CSCI 150: ~~#0~~ Tracing Examples
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The code is copied from the Kaggle
Notebook from ~~September 10th.~~ Feb 2nd

Example 1:

$x = 5$

$y = x$

$x = 7$

Scratch Work	Variables
Note: Scratch is never graded or evaluated — you can write whatever you want here	$x = \cancel{5} \ 7$ $y = 5$

Note: on the "Variable" side you only have

Variable name = some actual value.

You cannot write $y = x$ here!

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Example 2:

$x = 5$
$y = x$
$x = x + 3$
$y = y + x$
$z = y - 3$

Scratch	Variables
$x = x+3 = 5+3 = 8$ $y = y+x = 5+8 = 13$	$x = \cancel{5} \;\; 8$ $y = \cancel{5} \;\; 13$ $z = 10$

Example 3:

$a = 3$
$b = 3 // 2$
$a = c + 1$
$d = a + b$

Scratch	Variables
$b = 3 // 2 \qquad 3/2 = 1.5$ $\qquad = 1 \qquad\qquad \uparrow$ $a = c + 1$ $\quad$ but no value stored in c? $\nearrow$	$a = 3$ $b = 1$

Run-time error!

This won't happen in homework/exams

$\sqrt{2}$

Example 4:

```
a = 7
b = 2
b * = a
c = a + b
if a < b:
    c = 100
elif b > c:
    c = 7
elif c == 7:
    d = 123
else:
    c = 12
```

Scratch	Variables
$b *= a \rightarrow b = b \times a = 2 \cdot 7 = 14$	$a = 7$
→ if: a<b? yes!	$b = \cancel{2}\ 14$
	$c = \cancel{21}\ 100$

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Example 5:

```
a = -3
b = 2
b * = a
c = a + b
if a < b:
    c = 100

elif b > c:
    c = 7
elif c == 7:
    d = 123

else:
    c = 12
```

Scratch	Variables
a<5? No	a = -3
b>c? yes!	b = ~~2~~ -6
	c = ~~-9~~ 7

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Example 6:

```
s = 'hi'
t = 'bye'
u = 'hello'

if s >= t:
    u = 'seeya'
    t = 'zzz'

elif s < t:
    u = 'abcd'

else:
    u = 'xyz'
```

Scratch	Variables
s>=t ? yes!	s = 'hi'
	t = ~~'bye'~~ 'zzz'
	u = ~~'hello'~~ 'seeya'

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Example 7:

```
s = 'hi'
t = 'bye'
u = 'hello'

if s >= t:
    u = 'seeya'
    t = 'zzz'

if s < t:
    u = 'abcd'

else:
    u = 'xyz'
```

Scratch	Variables
is s>=t? yes!	s = 'hi'
	t = ~~'bye'~~ 'zzz'
is s<t? yes!	u = ~~'hello'~~ ~~'seeya'~~ 'abcd'

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