

CREATING VARIABLES

```
= :source-highlighter: pygments font  
:navigation: :revealjs_hash: true :customcss:
```

```
/U...ides.css
```

```
:...:
```

```
x = 5
```

CREATING VARIABLES

```
x = 5
```



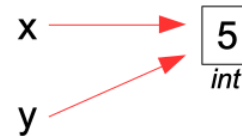
CREATING VARIABLES

```
x = 5  
y = x
```



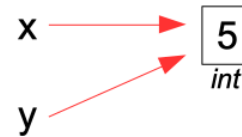
CREATING VARIABLES

```
x = 5  
y = x
```



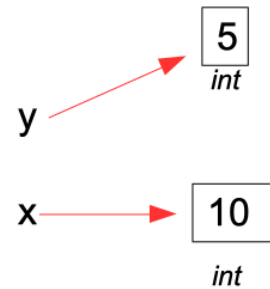
CREATING VARIABLES

```
x = 5  
y = x  
x = 10
```



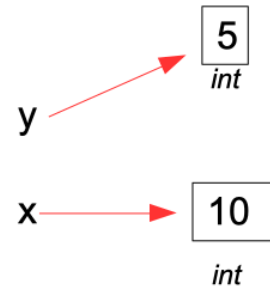
CREATING VARIABLES

```
x = 5  
y = x  
x = 10
```



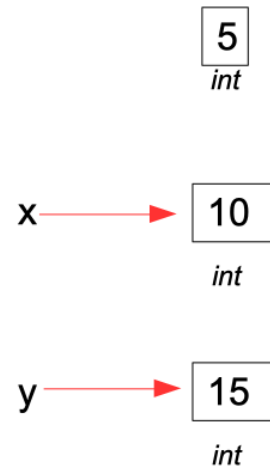
CREATING VARIABLES

```
x = 5  
y = x  
x = 10  
y = 15
```



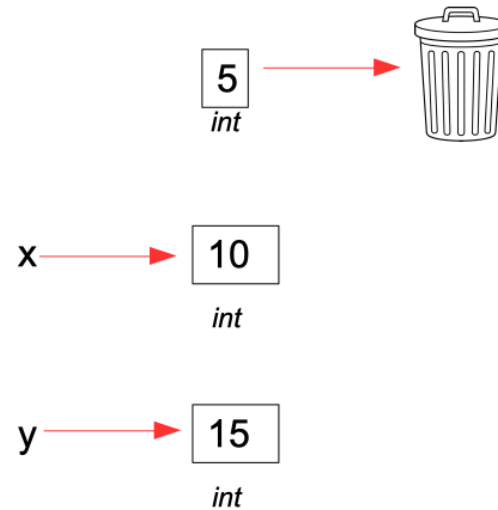
CREATING VARIABLES

```
x = 5  
y = x  
x = 10  
y = 15
```



CREATING VARIABLES

```
x = 5  
y = x  
x = 10  
y = 15
```



```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
  images :revealjsdir:
    • Three flavors
      /Users/jstrick/curr/courses/python/reveal.js-master
        ■ single-delimited
      :revealjs_theme.:revealjs_slideNumber: h/v
        ■ triple-delimited
        ■ raw
```

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1020 :imagedir:
  images :revealjsdir:
  /Users/jstrick/curr/courses/python/revealjs-master
:revealjs_theme: :revealjs_slideNumber: h/v
"spam\n"
'spam\n'

print("Guido's the bomb!")
print('Guido is the "benevolent" dictator of Python')
```

```
= :source-highlighter: pygments :icons: font
:navigation: revealjs_flash: true: customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false: revealjs_width: 1080: imagedir:
```

- No need to escape quotes

```
/Users/jstrick/curr/courses/python/reveal.js-master
'''spam\n'''
'''spam\n'''
:revealjs_theme: :revealjs_slideNumber: h/v
```

```
query = """
    select *
    from logs
    where date > '2018-02-19'
    """
```

```
print('' Guido's the "benevolent" dictator of Python ''')
```

= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images :revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
• Does not interpret backslashes
:revealjs_theme: :revealjs_slideNumber: h/v

```
r"spam\n"  
r'spam\n'
```

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images :revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: :revealjs_slideNumber: h/v
```

```
colors = ['purple', 'orange', 'black']
print(colors[1]) # prints 'orange'
for color in colors:
    print(color)
```

= :source-highlighter: pygments :icons: font
 :navigation: :revealjs_hash: true :customcss:
 /Users/jstrick/curr/courses/python/common/slides/slides.css
 :revealjs_center: false :revealjs_width: 1080 :imagedir:
 images:revealjsdir:
 /Users/jstrick/curr/courses/python/reveal.js-master
 s = :revealjs_theme: :revealjs_slideNumber: h/v

```

s[0:3]      # first 3 characters "WOM"
s[:3]       # same, using default start of 0 "WOM"
s[1:4]      # s[1] through s[3] "OMB"
s[3:6]      # s[3] through end "BAT"
s[3:len(s)] # s[3] through end "BAT"
s[3:]       # s[3] through end, using default end "BAT"

```

DICTIONARY

```
= :source-highlighter: pygments :icons: font  
:navigation: :revealjs_hash: true :customcss:
```

```
/Users/jstrick/curr/courses/python/common/slides/slides.css
```

- Key/value pairs

```
:revealjs_center: false :revealjs_width: 1080 :imagedir:
```

- Keys must be immutable

```
images :revealjsdir:
```

```
/Users/jstrick/curr/courses/python/reveal.js-master
```

```
:revealjs_theme: :revealjs_slideNumber: h/v
```

- int, float

- tuple

- Keys are unique

- Keys/values stored in insertion order


```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images:revealjsdir:
/DictionaryItems
/Users/jstrick/curr/courses/python/reveal.js-master
for:revealjs_theme::revealjs_slideNumber: h/v
... # use key or value here
```

READING TEXT FILES

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
    images :revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: :revealjs_slideNumber: h/v
```

```


```

```
with open("somefile") as file_in:
```

= :source-highlighter: pygments :icons: font
READING ONE LINE AT A TIME
:navigation: revealjs_hash: true: customcss:

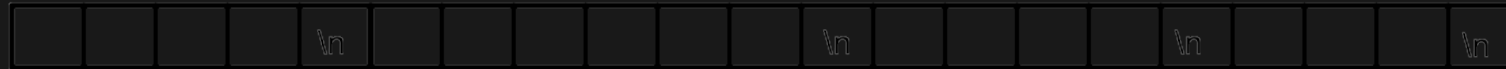
/Users/jstrick/curr/courses/python/common/slides/slides.css

:revealjs_center: false :revealjs_width: 1080 :imagedir:

images :revealjsdir:

/Users/jstrick/curr/courses/python/reveal.js-master

:revealjs_theme: :revealjs_slideNumber: h/v



