Criteria for drawing memory diagrams

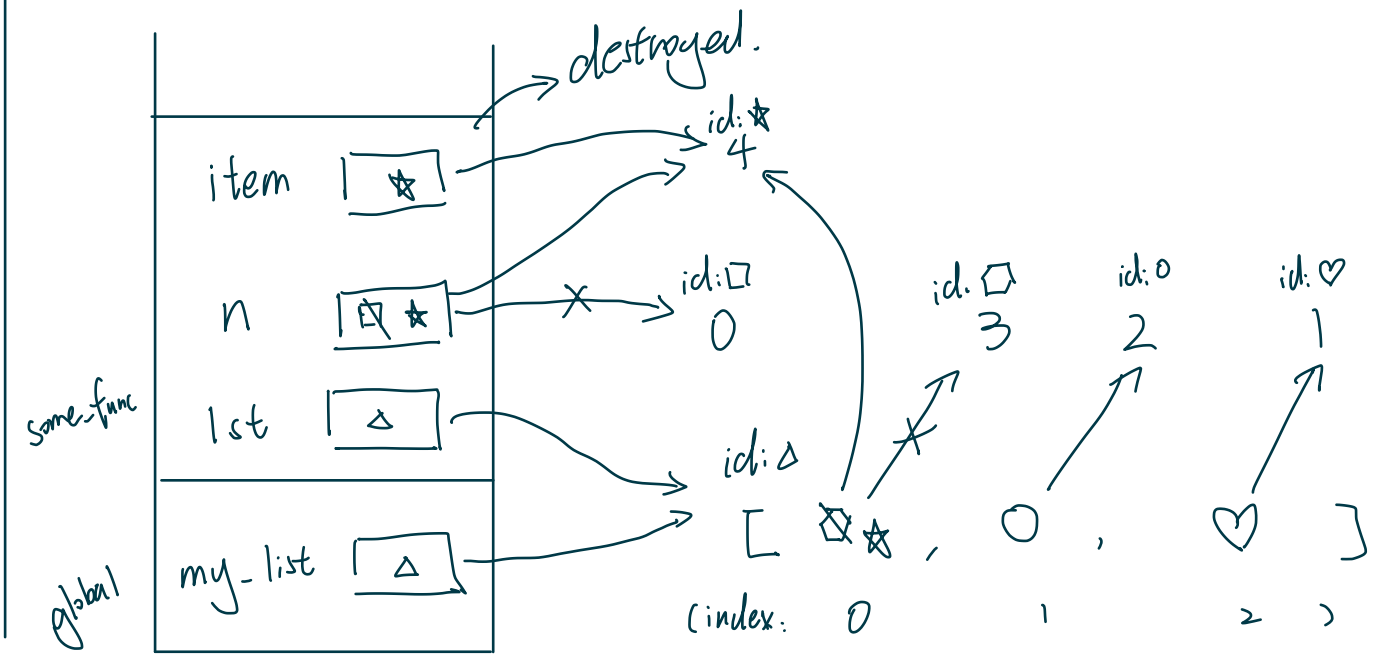
1. Official representation that we teach you:

code:

```
def some_func(lst, n)
    n = 4
    lst[0] = n
    item = lst[0]

my_list = [3, 2, 1]
some_func(my_list, 0)
```

memory diagram:

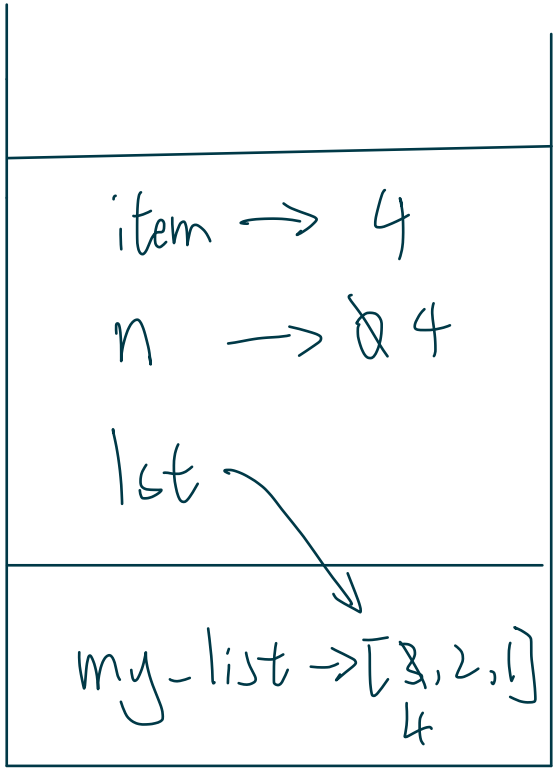


☆ core expectation for you:

- understand the key concept eg for HW4 Q1, mutation / passing in values
  for HW4 Q2, accessing global variable.

