J233
Coding for Journalists

LECTURER
Soo Oh

PROMPTS
Get a pencil or pen

start Zoom recording

Agenda

Homework review + How much time spent

In-class exercises: for and while loops

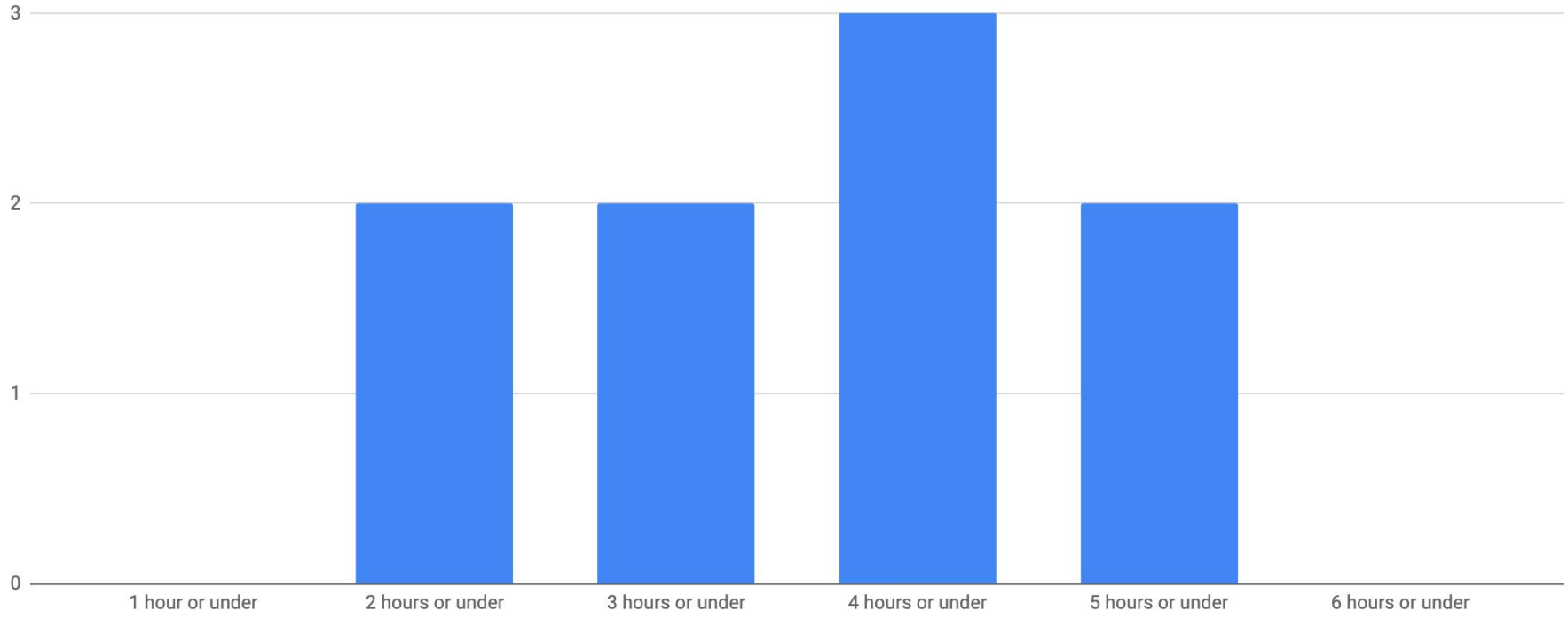
BREAK

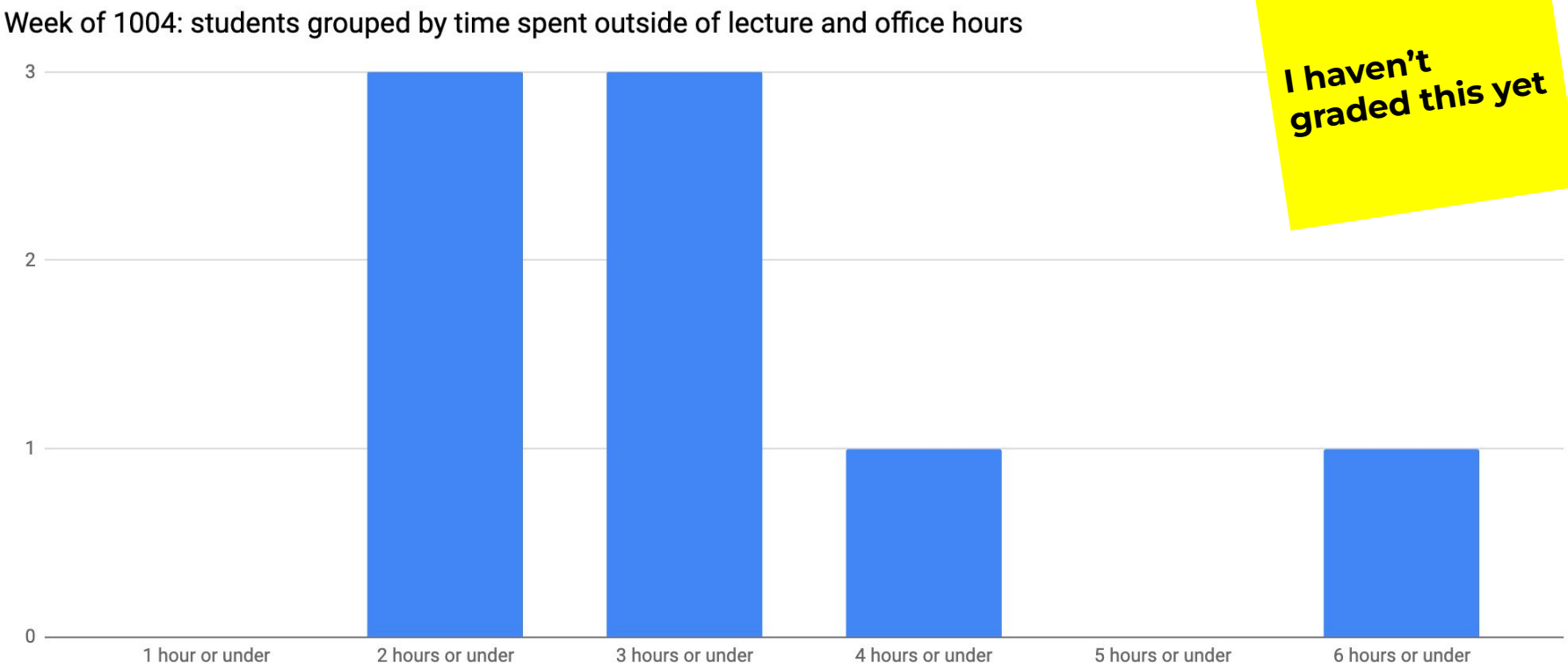
Homework

Discussion

New reading for homework. We'll discuss both articles next week.

