

Time to Increment the Non-Alpha Histogram Bin

x00	x40	x41	x5A	x5B	x60	x61	x7A	x7B	x7F
NUL	@	A	Z	[\	a	z	{	DEL

If the result is not positive,

- the character is in the left region and
- is not a letter.

So we can increment the non-alpha bin (at HIST).

Increment Memory Location x3100 (Non-Alpha Bin)

```
COUNTLOOP
LDR R2,R1,#0
BRz DONE
ADD R2,R2,R3
BRp AT_LEAST_A
NON_ALPHA
LDR R6,R0,#0
```

Increment memory at HIST (the value held in R0).

Is there an LC-3 instruction for that?

No.

So ... ?

Where should we put the value?

Increment Memory Location x3100 (Non-Alpha Bin)

```
COUNTLOOP
LDR R2,R1,#0
BRz DONE
ADD R2,R2,R3
BRp AT_LEAST_A
NON_ALPHA
LDR R6,R0,#0
ADD R6,R6,#1
```

Increment memory at HIST (the value held in R0).

And now increment the value.

Increment Memory Location x3100 (Non-Alpha Bin)

```
COUNTLOOP
LDR R2,R1,#0
BRz DONE
ADD R2,R2,R3
BRp AT_LEAST_A
NON_ALPHA
LDR R6,R0,#0
ADD R6,R6,#1
STR R6,R0,#0
```

Increment memory at HIST (the value held in R0).

And put the new value back.