```
with open("somefile") as file_in:
    for raw_line in file_in:
        ...
```

= :source-highlighter: pygments :icons: font
READING ONE LINE AT A TIME
:navigation: revealjs_hash: true: customcss:

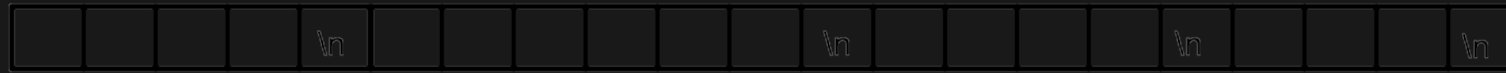
/Users/jstrick/curr/courses/python/common/slides/slides.css

:revealjs_center: false :revealjs_width: 1080 :imagedir:

images :revealjsdir:

/Users/jstrick/curr/courses/python/reveal.js-master

:revealjs_theme: :revealjs_slideNumber: h/v



```
with open("somefile") as file_in:
    for raw_line in file_in:
        ...
```

= :source-highlighter: pygments :icons: font
READING ONE LINE AT A TIME
:navigation: :revealjs_hash: true :customcss:

/Users/jstrick/curr/courses/python/common/slides/slides.css

:revealjs_center: false :revealjs_width: 1080 :imagedir:

images :revealjsdir:

/Users/jstrick/curr/courses/python/reveal.js-master

:revealjs_theme: :revealjs_slideNumber: h/v

				\n						\n					\n				\n
--	--	--	--	----	--	--	--	--	--	----	--	--	--	--	----	--	--	--	----

```
with open("somefile") as file_in:
    for raw_line in file_in:
        ...
```

= :source-highlighter: pygments :icons: font
READING ONE LINE AT A TIME
:navigation: reveals_hash: true: customcss:

/Users/jstrick/curr/courses/python/common/slides/slides.css

:revealjs_center: false :revealjs_width: 1080 :imagedir:

images :revealjsdir:

/Users/jstrick/curr/courses/python/reveal.js-master

:revealjs_theme: :revealjs_slideNumber: h/v

				\n						\n					\n			\n
--	--	--	--	----	--	--	--	--	--	----	--	--	--	--	----	--	--	----

```
with open("somefile") as file_in:
    for raw_line in file_in:
        ...
```

READING ENTIRE FILE INTO STRING

```
- source_highlighter: pygments: icons: font:  
:navigation: :revealjs_hash: true :customcss:  
/Users/jstrick/curr/courses/python/common/slides/slides.css  
:revealjs_center: false :revealjs_width: 1080 :imagedir:  
images :revealjsdir:  
/Users/jstrick/curr/courses/python/reveal.js-master  
:revealjs_theme: :revealjs_slideNumber: h/v
```



```
with open("somefile") as file_in:  
    contents = file_in.read()
```

`- source_highlighter: pygments.icons: font`
READING FILE INTO LIST OF

`:navigation: :revealjs_hash: true :customcss:`

STRINGS (WITH EOL)

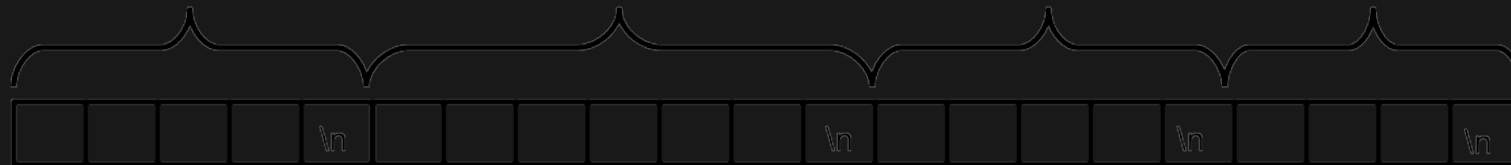
`/Users/jstrick/curr/courses/python/conda-br/slides/slides.css`

`:revealjs_center: false :revealjs_width: 1080 :imagedir:`

`images :revealjsdir:`

`/Users/jstrick/curr/courses/python/reveal.js-master`

`:revealjs_theme: :revealjs_slideNumber: h/v`