Week of 0925: students grouped by time spent outside of lecture and office hours





I haven't graded this yet

Homework Review

Questions

Markdown

ChatGPT tips

Download **hw0925_answers.ipynb** from class website.

Screenshare

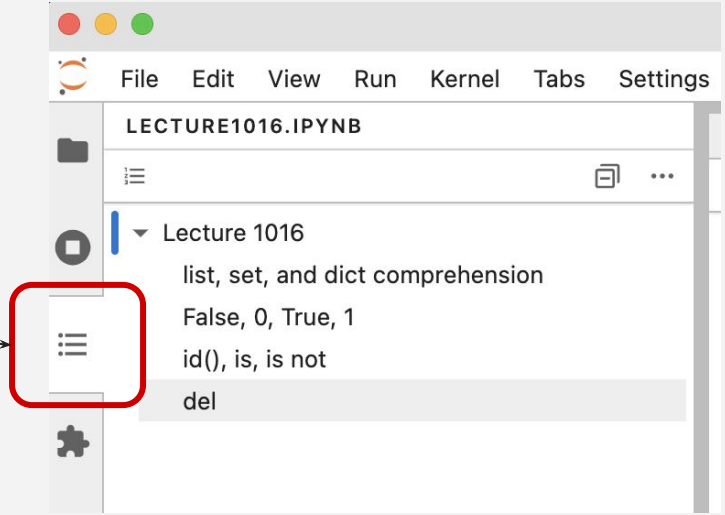
Homework Review

Questions

Markdown

ChatGPT tips

- Use headline styles (with the hashtag) to create an outline.
- Check your outline in Jupyter Notebook.



