LE10.1.1: Branch Offset

1/1 point (ungraded)

1. A BR instruction at location 0×1000 branches to 0×2000. If the literal field of that instruction is incremented by 0×10, where will the modified instruction transfer to?
   Branch target for modified BR (HEX): 0x
   2040 ✔
2. A BR instruction at location 0×1000 branches to 0×2000. If the binary representation for that BR were moved to location 0×1400 and executed there, where will the relocated instruction branch to?
   Branch target for relocated BR (in hex): 0x
   2400 ✔

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✔ Correct (1/1 point)

LE10.1.2: Beta Assembly

1/1 point (ungraded)

A line in an assembly-language program containing “ADDC(R1,2,R3)” is changed to “ADDC(R1,R2,R3)”. Will the modified program behave differently when executed?

- ○ Yes
- ◉ No
- ○ Can't Tell

✔

Explanation

The assembler will evalute the constant 2 and the symbol R2 to the same integer value 2 and use that to fill in the literal field. So both will result in the same instruction encoding.

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Answers are displayed within the problem

LE10.1.3: Symbol Table

0.0/1.0 point (ungraded)

When the assembler processes the program shown below, it builds a symbol table that gives the value of each symbol. Assume that the LD instruction in location 0 of main memory.

```
        LD(R31,N,R0)
if:     BNE(R0,else,R31)
then:   SUBC(R0,1,R0)
        BEQ(R31,end,R31)
else:   ADDC(R0,1,R0)
end:    ST(R0,M,R31)

N:      LONG(10)
M:      LONG(0)
```

Please give the values found in the symbol table after the assembler has finished assembling the program. Enter your answers as a sequence of hex digits.

Value for symbol "if": 0x

Value for symbol "then": 0x

Value for symbol "else": 0x

Value for symbol "end": 0x

Value for symbol "N": 0x

Value for symbol "M": 0x

Value for symbol "R31": 0x

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