

Tuesday, February 26

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6.s081 Spring 2018

Miniquiz #11

5 Minutes

```
var x = 0
var y = 1
{
  var x = 2
}
x = x + 1
{
  var y = x + 3
  {
    y = 2
    var x = 5
    //BREAK
    y = y + 6
  }
  x = 2
}
```

Let  $\gamma$  be the stack of frames for this program, each frame denoted by  $\sigma^{(i)}$  ( $\sigma$  for the outer most frame,  $\sigma'$  for a nested frame,  $\sigma''$  for a doubly nested frame, etc.), each address denoted by  $a_i$  (starting at  $a_0, a_1, a_2$ , etc.), and  $h$  be the heap. At the line denoted by break, what are the values of the following:

1.  $h - \{ a_0 : 0, a_1 : 1, a_2 : 2, a_3 : 1, a_4 : 4, a_5 : 2, a_6 : 5 \}$
2.  $\sigma - \{ x : a_3, y : a_1 \}$
3.  $\sigma' - \{ y : a_5 \}$
4.  $\sigma'' - \{ x : a_6 \}$
5.  $\sigma''' - \text{N/A}$