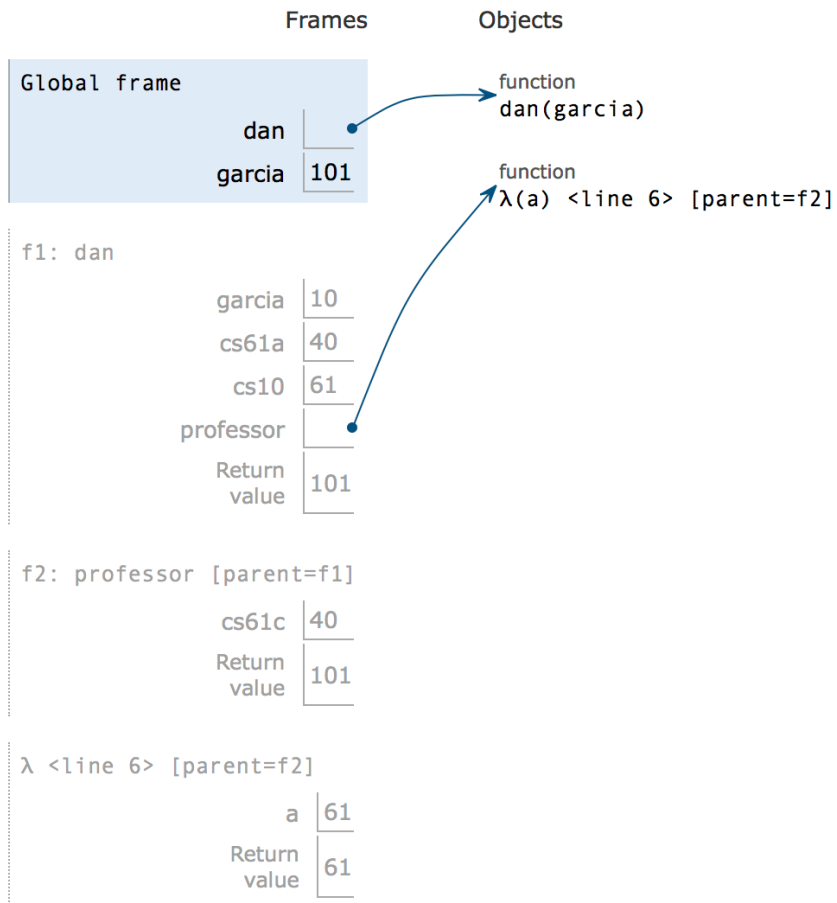# Worksheet 5 Solutions:

```
>>> my = ["oh", "my", 1, 5, 0, 89, 123]
>>> my[-2:-1]
[89]
>>> my[1:4]
['my', 1, 5]
>>> my[my[3:-1][1]] = ["mamma", "mia"]
>>> my[my[-5:-4][0]-1][-1:]
['mia']
>>> my[0][::2]
['mamma']
```

```
>>> d = {"Starbucks" : 5, "Yali's" : 3, "Qualcomm" : 3, "1951" : 4}
>>> for i in d.values():
...      i -= 1
...
>>> d
{'Starbucks': 5, "Yali's": 3, 'Qualcomm': 3, '1951': 4}
>>> for k in d:
         print(k)
Starbucks
Yali's
Qualcomm
1951
>>> for k in d:
          d[k] -= 1
>>> d
{'Starbucks': 4, "Yali's": 2, 'Qualcomm': 2, '1951': 3}
>>> d[2] = "Cafe Strada"
>>> for k in d:
          d[k] += 1
Error
>>> d["Yali's"] = "5"
>>> for i in d.values():
          print(i)
5
5
3
4
Cafe Strada
```

```
def switcheroo(d):
        """Switch all the keys and values in a dictionary. Assume all values
are
               immutable. Return a new dictionary.
        >>> d = {"a" : 1, "b" : 2, "c" : 3}
        >>> new_d = switcheroo(d)
        >>> new_d
        {1 : "a", 2 : "b", 3 : "c"}
        >>> empty = {}
        >>> new_empty = switcheroo(empty)
        >>> new_empty
        {}
        """
    new_d = {}
    keys, values = list(d.keys()), list(d.values())
    for i in range(len(keys)):
              new_d[values[i]] = keys[i]
    return new_d
```

|  Frames | Objects |
| --- | --- |

```
Global frame
                        function
              dan       dan(garcia)

           garcia  101  function
                        λ(a) <line 6> [parent=f2]

f1: dan

           garcia  10
            cs61a  40
             cs10  61
        professor
           Return
           value   101


f2: professor [parent=f1]

            cs61c  40
           Return
           value   101


λ <line 6> [parent=f2]

               a   61
           Return
           value   61
```

```python
def f(g):
        nonlocal n
        n = g(n)
        print(n)
        return f
return f
```

(This is a fantastic problem to showcase the use of nonlocal)