University of Illinois at Urbana-Champaign
Dept. of Electrical and Computer Engineering

ECE 220: Computer Systems & Programming

C to LC-3 Example:
Finding an Absolute Value

Let's Act Like Compilers!

Let's have some fun!

Let's pretend to be a C compiler!

No, really, I expect to hear cheers.

Task: Convert a Number to Its Absolute Value

Here's our task:
◦ let the user **type in a number**,
◦ **convert** the number **to its absolute value**,
◦ then **print the result in hexadecimal**.

We'll write this function:*

```
int32_t find_abs (int32_t num);
```

returns an **int32_t**   name of subroutine   **int32_t** as input

*We'll discuss function declarations/signatures
in more detail later.

Decompose Finding Absolute Value

Which decomposition should we use?

What is the test?

find |num|

num >= 0

TRUE → abs_value = num

FALSE → abs_value = -num

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