CSCE 330 Fall 2001

HOMEWORK 5—AMENDED

Assigned Wednesday, 01/10/24. Due Monday, 01/10/29

Consider the following $C4''$ program.

```
...
proc1() {
  int w;
  ...
  proc2() {
    int u;
    ...
  }
  proc3() {
    int z;
    ...
    proc2() {
      int y;
      ...
      y = z + w;    (**)
      ...
    }
    ...
  }
  ...
}
...
```

1. What is the distance attribute for the variables y, z, and w that appear in the instruction marked `(**)`?
2. If proc3 contains a call to proc2, which proc2 gets called? Explain your answer.
3. Consider the following call sequence:
   (a) proc1 calls proc2 (which one?)
   (b) proc2 calls itself recursively and, at its second instantiation, calls proc3
   (c) proc3 calls proc2.

   Sketch the state of simplesem data memory at this point, highlighting the activation records, the dynamic links, and the static links. (You do not need to show local variables, return points, etc.)