```
with open("somefile") as file_in:  
    all_lines = file_in.readlines()
```

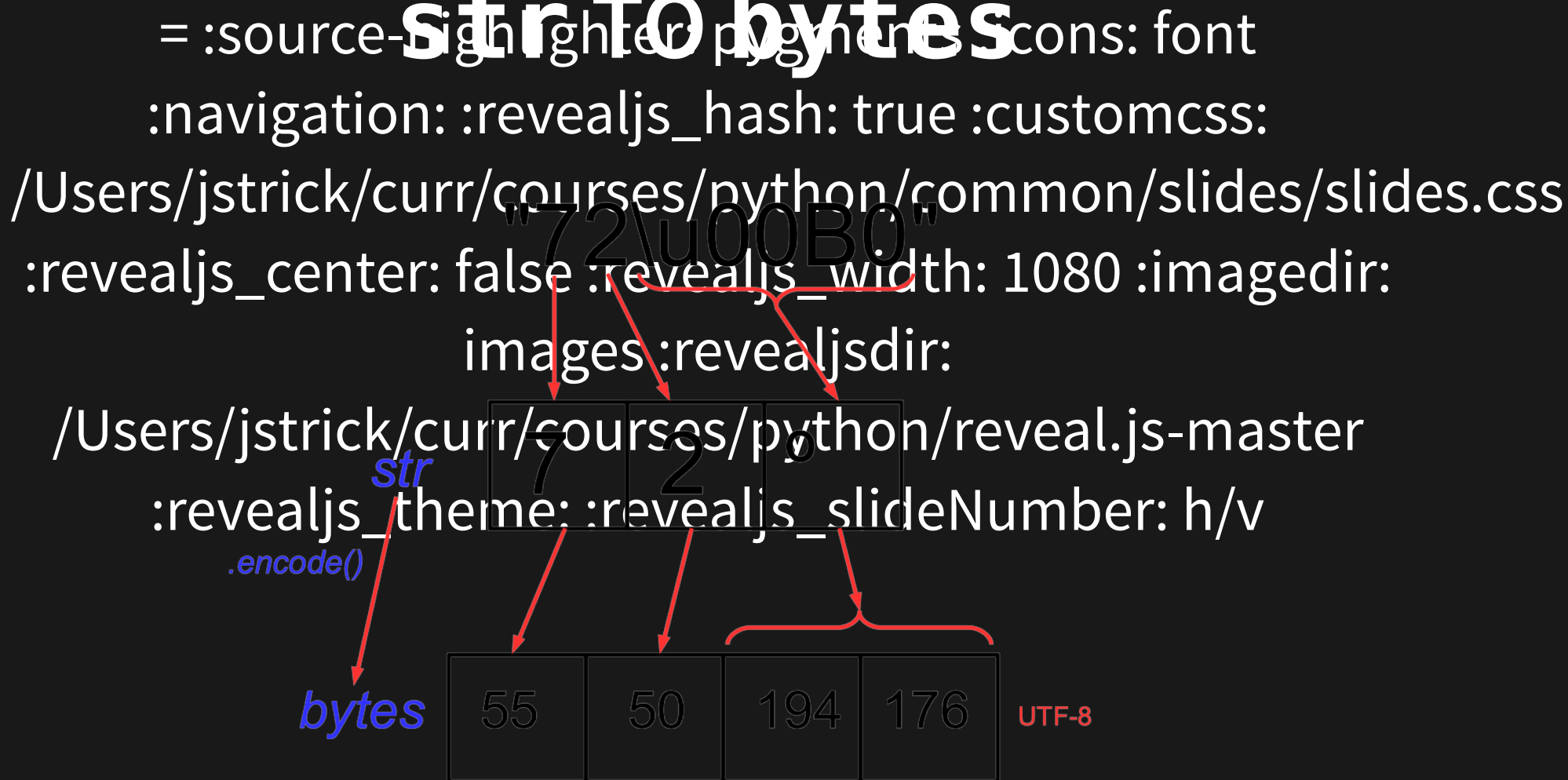


```
- source_highlighter: pygments.icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images :revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: :revealjs_slideNumber: h/v
```



```
with open("somefile") as file_in:
    all_lines = file_in.read().splitlines()
```

str to bytes



bytes to str

```
= :source-highlighter: pygments icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images :revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: :revealjs_slideNumber: h/v
```

b"72\xc2\xb0"

bytes

55	50	194	176
----	----	-----	-----

UTF-8

.decode()

str

7	2	°
---	---	---

LISTS VS TUPLES

<code>= :source_highlighter pygments: font</code>	<code>:navigation: :revealjs_hash: true :customcss:</code>
Lists <code>/Users/jstrick/curr/courses/python/common/slides/slides.css</code>	Tuples <code>/Users/jstrick/curr/courses/python/common/slides/slides.css</code>
<code>:revealjs_center: false :revealjs_width: 1080 :imagedir:</code> Dynamic array <code>images :revealjsdir:</code>	<code>:revealjs_center: false :revealjs_width: 1080 :imagedir:</code> Collection of related fields <code>images :revealjsdir:</code>
<code>/Users/jstrick/curr/courses/python/reveal.js-master</code>	<code>/Users/jstrick/curr/courses/python/reveal.js-master</code>
<code>:revealjs_theme: :revealjs_slideNumber: h/v</code> Mutable/unhashable	<code>:revealjs_theme: :revealjs_slideNumber: h/v</code> Immutable/hashable
Position doesn't matter	Position matters
Use case: iterating	Use case: indexing or unpacking

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images :revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: :revealjs_slideNumber: h/v
```

A MYTH

TUPLES ARE JUST READ-ONLY LISTS

= :source-highlighter: pygments :icons: font

:navigation: :revealjs_hash: true :customcss:

/Users/jstrick/curr/courses/python/common/slides/slides.css

:revealjs_center: false :revealjs_width: 1080 :imagedir:

images :revealjsdir:

/Users/jstrick/curr/courses/python/reveal.js-master

:revealjs_theme: :revealjs_slideNumber: h/v

- Third-party

- attrs

- Pydantic

SORTING

```
= :source-highlighter: pygments :icons: font
:revealjs_hash: true :customcss:
Numbers
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
Strings
images :revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
"C1C2C3" "C1C2C3" "C1C2C3"
:revealjs_theme: :revealjs_slideNumber: h/v
```

Nested iterables

```
[Obj1, Obj2, Obj3], [Obj1, Obj2,
Obj3],
```

Dictionary elements

```
(key, value), (key, value), (key,
```

```

= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :image_dir:
  images :revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: revealjs :slide_number: 1/v

```

- generator expression

(EXPR for VAR ... in ITERABLE if CONDITION)


```

= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1000 :imgdir:
  images :revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: revealjs_slideNumber if {CONDITION}

```

- set comprehension

```
{EXPR for VAR ... in ITERABLE if CONDITION}
```

ITERABLES

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images :revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: :revealjs_slideNumber: h/v
```

IN MEMORY!

VIRTUAL!

Iterables

Containers (AKA collections)

Iterators

Sequences

Mappings

returned by

str
bytes
list
tuple
collections.namedtuple
range()

dict
collections.defaultdict
collections.Counter
set
frozenset

open()
reversed()
enumerate()
zip()
itertools.groupby()
itertools.chain()
itertools.zip_longest()
iterator class
generator expression
generator function
etc.

returned by
sorted()
list comprehension
str.split()
etc.

returned by
dict comprehension
set comprehension
etc.

