

Beware of Anthropomorphism	LC-3 Includes Operations on 2's Complement Values
I may have said (and may still say) sentences like "The LC-3 only understands 2's complement."	"The LC-3 only understands 2's complement." By the definition of the LC-3 ISA , many constants and values are treated as 2's complement .
But the LC-3 is not human. The LC-3 "understands" nothing. So what am I trying to say?	Any LC-3 microarchitecture needs hardware designed to support 2's complement . For example, notice the numerous sign extension boxes in Patt and Patel's datapath.
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Other Data Types Must Be Handled in Software

"The LC-3 only understands 2's complement."

In contrast, there are no instructions (nor hardware) for directly manipulating bits in other representations.

How do we use other data types with an LC-3 processor?

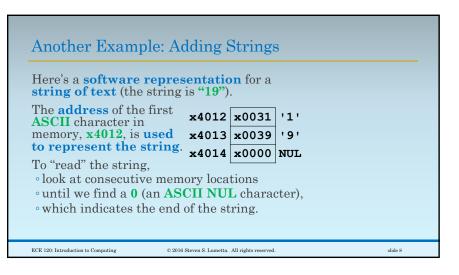
Translate operations on other data types **into sequences of instructions**.

In other words, write software to do it.

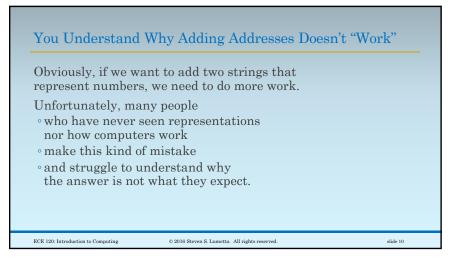
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Here's another string.	x4012	x0031	'1'	
What is it? "23"	x4013	x0039	'9'	
Say that the LC-3 executes:	x4014	x0000	NUL	
R1 ← x4012	x7196	x0032	'2'	
R2 ← x7196 R3 ← R1 + R2		x0033	-	
What is R3? xB1A8	X7198	x0000	NUL	
What is stored at xB 1	A8? Bits			



Lend Me Your Brains for a Minute?I almost forgot!I need to ask your help again!Can you help me sort these numbers?"41,962" "41321" "9874"biggest middle smallest

Н	[mm. Are	you sure:	?	
I ju	st ask bec	ause, well	•••	
I as	ked my co	omputer, t	00.	
And it	gave diff	erent ans	swers:	
	"41,962"	"41321"	"9874"	
humans	biggest	middle	smallest	
computers	smallest	middle	biggest	

