LE1.4

LE1.4.1: Convert Decimal Numbers To Binary

6/6 points (ungraded)

Convert the following decimal numbers to 6 bit 2's complement representation binary numbers. Provide the binary numbers using the format 0bXXXXXX.

15 = 0b 001111 ✔

-15 = 0b 110001 ✔

6 = 0b 000110 ✔

-6 = 0b 111010 ✔

21 = 0b 010101 ✔

-21 = 0b 101011 ✔

Submit

LE1.4.2: Binary, Octal, and Hex Representations

6/6 points (ungraded)

Binary representation:

Convert the following integers to 6-bit 2's complement binary numbers. Binary numbers are prefixed with the string `0b` to indicate that you are specifying a binary number.

- 5 = 0b 000101 ✔
- 23 = 0b 010111 ✔
- -12 = 0b 110100 ✔

Octal and hexadecimal representation:

For the following problems, use 24 bit precision when answering the problems.

Convert the following integers to octal (base 8) representation using octal digits 0, 1, 2, 3, 4, 5, 6, and 7. Octal numbers should be prepended with the string `o` to indicate that you are specifying an octal number.

- 21 = O 25 ✔

Convert the following integers to hexadecimal representation. Hexadecimal numbers should be prepended with the string `0x` to indicate that you are specifying a hexadecimal number.

Calculator

- 73 = 0x 49 ✔
- -7 = 0x fffff9 ✔

Submit

LE1.4.3: Two's Complement Addition

5/5 points (ungraded)

Perform the following addition problems using 6-bit 2's complement arithmetic. Provide your answer using the format $0bXXXXXX$ if the problem can be solved using 6 bit 2's complement representation. Otherwise provide the answer "overflow".

$0b001101$
$0b001010$
0b 010111 ✔

$0b001111$
$0b101110$
0b 111101 ✔

$0b011011$
$0b111010$
0b 010101 ✔

$0b111010$
$0b110001$
0b 101011 ✔

$0b011111$
$0b001100$
0b overflow ✔

Submit

Discussion

Topic: 1. Basics of Information / LE1.4

Hide Discussion

Add a Post

Show all posts by recent activity

? Can someone please explain better how to detect an overflow in binary addition? 2
Under section LE1.4.3: Two's Complement Addition how is the last question's answer an overflow instead of this "101011"

Misleading info : they say using format 0bXXXXXX 2
They say you must provide your answer using format 0bXXXXXX, but actually, you get erros if you answer it like tht, you should NOT write...

Easy to understand video on two's compliment (includes addition and subtraction) 3
https://youtu.be/sJXTo3EZoxM

typo 1
LE1.4.1 Solution text: "Similary" should be "Similarly"

Overflow 5
I get this error message "Overflow" at the Show Answer bit of the last question - and even though my answer is correct I get a failed atte...

[typo] 1
in Solution of 1.4.3, "Ading" should be "Adding"

Calculator

LE 1.4.2 Hex value for -7 The exercise asks for us to "Convert the following integers to hexadecimal representation". Shouldn't it be asking us to " Convert the follo...	2
Where should I learn the material needed to solve these problems? I watched the presentation video and then went on to solve the problems in LE1.4 as supposedly anyone else has done. However, I felt I h...	4
Prerequisite Course Comment: A prerequisite class should be required to fully appreciate the knowledge gained here. It is easy to understand once the answe...	6
Question about the LE1.4.3 LE1.4.3 says that 'Perform the following addition problems using 6-bit 2's complement arithmetic', so for example, if we compute the resul...	2
Negative hex representation What does F stand for or why do we change is to F?	3
Wrong answers in LE1.4.1 It seems the answers for the 2's complements of 6 and -6 in LE1.4.1 are incorrect.	5
How to know that an overflow occurred on the negative side? For example if one sums -15 + (-20). In binary: 110001 + 101100 Is the answer: "when there's no carry after the N-highest order term (in th...	6

‹ Previous Next ›

Calculator