```

= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
  images :revealjsdir:
  /Users/jstrick/curr/courses/python/reveal.js-master
  • All elements in memory
:revealjs_theme: :revealjs_slideNumber: h/v
  • Can be indexed with [ ]

```

- Have a length

BUILTIN CONTAINERS

= :source-highlighter: pygments: font

:navigation: :revealjs_hash: true :customcss:

/Users/jstrick/curr/courses/python/common/slides/slides.css

:revealjs_center: false :revealjs_width: 1080 :imagedir:

list

images :revealjsdir:

dict

/Users/jstrick/curr/courses/python/reveal.js-master

tuple

:revealjs_theme: :revealjs_slideNumber: h/v

set

string

frozenset

bytes

range

ITERATORS

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
  • Virtual (no memory used for data)
  Images: revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
  • Lazy evaluation (py)
:revealjs_theme: :revealjs_slideNumber: h/v
  • Cannot be indexed with [ ]

  • Do not have a length

  • One-time-use
```

ITERATORS RETURNED BY

`- :source_highlighter: pygments: icons: font
:navigation: :revealjs_hash: true :customcss:`

`/Users/jstrick/curr/courses/python/common/slides/slides.css`

- `open()`

`:revealjs_center: false :revealjs_width: 1080 :imagedir:`

- `enumerate()`

`Images :revealjsdir:`

`/Users/jstrick/curr/courses/python/reveal.js-master`

- `dict.items()`

`:revealjs_theme: :revealjs_slideNumber: h/v`

- `zip()`

- `reversed()`

- *generator expression or function*

- *iterator class*

= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:

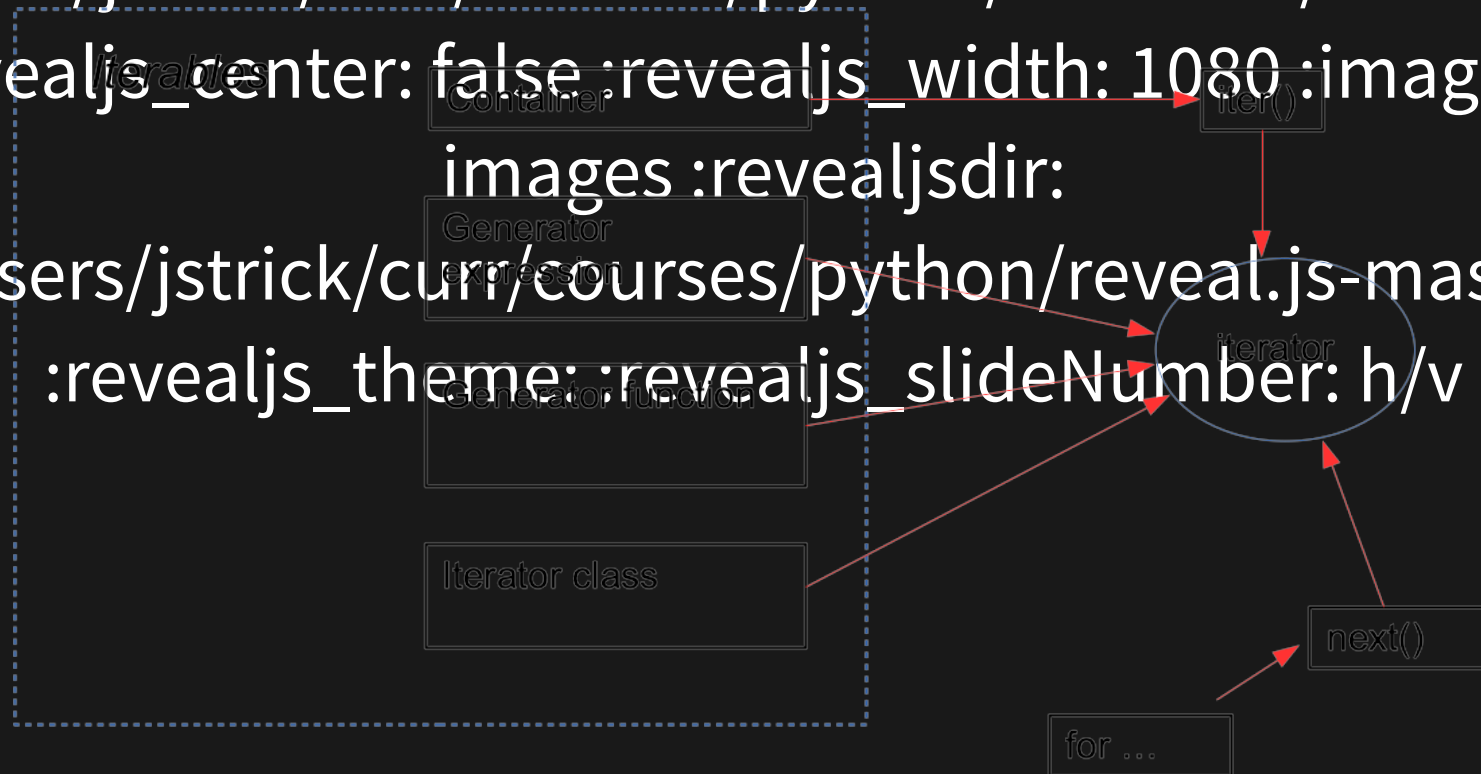
/Users/jstrick/curr/courses/python/common/slides/slides.css

:revealjs_center: false :revealjs_width: 1080 :imagedir:

images :revealjsdir:

/Users/jstrick/curr/courses/python/reveal.js-master

:revealjs_theme: :revealjs_slideNumber: h/v



= :source-highlighter: pygments :icons: font

:navigation: :revealjs_hash: true :customcss:

FUNCTION PARAMETERS

/Users/jstrick/curr/courses/python/common/slides/slides.css

:revealjs_center: false :revealjs_width: 1080 :revealjs_image_dir:

images :revealjsdir:

/Users/jstrick/curr/courses/python/reveal.js-master

:revealjs_theme: :revealjs_slideNumber: h/v

def func(p1, /, p2, p3, *p4, p5, p6, **p7):

pass

AKA Keyword-Only

= :source-highlighter: pygments :icons: font

:navigation: :revealjs_hash: true :customcss:

FUNCTION PARAMETERS

/Users/jstrick/curr/courses/python/common/slides/slides.css

:revealjs_center: false :revealjs_width: 1080 :revealjs_image_dir:

images :revealjs_dir:

/Users/jstrick/curr/courses/python/reveal.js-master

:revealjs_theme: :revealjs_slideNumber: h/v

def func(p1, /, p2, p3, *, p5, p6, **p7):

pass

AKA Keyword-Only

POSITIONAL-
ONLY

REQUIRED
(NAME OPTIONAL)

REQUIRED

OPTIONAL

= :source-highlighter: pygments :icons: font

:navigation: revealjs :theme: none :customcss:

ARGUMENT PASSING

/Users/jstrick/curr/courses/python/common/slides/slides.css

:revealjs_center: false :revealjs_wid  1080 :imagedir:

Passing by
reference

images :revealjsdir:

Passing
by value

Passing by
sharing

/Users/jstrick/curr/courses/python/reveal.js-master

:revealjs_theme: :revealjs_slideNumber: h/v

- Read-only reference is passed
- Mutables may be changed via reference
- Immutables may not be changed

```
def spam(x, y):  
    x = 5  
    y.append("ham")  
  
foo = 17  
bar = ["toast", "jam"]  
  
spam(foo, bar)
```

