Midterm 1- Python

Sunday, October 6, 2019 8:15 PM

Python

- Classes → Lecture 7

creating your own variable type, basically

```
class Point:    # creates new class named Point

    def __init__(self)    # initializer method, called when instance of point is created
        self.x = 0
        self.y = 0

                          # dot operator used to access the data

p = Point()               # instantiate an object of type point
q = Point()
```

print(p.x, p.y, q.x, q.y) ⇒ "0 0 0 0"

```
>> p = Point(x,y)
>> p = Point(3,4)
```

```
def distance_from_origin(self):
    return ((self.x ** 2) + (self.y ** 2)) ** 0.5   ⇒ 5.0
```

- Tuples

comma separated sequence of values

immutable

tuple with a single element:

```
tup = (5,)
```

Lists

ordered collection of values

list of any type

```
zs = ["hello", 2.0, 5, [10, 20]]
print zs[3] >> [10, 20]
print zs[0] >> hello
```

Dictionaries

unordered, changeable, indexed

{'key' : value}

instead of indexing by number, index by key

Higher order functions - Lecture 9

- map

map(func, iterables) # applies func to all elements in iterables and returns the resulting iterables

filter

filter(func, iterable) # one iterable, returns a boolean type, if not, returns iterable passed to it, func takes 1 arg, filter only returns the iterables that return True

leftReduce - Lecture 10

rightReduce((lambda a, b: a+b), [1, 2, 3] ⇒ (1+(2+(3+0)) ⇒ 6