

<https://v.gd/1rbgWH>

# #4 Nonlocals & Mutation

TA: Jerry Chen ([jerry.c@berkeley.edu](mailto:jerry.c@berkeley.edu))

*Traveling on vacation is often considered a "nonlocal" experience.*

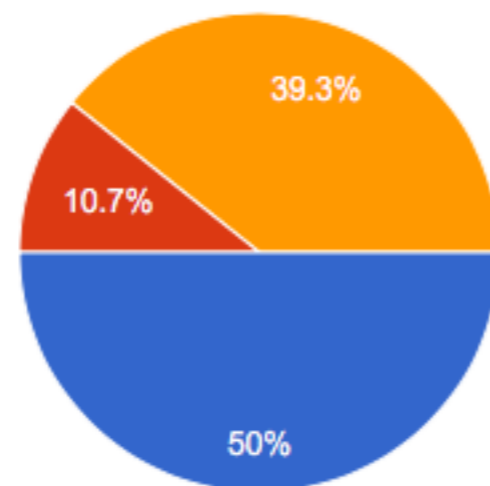
# Feedback

Thanks!

- Majority of people think current pace is ok
- A few think it's too fast/too slow
- Note on participation

## Would you rather be a sky diver afraid of heights or a scuba diver afraid of water?

28 responses



- Acrophobic sky diver
- Aquaphobic scuba diver
- Oh my gosh how neat I just realized that those both have diver in the name

```
1 def g(x):
2     def f():
3         x = 10
4         x = x + 2
5     f()
6     print(x)
7 g(20)
```

```
1 def g(x):
2     def f():
3         x = x - 8
4     f()
5     print(x)
6 g(20)
```

# Nonlocal

Old rule: you cannot modify variables outside your frame

New rule: you can modify, but must specify with nonlocal

```
1 def g(x):
2     def f():
3         nonlocal x
4         x = x - 8
5     f()
6     print(x)
7 g(20)
```

# List Mutation

- Recall that slicing a list makes a copy
- Can also modify a list "in place"



# List Mutation

Common operations

```
lst.append(x) # Add x to the end of lst
```

```
lst += [x] # Does the same thing
```

```
lst = lst + [x] # NOT the same! Creates  
a copy of lst
```

```
lst[0] = x # Assigns to index 0
```

# Dictionaries Demo