# Python_Lesson3: Object Oriented Python

Please don't forget to submit your feedback after the class.

**Lesson Overview:**
In this lesson, we will review Object Oriented Python and NumPy package.
Classes are one of the important concepts of Python. Everything in Python is an Object. Classes enable us to encapsulate data, restrict the scope of data members and functions. They help us in reusability by inheritance. We can define the various level of data encapsulation like private, protected and public.

**Use Case Description:**
1. Inheritance (Bank Account)
2. Multiple Inheritance (Clock and Calendar)
3. numpy
4. web scraping

**Programming elements:**
Object Oriented concepts (classes, constructors, inheritance etc.)

**In class programming:**
1. Create a class Employee and then do the following
a. Create a data member to count the number of Employees
b. Create a constructor to initialize name, family, salary, department
c. Create a function to average salary
d. Create a Fulltime Employee class and it should inherit the properties of Employee class
e. Create the instances of Fulltime Employee class and Employee class and call their member functions.

**2. Web scraping**

Write a simple program that parse a Wiki page
mentioned below and follow the instructions:
https://en.wikipedia.org/wiki/Deep_learning
a. Print out the title of the page
b. Find all the links in the page ('a' tag)
c. Iterate over each tag(above) then return the link using attribute "href" using get

**3. Numpy**

Using NumPy create random vector of size 15 having only Integers in the range 1-20.
Write a program to replace the maximum value in the vector by 0.

**Evaluation Criteria:**
1. Completeness of Features
2. Code Quality (https://en.wikipedia.org/wiki/Best_coding_practices)
3. Time
4. Feedback Submission

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