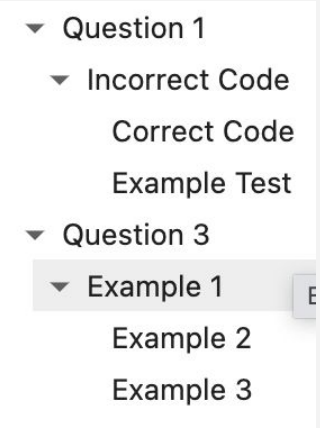
Homework Review

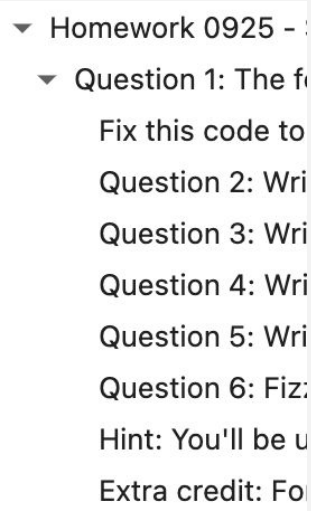
Questions

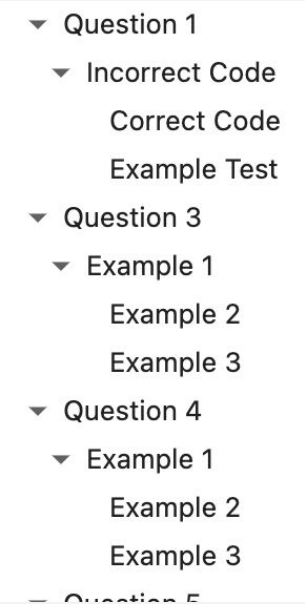
Markdown

ChatGPT tips

Examples of what didn't work







Homework Review

Questions

Markdown

ChatGPT tips

Be careful. Don't rely on ChatGPT for the answers, even if it's correct.

If you are using ChatGPT, I expect you to know what your ChatGPT-assisted code does.

If you don't understand what ChatGPT is telling you, ask it to explain.

What questions do you have?

In-class group exercises

Break

Meet back in 15 minutes.

Wrapping up the basics

Download this notebook off the class website

lecture1016.ipynb

Python wrap

`list`, `set`, `dict` comprehensions

`False`, `0`, `True`, `1`

`id()`, `is`, `is not`

`del`

`list`, `set`, and `dict` comprehensions are a bit like `for` loops.

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

list comprehension

```
cubes = []
for x in range(5):
    cubes.append(x**3)
cubes
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

list comprehension

```
cubes = []
for x in range(5):
    cubes.append(x**3)
cubes
Out[]: [0, 1, 8, 27, 64]
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

list comprehension

```
cubes = []
for x in range(5):
    cubes.append(x**3)
cubes
Out[]: [0, 1, 8, 27, 64]

# does the same thing as

# this is list comprehension:
cubes = [x**3 for x in range(5)]
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

list comprehension

```
cubes = []
for x in range(5):
    cubes.append(x**3)
cubes
Out[]: [0, 1, 8, 27, 64]

# does the same thing as

# this is list comprehension:
cubes = [x**3 for x in range(5)]
cubes
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

list comprehension

```
cubes = []
for x in range(5):
    cubes.append(x**3)
cubes
Out[]: [0, 1, 8, 27, 64]

# does the same thing as

# this is list comprehension:
cubes = [x**3 for x in range(5)]
cubes
Out[]: [0, 1, 8, 27, 64]
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

list comprehension

```
cubes = []
for x in range(5):
    cubes.append(x**3)
cubes
Out[]: [0, 1, 8, 27, 64]

# does the same thing as

# this is list comprehension:
cubes = [x**3 for x in range(5)]
cubes
Out[]: [0, 1, 8, 27, 64]
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
cubes = {x**3 for x in range(5)}
cubes
Out[]: {0, 1, 8, 27, 64}
```

Python wrap

list, set, dict
comprehensions

False, 0, True, 1

id(), is, is not

del

```
cubes = {x**3 for x in range(5)}
cubes
Out[]: {0, 1, 8, 27, 64}

# Why do it as a set? When you want
# to quickly get uniques
random_list = [x**0 for x in [1, 2, 3]]
random_list
Out[]:
```

Python wrap

list, set, dict
comprehensions

False, 0, True, 1

id(), is, is not

del

```
cubes = {x**3 for x in range(5)}
cubes
Out[]: {0, 1, 8, 27, 64}

# Why do it as a set? When you want
# to quickly get uniques
random_list = [x**0 for x in [1, 2, 3]]
random_list
Out[]: [1, 1, 1]
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
cubes = {x**3 for x in range(5)}
cubes
Out[]: {0, 1, 8, 27, 64}

# Why do it as a set? When you want
# to quickly get uniques
random_list = [x**0 for x in [1, 2, 3]]
random_list
Out[]: [1, 1, 1]

random_set = {x**0 for x in [1, 2, 3]}
random_set
Out[]:
```

Python wrap

list, set, dict
comprehensions

False, 0, True, 1

id(), is, is not

del