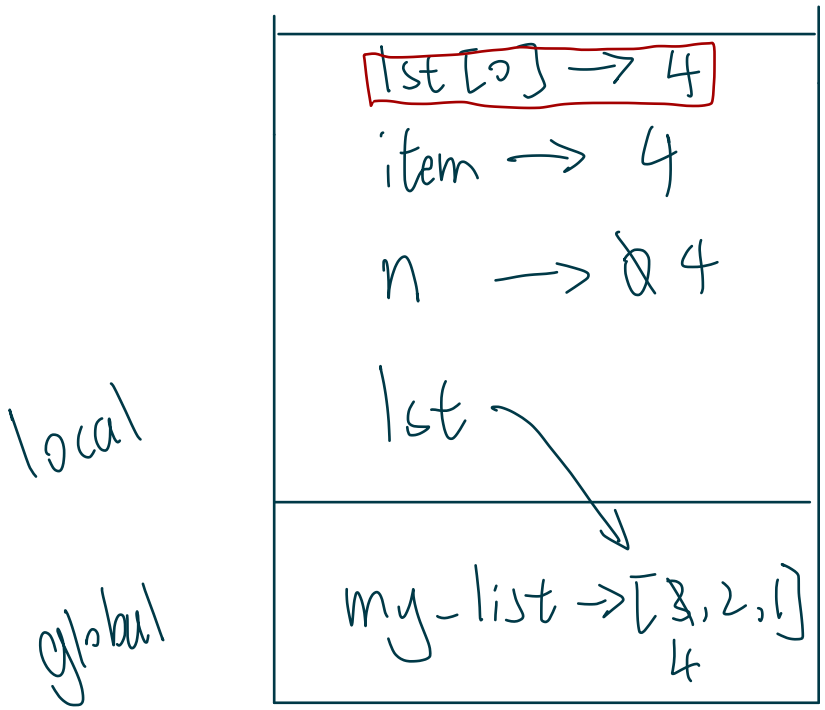
2. Bare minimum we expect from you:

(for the code above):



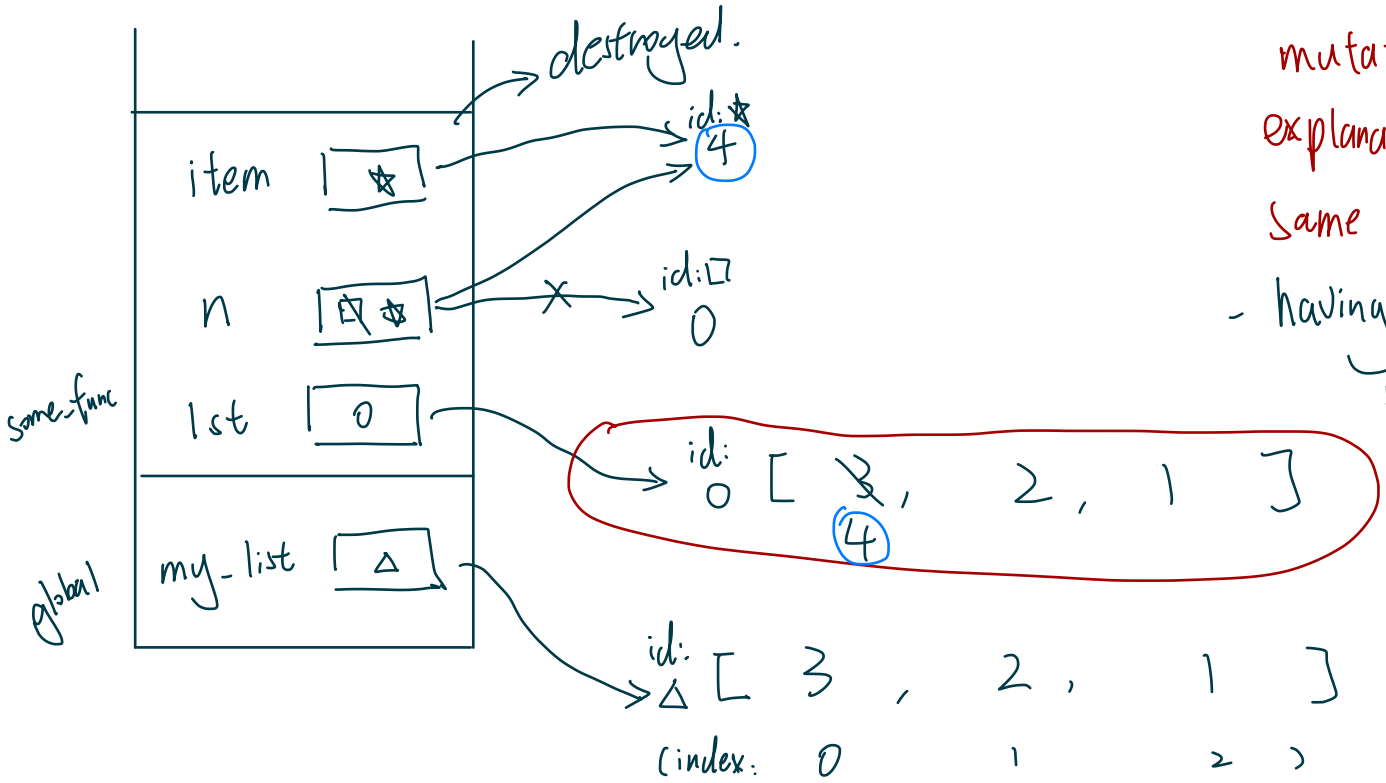
- it can be a seperate copy, although this is inaccurate.
- no need to represent id
- need to clearly show values & how they change
  - ↳ alternatively, only showing ids are fine
- no need to show frame name as function name
- no need to show frame destroyed.
- need to clearly show a "diagram" that represents:
  - function calls as boxes ("stack")
  - variables (including parameters)
  - values associated with variables, and how they change.