VARIABLE SCOPE

```
= :source-highlighter: pygments: icons: font
: navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: :revealjs_slideNumber: h/v
```

global

images :revealjsdir:

COUNT = 0

LIMIT = 1

local

def span(han):

eggs = 5

print(eggs)

print(COUNT)

```

= :source-highlighter: pygments :icons: font
:navigation: true :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
ALPHA = 10
:revealjs_center: false :revealjs_width: 1080 :imagedir:
def spam(beta):
    gamma = 20
    print(ALPHA)
    print(beta)
    print(gamma)
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: :revealjs_slideNumber: h/v
spam(1234)

```

BUILTIN

GLOBAL

LOCAL

```
= :source-highlighter: pygments :icons: font
```

```
:navigation: :revealjs hash: true :customcss:
```

```
/Users/jstrick/curr/courses/python/common/slides/slides.css
```

```
:revealjs_center: false :revealjs_width: 1080 :imagedir:
```

```
images:revealjsdir:
```

```
/Users/jstrick/curr/courses/python/reveal.js-master
```

```
:revealjs_theme: :revealjs_slideNumber: h/v
```

a.py

COPY/PASTING FUNCTIONS
:source_highlighter: pygments:icons:font:
:navigation: :revealjs_hash: true :customcss:

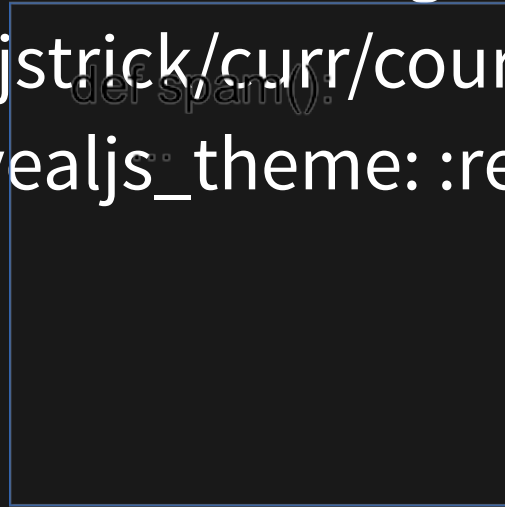
/Users/jstrick/curr/courses/python/common/slides/slides.css

:revealjs_center: false :revealjs_width: 1080 :imagedir:

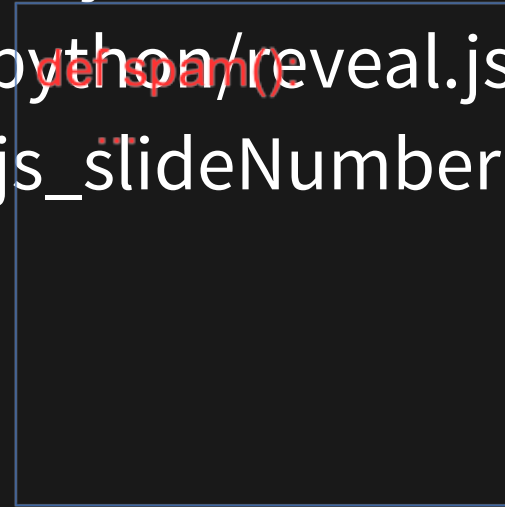
images :revealjsdir:

/Users/jstrick/curr/courses/python/reveal.js-master

:revealjs_theme: :revealjs_slideNumber: h/v



`a.py`



`b.py`

= :source-highlighter: pygments :icons: font
COPY/PASTING FUNCTIONS
.navigation: :revealjs_hash: true :customcss:

/Users/jstrick/curr/courses/python/common/slides/slides.css

:revealjs_center: false :revealjs_width: 1080 :imagedir:

images :revealjsdir:

/Users/jstrick/curr/courses/python/revealjs-master
def spam():
:revealjs_theme: :revealjs_slideNumber: h/v

a.py

b.py

c.py

COPY/PASTING FUNCTIONS

:navigation: :revealjs_hash: true :customcss:

/Users/jstrick/cun/courses/python/compn/slides/slides.css

:revealjs_center: false :revealjs_width: 1080 :imagedir:

images :revealjsdir:

/Users/jstrick/cun/courses/python/revealjs-master

:revealjs_theme: :revealjs_slideNumber: h/v

def spam():

...

a.py

def spam():

...

b.py

def spam():

...

c.py

USING A MODULE

```
= :source highlighter: pygments icons: font  
:navigation: :revealjs_hash: true :customcss:
```

```
/Users/jstrick/curr/courses/python/common/slides/slides.css
```

```
:revealjs_center: false :revealjs_width: 1080 :imagedir:  
images :revealjsdir:
```

```
/Users/jstrick/curr/courses/python/reveal.js-master
```

```
:revealjs_theme: :revealjs_slideNumber: h/v
```

```
import mod  
mod.spam()
```