```
cubes = {x**3 for x in range(5)}
cubes
Out[]: {0, 1, 8, 27, 64}

# Why do it as a set? When you want
# to quickly get uniques
random_list = [x**0 for x in [1, 2, 3]]
random_list
Out[]: [1, 1, 1]

random_set = {x**0 for x in [1, 2, 3]}
random_set
Out[]: {1}
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
random_dict = {x: x.upper() for x in ['name', 'age']}
random_dict
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
random_dict = {x: x.upper() for x in ['name', 'age']}
random_dict
Out[]: {'name': 'NAME', 'age': 'AGE'}
```

Python wrap

list, set, dict
comprehensions

False, 0, True, 1

id(), is, is not

del

```
random_dict = {x: x.upper() for x in ['name', 'age']}
random_dict
Out[]: {'name': 'NAME', 'age': 'AGE'}

letters = {char: char.lower() for char in ['A', 'B', 'C']}
letters
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
random_dict = {x: x.upper() for x in ['name', 'age']}
random_dict
Out[]: {'name': 'NAME', 'age': 'AGE'}

letters = {char: char.lower() for char in ['A', 'B', 'C']}
letters
Out[]: {'A': 'a', 'B': 'b', 'C': 'c'}
```

Python wrap

`list`, `set`, `dict` comprehensions

`False`, `0`, `True`, `1`

`id()`, `is`, `is not`

`del`

Let's talk about zeros and ones.

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
int(False)
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
int(False)
Out[]: 0
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
int(False)
Out[]: 0

int(True)
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
int(False)
Out[]: 0

int(True)
Out[]: 1
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
int(False)
Out[]: 0

int(True)
Out[]: 1

bool(1)
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
int(False)
Out[]: 0

int(True)
Out[]: 1

bool(1)
Out[]: True
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
int(False)
Out[]: 0

int(True)
Out[]: 1

bool(1)
Out[]: True

bool(2)
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
int(False)
Out[]: 0

int(True)
Out[]: 1

bool(1)
Out[]: True

bool(2)
Out[]: True
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
int(False)
Out[]: 0

int(True)
Out[]: 1

bool(1)
Out[]: True

bool(2)
Out[]: True

bool(-1000)
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
int(False)
Out[]: 0

int(True)
Out[]: 1

bool(1)
Out[]: True

bool(2)
Out[]: True

bool(-1000)
Out[]: True
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
bool(0)
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
bool(0)
Out[]: False
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
bool(0)
Out[]: False

0 == False
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
bool(0)
Out[]: False

0 == False
Out[]: True
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
bool(0)
Out[]: False

0 == False
Out[]: True

1 == True
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
bool(0)
Out[]: False

0 == False
Out[]: True

1 == True
Out[]: True
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
bool(0)
Out[]: False

0 == False
Out[]: True

1 == True
Out[]: True

2 == True
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
bool(0)
Out[]: False

0 == False
Out[]: True

1 == True
Out[]: True

2 == True
Out[]: False
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
def letter_grade_simple(points):
    if points >= 90:
        return 'A'
    elif points >= 80:
        return 'B'
    elif points >= 70:
        return 'C'
    elif points >= 60:
        return 'D'
    else:
        return 'F'

letter_grade_simple(True)
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
def letter_grade_simple(points):
    if points >= 90:
        return 'A'
    elif points >= 80:
        return 'B'
    elif points >= 70:
        return 'C'
    elif points >= 60:
        return 'D'
    else:
        return 'F'

letter_grade_simple(True)
Out[]: 'F'
```

Python wrap

`list`, `set`, `dict` comprehensions

`False`, `0`, `True`, `1`

`id()`, `is`, `is not`

`del`

When are two items `==` to each other but `is not` to each other?

What does that even mean?

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a

list_a == list_b
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a

list_a == list_b
Out[]: True
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a

list_a == list_b
Out[]: True

list_a is list_b
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a

list_a == list_b
Out[]: True

list_a is list_b
Out[]: True
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a

list_a == list_b
Out[]: True

list_a is list_b
Out[]: True

list_a is not list_b
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a

list_a == list_b
Out[]: True

list_a is list_b
Out[]: True

list_a is not list_b
Out[]: False
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a

list_a == list_b
Out[]: True

list_a is list_b
Out[]: True

list_a is not list_b
Out[]: False

id(list_a)
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a

list_a == list_b
Out[]: True

list_a is list_b
Out[]: True

list_a is not list_b
Out[]: False

id(list_a)
Out[]: 139722130120640
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a

