 1 of 2 submissions*

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HOMEWORK 2. ISA 2 (1/1 point)

What is the result of the LC-3 BR instruction 0000111111111111?

- A branch to location 0 in memory.
- No operation is performed.
- The program gets put into an endless loop. ✔
- The program restarts at the beginning.

EXPLANATION

Since all of the n z p bits are set in the instruction, the branch is always taken. The sign extended offset of -1 gets added to PC+1, which causes the BR to be re-fetched and re-executed endlessly. This “endless loop” will cause the computer to “hang” until the machine gets reset. Don’t make this mistake in your own programs.

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