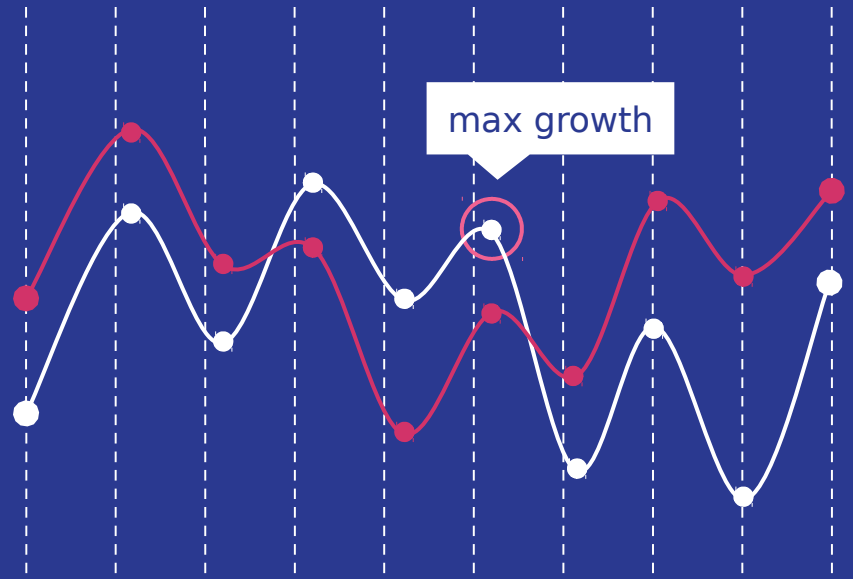
Introduction to Python

CMP 201 (2019/2020)

SORINOLU, Babafemi Gabriel



LESSON 7:
Be a Ninja Coder!

Objectives

The aim of this lesson is to introduce the **python programming language**.

Content(Week 1)

- **Lists** ✓
- **Tuples** ✓
- **Sets** ✓
- Dictionary

Python Set:

A set is a collection which is unordered and unindexed. In Python, sets are written with curly brackets.

- It is Unordered so the items will appear in a random order.
- Items in a set cannot be referred to by an index.
- A set can only store unique elements

Change Set value:

Once a set is created, you cannot change its items, but you can add new items.

However, we can decide to first remove the item and add a new item.

To add one item to a set use the add() method.

To add more than one item to a set use the update() method.

```
#Create a Set
days = {"monday", "tuesday", "wednesday","thursday","friday","friday","friday"};

days.update(["saturday",  "sunday"])

for day in days:
    print (day,'is a good day')
```

Removing items:

To remove an item in a set, use the **remove()**, or the **discard()** method.

If the item to remove does not exist, **remove()** will raise an error but **discard()** will NOT raise an error.

```
fruits = {"apple", "banana", "cherry"}
fruits.discard("banana")
fruits.remove("banana")
```

Loop through a set:

You can loop through the set items using a for loop, or ask if a specified value is present in a set, by using the in keyword.

```
FRUITS= {"apple", "banana", "cherry"}
print("banana" in FRUITS)
for x in FRUITS:
  print(x)
```

Set length:

To determine how many items a set has, use the len() method:

```
    fruits = {"apple", "banana", "cherry“}
x=len(fruits)
    print(x)
```

Set Methods:

Python has a set of built-in methods that you can use on set.

Method	Description
add()	Adds an element to the set
clear()	Removes all the elements from the set
copy()	Returns a copy of the set
difference()	Returns a set containing the difference between two or more sets
difference_update()	Removes the items in this set that are also included in another, specified set
discard()	Remove the specified item
intersection()	Returns a set, that is the intersection of two other sets

Set Methods:

Python has a set of built-in methods that you can use on set.

intersection_update()	Removes the items in this set that are not present in other, specified set(s)
isdisjoint()	Returns whether two sets have a intersection or not
issubset()	Returns whether another set contains this set or not
issuperset()	Returns whether this set contains another set or not
pop()	Removes an element from the set
remove()	Removes the specified element
symmetric_difference()	Returns a set with the symmetric differences of two sets
symmetric_difference_update()	inserts the symmetric differences from this set and another

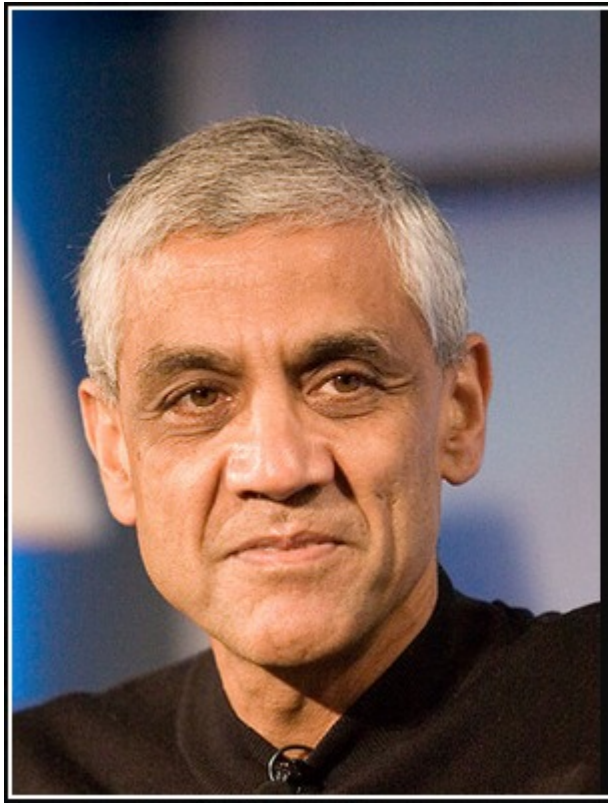
Task

To do in class

EXERCISE

(Uniqueness in code earns extra credit).

1. **Each question should be kept in a single .py file**
2. **then all zipped in a file**
3. **with your matric No. as name of the file**



Doctors can be replaced by software – 80% of them can. I'd much rather have a good machine learning system diagnose my disease than the median or average doctor.

— Vinod Khosla —

AZ QUOTES