list_a == list_b
Out[]: True

list_a is list_b
Out[]: True

list_a is not list_b
Out[]: False

id(list_a)
Out[]: 139722130120640

id(list_b)
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a

list_a == list_b
Out[]: True

list_a is list_b
Out[]: True

list_a is not list_b
Out[]: False

id(list_a)
Out[]: 139722130120640

id(list_b)
Out[]: 139722130120640
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a

list_a == list_b
Out[]: True

list_a is list_b
Out[]: True

list_a is not list_b
Out[]: False

id(list_a)
Out[]: 139722130120640

id(list_b)
Out[]: 139722130120640
```

these numbers will change every time you restart your notebook

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a

list_b[1] = 'world!'
list_b
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a

list_b[1] = 'world!'
list_b
Out[]: ['hello', 'world!']

list_a
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_a = ['hello', 'world']
list_b = list_a

list_b[1] = 'world!'
list_b
Out[]: ['hello', 'world!']

list_a
Out[]: ['hello', 'world!']
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_c = ['hello', 'world']
list_d = ['hello', 'world']

list_c is list_d
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_c = ['hello', 'world']
list_d = ['hello', 'world']

list_c is list_d
Out[]: False
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_c = ['hello', 'world']
list_d = ['hello', 'world']

list_c is list_d
Out[]: False

id(list_c)
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_c = ['hello', 'world']
list_d = ['hello', 'world']

list_c is list_d
Out[]: False

id(list_c)
Out[]: 139722129863552
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_c = ['hello', 'world']
list_d = ['hello', 'world']

list_c is list_d
Out[]: False

id(list_c)
Out[]: 139722129863552

id(list_d)
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
list_c = ['hello', 'world']
list_d = ['hello', 'world']

list_c is list_d
Out[]: False

id(list_c)
Out[]: 139722129863552

id(list_d)
Out[]: 139723809589824
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
# Check if a value is equal to NoneType
x = None
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
# Check if a value is equal to NoneType
x = None

x == None
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
# Check if a value is equal to NoneType
x = None

x == None
Out[]: True
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
# Check if a value is equal to NoneType
x = None

x == None
Out[]: True

# However, this is the Pythonic
# or 'idiomatic' way
x is None
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
# Check if a value is equal to NoneType
x = None

x == None
Out[]: True

# However, this is the Pythonic
# or 'idiomatic' way
x is None
Out[]: True
```

Python wrap

`list`, `set`, `dict` comprehensions

`False`, `0`, `True`, `1`

`id()`, `is`, `is not`

`del`

`del` removes data, so you cannot access it anymore.

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
subjects = ['Math', 'History', 'English', 'Science']

del subjects[2]
subjects
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
subjects = ['Math', 'History', 'English', 'Science']

del subjects[2]
subjects
Out[]: ['Math', 'History', 'Science']
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
subjects = ['Math', 'History', 'English', 'Science']

del subjects[2]
subjects
Out[]: ['Math', 'History', 'Science']

# What's the difference between del, .remove() and .pop()?
# .remove() removes the first matching value, not a
# specific index

# del removes the item at a specific index

# .pop() removes the item at a specific index AND
# returns the item
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
store_d = {
    'store': 'Store D',
    'apples': 0,
    'bananas': 53,
    'kiwis': 4
}

del store_d['apples']
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
store_d = {
    'store': 'Store D',
    'apples': 0,
    'bananas': 53,
    'kiwis': 4
}

del store_d['apples']
Out[]: {'store': 'Store D', 'bananas': 53, 'kiwis': 4}
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
store_d = {
    'store': 'Store D',
    'apples': 0,
    'bananas': 53,
    'kiwis': 4
}

del store_d['apples']
Out[]: {'store': 'Store D', 'bananas': 53, 'kiwis': 4}
# You can also write
# store_d.pop('apples', None)
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
store_d = {
    'store': 'Store D',
    'apples': 0,
    'bananas': 53,
    'kiwis': 4
}

del store_d['apples']
Out[]: {'store': 'Store D', 'bananas': 53, 'kiwis': 4}
# You can also write
# store_d.pop('apples', None)

del store_d
store_d
Out[]:
```

Python wrap

list, set, dict comprehensions

False, 0, True, 1

id(), is, is not

del

```
store_d = {
    'store': 'Store D',
    'apples': 0,
    'bananas': 53,
    'kiwis': 4
}

del store_d['apples']
Out[]: {'store': 'Store D', 'bananas': 53, 'kiwis': 4}
# You can also write
# store_d.pop('apples', None)

del store_d
store_d
Out[]: Error
```

If we have time

In-class group exercises

Please help clean up: close windows, return tables, etc.

Homework

https://journ233.github.io