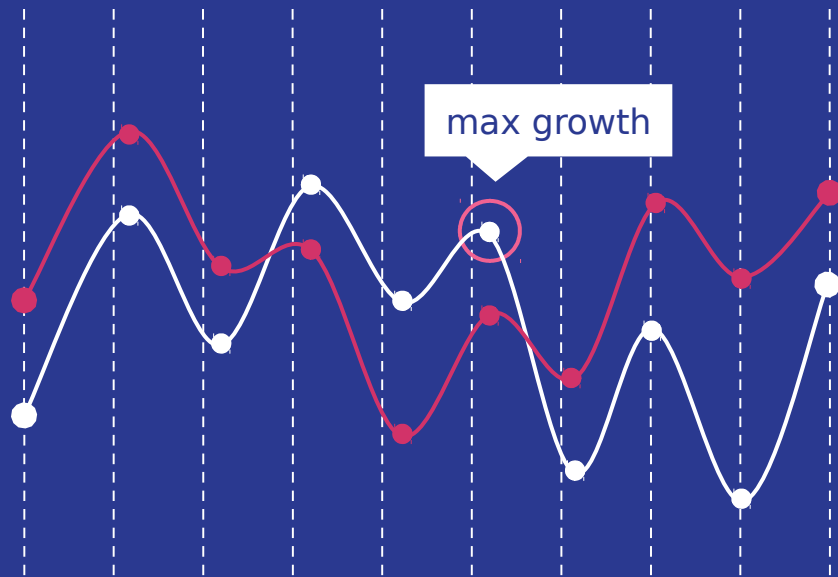# Introduction to Python

CMP 201 (2019/2020)

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LESSON 6:
Be a Ninja Coder!

Objectives

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

Content(Week 1)

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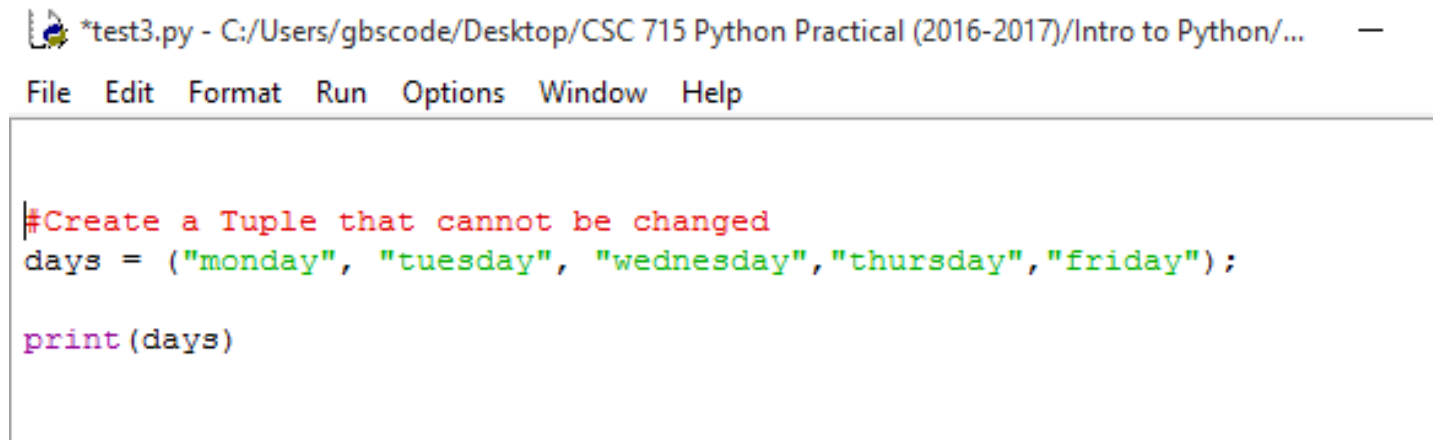- **Tuples** ✓
- Sets
- Dictionary

Python Collections:

A TUPLE is similar to a LIST. The only difference between them is that a tuple cannot be changed after items has been added into it.

Python Tuples:

A tuple is a collection which is ordered and unchangeable. In Python, tuples are written with round brackets.
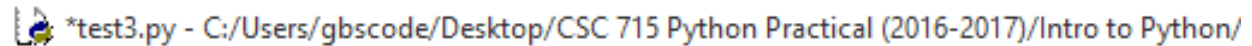
Create a Tuple:

```
#Create a Tuple that cannot be changed
days = ("monday", "tuesday", "wednesday","thursday","friday");

print(days)
```

Access Tuple items:

You access the tuples items by referring to the index number. This is similar to how a list item is also accessed. The index number is zero based.

Access Items:

```
#Create a Tuple that cannot be changed
days = ("monday", "tuesday", "wednesday","thursday","friday");

print(days[0])
print(days[3])
```

Change Tuple value:

Once a tuple is created, you cannot change its values. Tuples are **unchangeable**

Loop through a tuple:

You can loop through the tuple by using a for loop:

Looping through the List Items:

```
test3.py - C:/Users/gbscode/Desktop/CSC 715 Python Practical (2016-2017)/Intro to Python/r.

File   Edit   Format   Run   Options   Window   Help


#Create a Tuple that cannot be changed
days = ("monday", "tuesday", "wednesday","thursday","friday");


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

Check if item exists:

To determine if a specified item is present in a tuple use the in keyword:

To determine if a specified item is not present in a tuple use the **not in** keyword:

Tuple length:

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

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

Add/Remove items:

You cannot add items to a tuple once it has been created neither can you remove from it. However you can delete the tuple using the del keyword

```
fruits = ("apple", "banana", "cherry")
del fruits
```

Why use Tuple then? :

When you need to store a constant or a fixed list of items.

Tuple Methods:

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

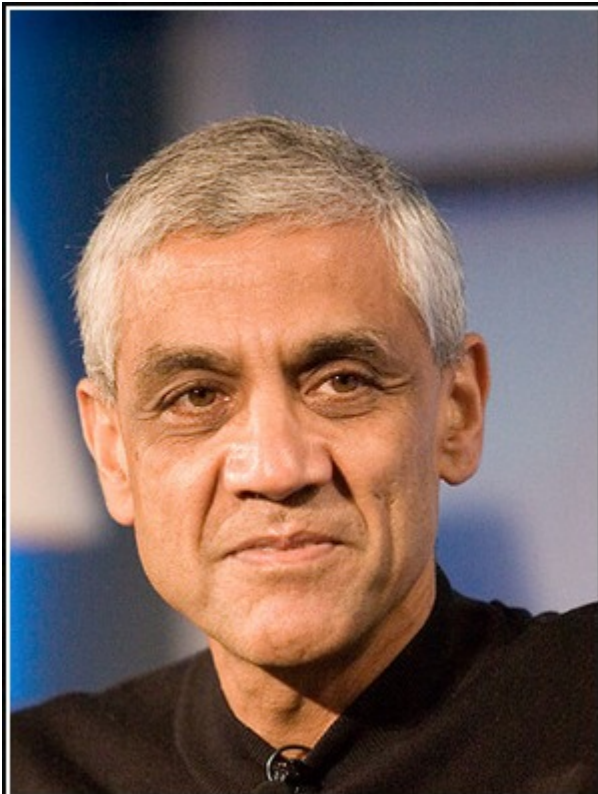| Method	Description
count()	Returns the number of times a specified value occurs in a tuple
index()	Searches the tuple for a specified value and returns the position of where it was found

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* —