Clicker Questions for L11: Lists

questions from 2017-03-07
Q10: References, Equality and **is**

- Which of the following is true after executing the assignments:
  
  ```
  a = [ 1, 2, 3 ]
  b = [ 1, 2, 3 ]
  c = a
  d = b[:]
  ```

  A. a is b and a is c and b is d
  B. a == b and a is c and b is d
  C. a == b and a == c and b is d
  D. a == b and a is c and b == d
  E. a is b and a == c and b == d
Consider the following code from Group Exercise 13:

```python
def foo(x):
    for i in range(len(x)):
        x[i] += 1

a = [ 9, 99, 999 ]
b = a[:]
c = foo(a)
```

Draw the state of memory just after the `foo()` function call begins executing? (Exclude functions from frame).

Which of the following are true?

A. `a` and `b` are aliases
B. `a` and `b` are copies and `x` are aliases
C. `b` and `x` are copies and `a` are aliases
D. `a` and `b` are copies and `b` are aliases and `x` are aliases
E. None of the above
Q12: Trace the call

Consider the following code from Group Exercise 13:

```python
def foo(x):
    for i in range(len(x)):
        x[i] += 1

a = [9, 99, 999]
b = a[:]
c = foo(a)
```

- Draw the state of memory just before the `foo()` function call returns (Exclude functions from frame).
- What is the value of `a` on the global frame?
  A. `a → [10, 100, 1000]`
  B. `a → [9, 1, 99 1, 999, 1]`
  C. `a → [9, 99, 999]`
  D. `a → []`
  E. None of the above
Q13: Trace the call

Consider the following code from Group Exercise 13:

```python
def foo(x):
    for i in range(len(x)):
        x[i] += 1

a = [9, 99, 999]
b = a[:]
c = foo(a)
```

- Draw the state of memory just before the `foo()` function call returns (Exclude functions from frame).
- What is the value of `b` on the global frame?

A. `b \rightarrow [10, 100, 1000]`
B. `b \rightarrow [9, 1, 99 1, 999, 1]`
C. `b \rightarrow [9, 99, 999]`
D. `b \rightarrow []`
E. None of the above
Q14: Trace the call

Consider the following code from Group Exercise 13:

```python
def foo(x):
    for i in range(len(x)):
        x[i] += 1

a = [9, 99, 999]
b = a[:]
c = foo(a)
```

- Draw the state of memory just after the code finishes executing (Exclude functions from frame).
- What is the value of $c$ on the global frame?
  A. $c \rightarrow [9, 99, 999]$
  B. $c \rightarrow [10, 100, 1000]$
  C. $c \rightarrow []$
  D. $c \rightarrow$ None
  E. None of the above
Q15: Lists of lists

Consider the following list:
\[ x = [['a', 1], ['b', 2], ['c', 3], ['d', 4]] \]

What is the value of \( x[3][0] \)?

A. ['d', 4]
B. ['a', 1]
C. 'a'
D. 'd'
E. 1
Q16: Lists of lists

Consider the following list:
\[ \text{x} = [['a', 1], ['b', 2], ['c', 3], ['d', 4]] \]

What is the value of \text{x} after we input the command

\[ >>> \text{x[2].insert(1,2)} \]

A. \[ [['a', 1], ['b', 2], ['c', 2, 3], ['d', 4]] \]
B. \[ [['a', 1], ['b', 2, 1], ['c', 3], ['d', 4]] \]
C. \[ [['a', 1], 2, ['b', 2], ['c', 3], ['d', 4]] \]
D. \[ [['a', 1], ['b', 2], 1, ['c', 3], ['d', 4]] \]
E. None of the above