Python Training.....

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Agenda

- Object Oriented Programming Pillars
- Methods in Classes
- Object attribute v/s Class attribute
- Public, Private attributes & functions
- Assignments

Object oriented programming pillars

- Pillars
  - Abstraction
  - Encapsulation
  - Inheritance
  - Polymorphism
- What is class ?
- What is object ?
  - State, behavior & identity

Methods in Classes

- Manager
  - Constructor : __init__
  - Destructor : __del__
- Mutator
  - Setter Methods
  - e.g SetName
- Accessor
  - Getter Methods
  - e.g GetName
- Overloaded
  - __getslice__
  - __getitem__
  - __setitem__
  - __add__
  - __sub__
  - __div__
  - __mul__
  - __repr__ etc,

Private in Python

- __ prefixed to variable or function makes it private.
- __ at begin & end is for builtin methods.
- No protected status

Assignments

- Write a simple BankAccount class. Account number should be auto-generated. Implement withdraw and deposit methods for the same. Write a menu driven program to perform account operations.
- Write a base class Shape which has constructor, destructor, Draw, Area methods. Create Square, Rectangle & Circle as the derived classes of the same.
- Write a menu driven program for maintaining Employee record.
- Write a Program to implement Complex Number.

Method Resolution Order

- In case of Multiple Inheritance, the order in which Methods present in Base classes are invoked with Derived Class Object is defined by MRO.
- MRO followed before 2.3 :
  - A-->B i.e B inherits A
  - A-->C i.e C inherits A
  - B,C-->D i.e D inherits B & C respectively
  - MRO for class “D” : D then B then A & then C

  Appropriate order would have been D then B then C & then A, as D directly inherits B & C.
  - From 2.3 onwards “C3” algorithm was implemented to have proper MRO