Discussion 4: Scoping, Mutability, & Algorithmic Complexity

(Solutions)

Scoping Practice

For each of the following code snippets, write what the Sprite would say after the script executes. If you believe the code produces any sort of error message, write “Error.” If there are multiple “say” blocks, write the result of each block in a separate box.

a. Assume we create a global variable named “global” (and **no other global variables**) and then run the script below.

   ![Sprite diagram](image)

   1. False
   2. Error

b. Assume we create a global variable named “Dan” and then run the script below.

   ![Sprite diagram](image)

   **Professor Garcia**
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Mutability Practice

What are the values of the script variables x and y after the given script finishes running?

x: ______123_______

y: ______[1,2,3]_______

x: ______123_______

y: ______[1,2,3,6]_______
Challenge Problem Mutability (recycled from last week)

Given the following expression, what does NAMES evaluate to?

```
set NUMBERS to list 2 1
set NAMES to list Dan Garcia
for i = 1 to 2
  replace item 1 of NUMBERS of NAMES with i
```

Quest Problem Scoping (straight from your Quest)

What gets *said* when we run the above script?

Let’s trace this: global gets set to G, outer script to OS. The value of these variables are passed to Command, which sets global to Gnew and input1 and input2 to values that don’t matter, since all input parameters are local variables and don’t affect anything outside. So when it returns, only global has been changed (to Gnew), and GnewOS is said (this solution is straight from Dan’s Quest solutions).
Extra for Practice:

Up to you! What other questions from the Quest would people like to go over?