a.py

```
import mod  
mod.spam()
```

b.py

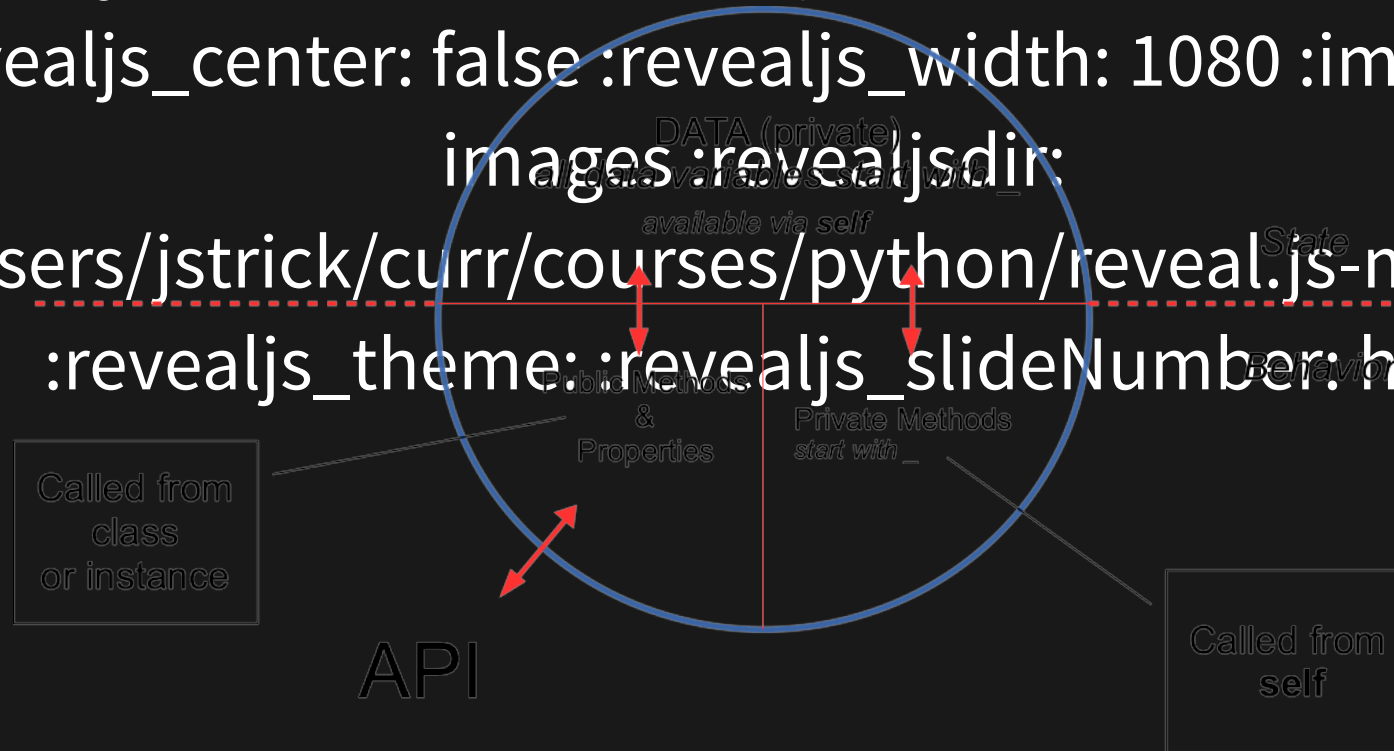
```
import mod  
mod.spam()
```

c.py

```

= :source-highlighter: pygments :icons: font
:navigation: revealjs :hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images :revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: :revealjs_slideNumber: h/v

```



STR() VS REPR()

<pre>= :source-highlighter: pygments: font :navigation: :revealjs_hash: true :customcss: /Users/jstrick/curr/courses/python/common/slides/slides.css</pre>	
<pre>:revealjs_center: false :revealjs_width: 1080 :imagedir: For humans images :revealjsdir:</pre>	<pre>How to reproduce object</pre>
<pre>/Users/jstrick/curr/courses/python/reveal.js-master "Informal" form .revealjs_theme: :revealjs_slideNumber: h/v</pre>	<pre>"Official" form</pre>
Info about object	Code to create object
If undefined, uses repr()	If undefined, uses object.__repr__()

```
= :source-highlighter: pygments :icons: font
```

```
navigation: reveals_hides: true :custom_css:
```

DECORATORS SAVE TYPING

```
/Users/jstrick/curr/courses/python/common/slides/slides.css
```

```
:revealjs_center: false :revealjs_width: 1080 :imagedir:
```

```
def spam():  
    pass
```

```
images :revealjsdir:
```

```
/Users/jstrick/curr/courses/python/reveal.js-master
```

```
spam = deco(spam)
```

```
:revealjs_theme: :revealjs_slideNumber: h/v  
use
```

```
@deco  
def spam():  
    pass
```

spam is only typed once, instead of 3 times

```

= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images :revealjsdir:
@DECORATOR
def some_function():
    pass
:revealjs_theme: :revealjs_slideNumber: h/v
same as

some_function = DECORATOR(some_function)

```

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images :revealjsdir:
```

IMPLEMENTATION

```
def DECORATOR(original_function):
    @wraps(original_function)
    def WRAPPER(*args, **kwargs):
        # add code here
        result = original_function(*args, **kwargs)
        return result
    return WRAPPER

def revealjs_theme():
    :revealjs_slideNumber: h/v
```

```

= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :revealjs_height: 720
:revealjs_images: :revealjsdir:
  /Users/jstrick/curr/courses/python/reveal.js-master
  @DECORATOR(param, ...)
  def some_function():
    pass
:revealjs_theme: :revealjs_slideNumber: h/v
  same as

some_function = DECORATOR(param, ...)(some_function)

```

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
```

IMPLEMENTATION

```
def DECORATOR(param, ...):
    def WRAPPER_FACTORY(original_function):
        @wraps(original_function)
        def WRAPPER(*args, **kwargs):
            # add code here using decorator params
            result = original_function(*args, **kwargs)
            return result
        return WRAPPER
    return WRAPPER_FACTORY

/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: revealjs :slideNumber: h/v
```


PYREVERSE (CLASSES)