incorrect # 1.



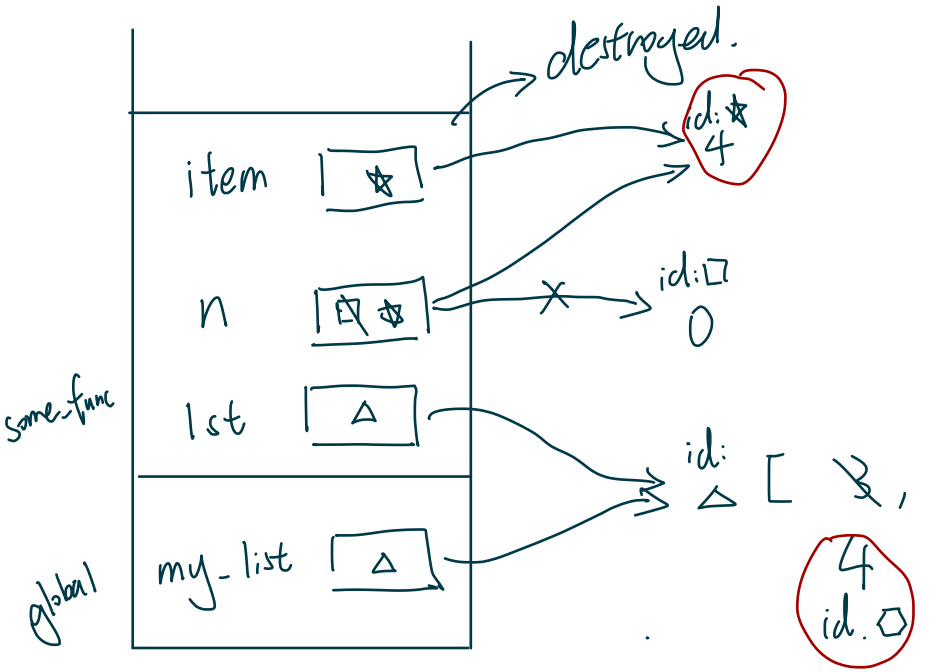
* cannot have lst[0] in the frame
  - ↳ cannot have any expressions in frame.
    list mutation, like lst[0] = 4, should directly impact values in the list.
  - ↳ cannot have any function calls in frame.
    drawing out the stacks is already representing function calls).

incorrect #12.



- shows 2 copies of list and mutates only one copy, without explanation that they are the same copy
- having 4 at two different places (without showing they have the same id) is correct.

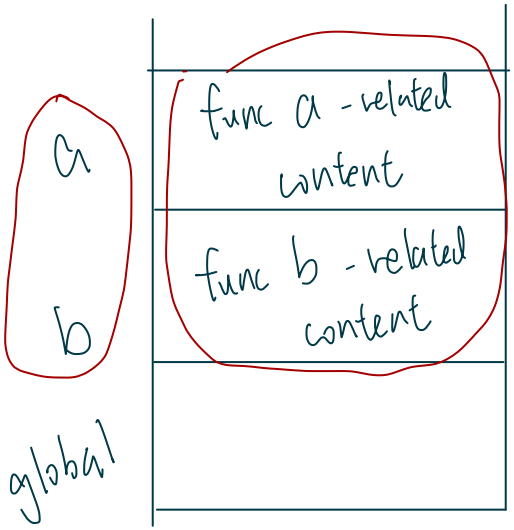
incorrect #3.



