

Conditional Operator is Complete: Branch to Assignment

```
LDR R0,R5,#4
BRn ELSE_COND
LDR R0,R5,#4
BRnzp DONE_COND
ELSE_COND
```

Branch to
assignment
(to `abs_value`).

Is there an LC-3
instruction for that?

What are the
condition codes?

DONE_COND

Test is False, So Expression Value is `-num`

Now for the 'else' condition...

```
abs_value = (0 <= num ? num : -num);
```

The test is false: **expression's value** is `-num`.

Where is `num`?

Look in the symbol table!

scope	identifier	type	from	offset	...
translate.c	the_number	int32_t	R4	0	...
find_abs	abs_value	int32_t	R5	0	...
find_abs	num	int32_t	R5	4	...

Load Variable `num` into R0

```
LDR R0,R5,#4
BRn ELSE_COND
LDR R0,R5,#4
BRnzp DONE_COND
ELSE_COND
LDR R0,R5,#4
```

Load `num` into R0.

Ok, ok!
I won't ask you!

Just be glad that
you're a human.

Computers are dumb.

DONE_COND

Negate R0

```
LDR R0,R5,#4
BRn ELSE_COND
LDR R0,R5,#4
BRnzp DONE_COND
ELSE_COND
LDR R0,R5,#4
NOT R0,R0
ADD R0,R0,#1
DONE_COND
```

Negate R0.

Is there an LC-3
instruction for that?

No.

But we can
use two.