= :source-highlighter pygments:font

/Users/jstrick/cu

:revealjs_center

/Users/jstrick/c

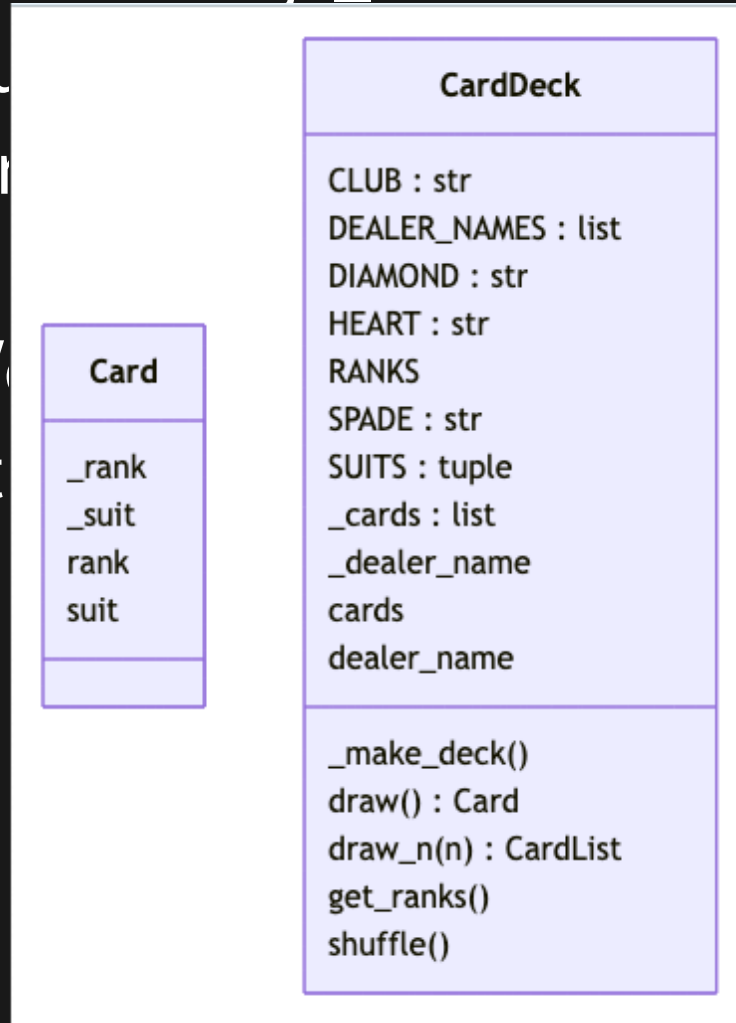
:revealjs_t

mon/slides/slides.css

1080 :imagedir:

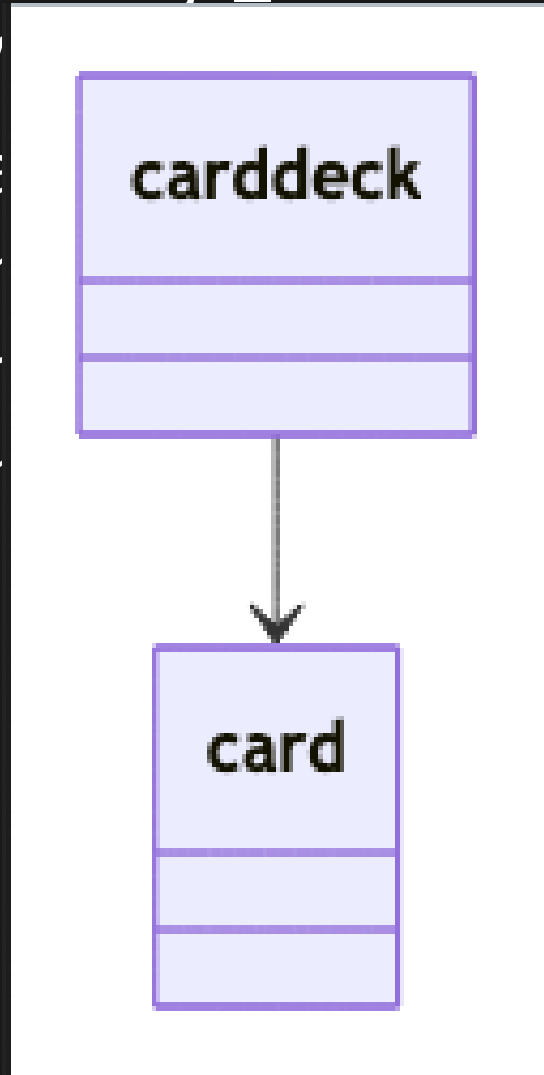
veal.js-master

umber: h/v



PYREVERSE (PACKAGES)

```
= :source-highlighter: pygments :code-font:  
:navigation: :revealjs_hash: true :customcss:  
/Users/jstrick/curr/common/slides/slides.css  
:revealjs_center: false :width: 1080 :imagedir:  
in :  
/Users/jstrick/curr/reveal.js-master  
:revealjs_themeNumber: h/v
```



PYTHON DB INTERFACE

= :source:highlighter:pygments:console:
:navigation: :revealjs_hash: true :customcss:

/Users/jstrick/curr/courses/python/common/slides/slides.css

:revealjs_center: false :revealjs_width: 1080 :imagedir:

images :revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: :revealjs_slideNumber: h/v