- having 4 at different places, and showed that they have different ids, is incorrect.

incorrect #4.

Assume global frame called function a, a called b.

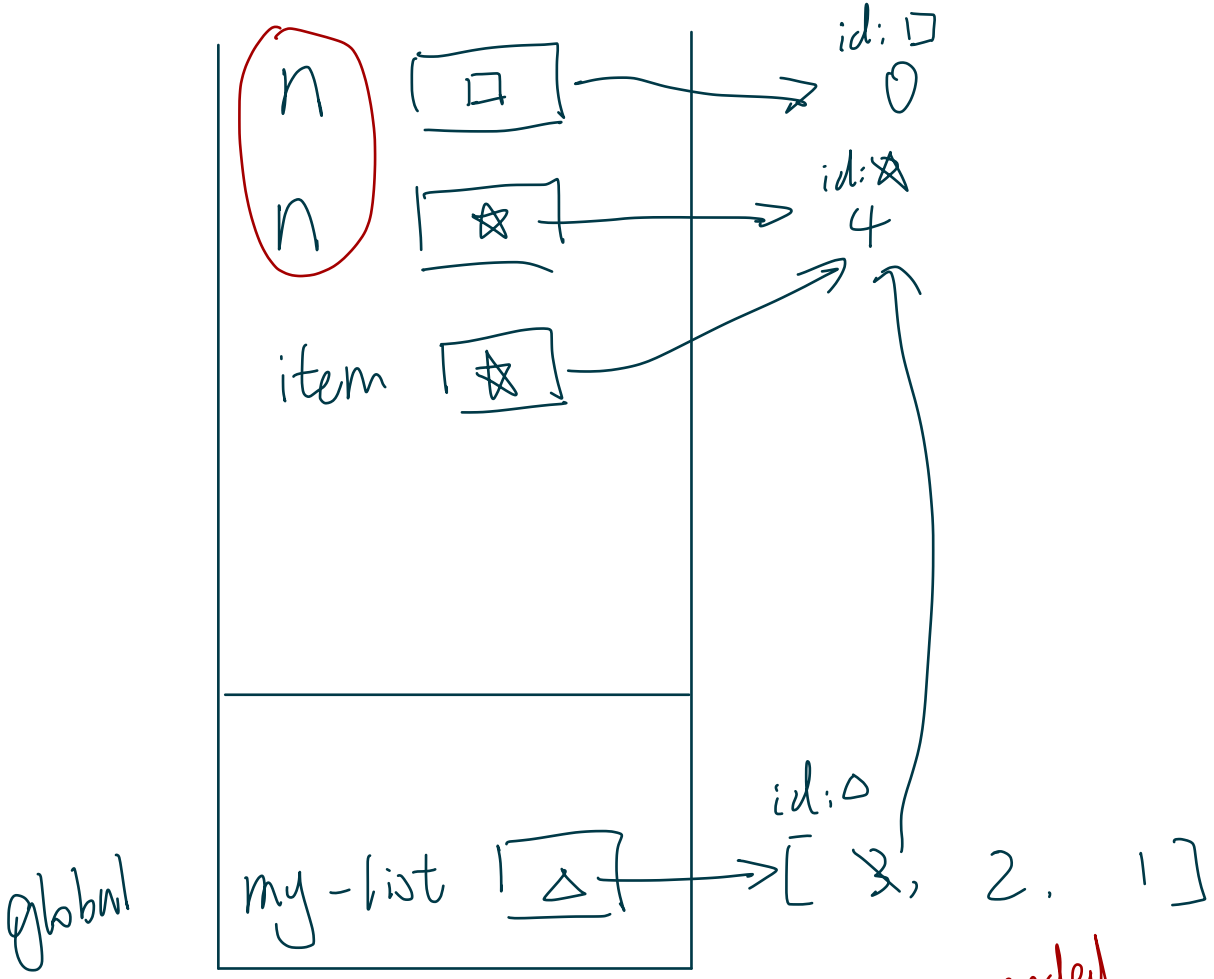


- a and b should be swapped.
  - ↳ note: also applies to if you didn't name the frames but showed it through the content.

However, the following is correct (NOT recommended, as it can be confusing)

- entirely flipping the stack frame so that global is at the top, subsequent calls at bottom
- horizontal, still following some structure (highly not recommended).

incorrect #5.



- we change the value and id assigned to variable "n", but this should not be represented as two variables in the stack frame. Instead, cross off the value / id associated with the variable, like

