9/15/15 Pre-Class Work

* Required

Harvard email address: *

Please indicate which course you are taking. *

- CS61 (College)
- CSCIE-61 (Extension)

Signed and Unsigned Arithmetic

Without using a computer, based only on what you saw in Slide 3 of the arithmetic video, how do you suppose -5 is represented?

- 5 = 0101
- ~5 = 1010
- ~5 + 1 = 1011

We did not explicitly discuss subtracting binary numbers because: *

- A - B is the same as A + (-B) and we learned both how to negate a number and how to add numbers
- Computers do not implement subtraction
- Subtraction is unimportant
- Subtraction doesn’t work with 2’s complement representation

What signed number would 0xDEADBEEF represent? *

- 0x21524110
- 0x21524107
- 0x21524111
- - 0x21524107
- - 0x21524111

Consider a variable of type signed char. *

What is the maximum value it can hold?

- 256
- 255
- 128
- 127
Still considering a signed char.*
What is the minimum value it can hold?
-256
-255
-128
-127

Which of the following is equal to -3? *
0x80000003
0xFFFFFFF
0xFFFFFFF
0xFFFFFFFF
0xFFFFFFFF

You have a function that takes an unsigned number; you call it with a small negative value (e.g., -2). *
Crash
Return an error
Operate on signed numbers regardless of what the prototype says
Treat the number as a large unsigned number

Dynamic memory, alignment and fragmentation

Fragmentation is fundamentally: *
A good thing
A bad thing

sizeof (type T) OP alignof (type T) *
OP is:
<
<=
==
>=
>

Which statement is true? *
Dynamically allocated variables have lifetimes longer than global variables.
Dynamically allocated variables always have lifetimes longer than local variables
Dynamically allocated variables never have lifetimes longer than local variables
Dynamically allocate variables may have lifetimes longer than local variables

A fixed size allocator will produce less fragmentation than a variable sized one. *
You are running on a 64 bit machine and wish to allocate space to hold an integer. *

Mark all the choices below that would be valid alignments.

☐ 4
☒ 8
☐ 12
☒ 16

Although only an 8-byte alignment is necessary, it would be OK.

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