psycopg2

cx_oracle

pymysql

sqlite3

PostgreSQL
LIB

Oracle
LIB

MySQL
LIB

SQLite3
LIB

PostgreSQL

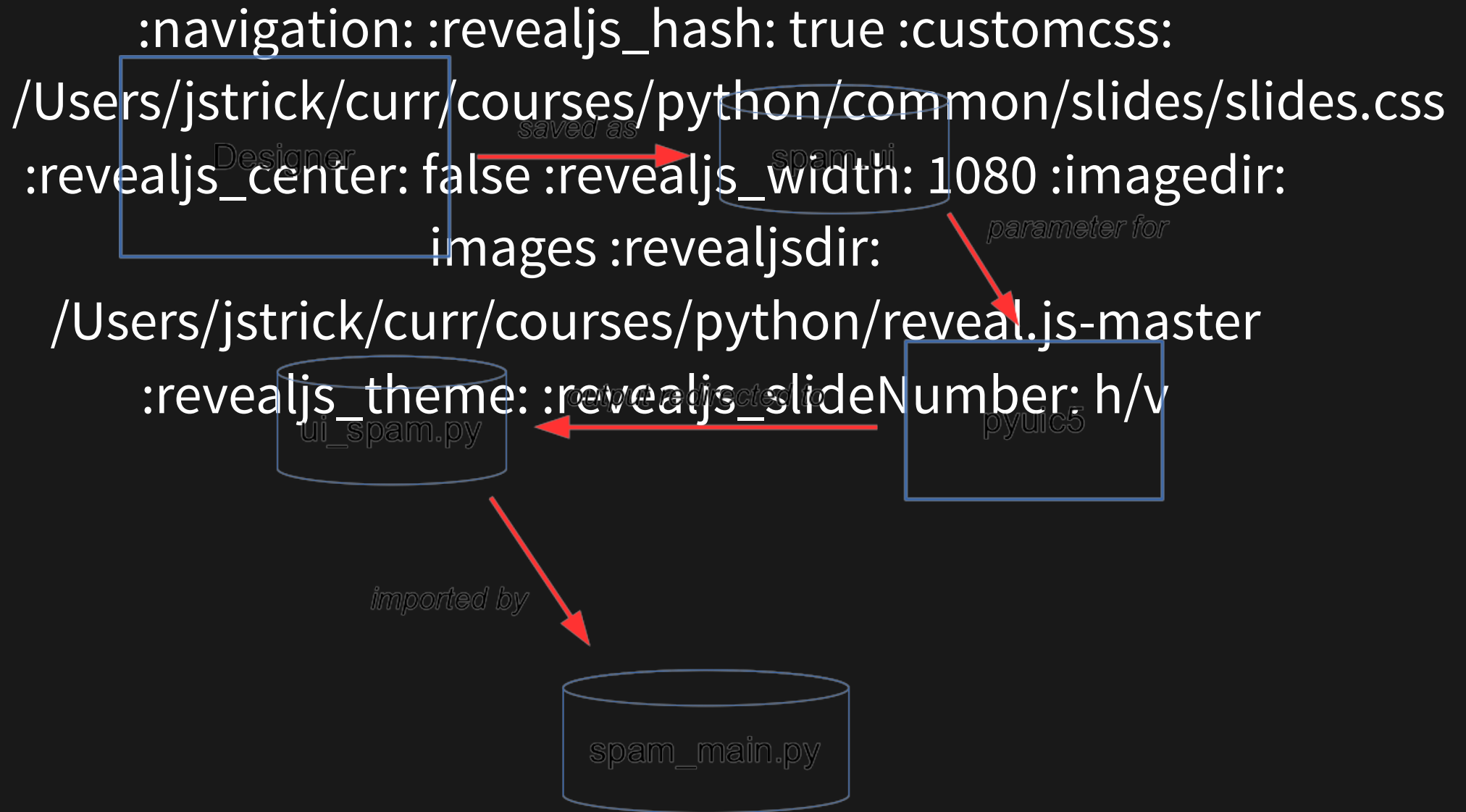
Oracle

MySQL

SQLite3

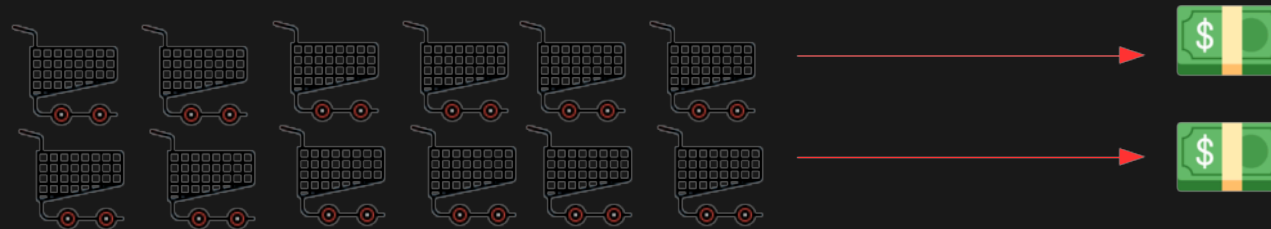
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images:revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: :revealjs_slideNumber: h/v
conn = package.connect(server, db, user, password, etc.)
conn.commit()
conn.rollback()
cursor = conn.cursor()
cursor.execute(sql, values)
cursor.executemany(sql, iterable-of-values)
cursor.executescript(script)
cursor.fetchall()
cursor.fetchone()
cursor.fetchmany(n)

PYQT DESIGNER WORKFLOW



CONCURRENCY

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :image_dir:
images :revealjs_dir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: :revealjs_slide_number: n/v
```



ELEMENT TREE

= :source-highlighter: pygments :font

:navigation: :revealjs_hash: true :customcss:

XML

ElementTree

/Users/jstrick/curr/courses/python/common/slides/slides.css

:revealjs_center: false :revealjs_width: 1080 :imagedir:

<presidents>

Element

<president term="1">

tag="presidents"

<first>George</first>

Element {"term": "1" }

<last>Washington</last>

tag="president"

</president>

Element

<president term="2">

tag="first"

<first>John</first>

text="George"

<last>Adams</last>

Element

</president>

tag="last"

</presidents>

text="Washington"

Element {"term": "2" }

tag="president"

Element

tag="first"

text="John"

Element

tag="last"

text="Adams"

```
= :source_highlighter: pygments: icons: font
: navigation: :revealjs_hash: true :customcss:
```

```
/Users/jstrick/curr/courses/python/common/slides/slides.css
```

POSITIONAL

NAMED

```
:revealjs_center: false :revealjs_width: 1080 :imagedir:
```

```
images :revealjsdir:
```

```
/Users/jstrick/curr/courses/python/reveal.js-master
```

REQUIRED

OPTIONAL

REQUIRED

OPTIONAL

```
:revealjs_theme: :revealjs_slideNumber: h/v
```

```
def func(p1, p2, *p3, p4, p5, **p6):
```

```
pass
```

AKA Keyword-Only

FUNCTION PARAMETERS

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_master: false :revealjs_width: 1080 :imagedir:
  images :revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: :revealjs_slideNumber: h/v
```

REQUIRED

placeholder

REQUIRED

OPTIONAL

```
def func(p1, p2, *, p4, p5, **p6):
    pass
```

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images :revealjsdir:
```

CONFIGURING VISUAL STUDIO

```
/Users/jstrick/curr/courses/python/reveal.js-master
```

```
:revealjs_theme: :revealjs_slideNumber: h/v
```

Some settings to make programming with Python
easier

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
```

AUTO-SAVE

```
images: revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
:revealjs_theme: :revealjs_slidenumber: h/v
```

- Search for "auto save"
- Set to *after delay*

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
```

LAUNCH FOLDER

- Search for "execute in"
/Users/jstrick/curr/courses/python/reveal.js-master
.revealjs_theme: :revealjs_slideNumber: h/v
- Check box for **Python > Terminal: Execute in File Dir**

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images/revealjsdir:
/Users/jstrick/curr/courses/python/reveal.js-master
• Search for "minimap enabled"
:revealjs_theme: :revealjs_slidenumber: h/v
```

- Uncheck **Editor > Minimap: Enabled**

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images :revealjsdir:
```

EDITOR FONT SIZE

```
/Users/jstrick/curr/courses/python/reveal.js-master
• Search for "editor font size"
:revealjs_theme: .revealjs_slideNumber: h/v
```

- Set **Editor: Font Size** to desired size

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
```

TERMINAL FONT SIZE

```
/Users/jstrick/curr/courses/python/reveal.js-master
```

- Search for "terminal font size"

```
:revealjs_theme: :revealjs_slidenumber: h/v
```

- Set **Terminal: Font Size** to desired size

```
= :source-highlighter: pygments :icons: font
:navigation: :revealjs_hash: true :customcss:
/Users/jstrick/curr/courses/python/common/slides/slides.css
:revealjs_center: false :revealjs_width: 1080 :imagedir:
images/revealjs
```

THEMES

- Got to **File > Preferences > Theme > Color Theme**
:revealjs_theme: :revealjs_slideNumber: h/v
- Select new theme as desired