# Object Oriented Programming

**1.Class**

**2.Object**

**3.Constructor**

**4.Inheritance**

In [ ]:

```
1
```

**I want to create person object with first name and last name**

**Indroduce** functionality to introduce him self

In [ ]:

```
1  class Person:
2      def __init__(self,fname,lname):
3          self.firstname  = fname
4          self.lastname = lname
5
6      def introduce(self):
7          print("i am {} {}".format(self.firstname,self.lastname))
```

In [ ]:

```
1
```

**creating objects for Person**

In [ ]:

```
1  a = Person('ayyappa','b')
```

In [ ]:

```
1  a.introduce()
```

In [ ]:

```
1
```

In [ ]:

```
1  b = Person('lakshmi','c')
```

In [ ]:

```
1  b.introduce()
```

In [ ]:

```
1
```

In [5]:

```
1   class Student:
2       def __init__(self,fname,lname,rollno,student_class,college,university):
3           self.firstname = fname
4           self.lastname = lname
5           self.rollno = rollno
6           self.student_class = student_class
7           self.college = college
8           self.university = university
9
10      def selfIntroduction(self):
11          print('i am {} {}, studying {} class at {} - {}'.format(
12              self.firstname,self.lastname,
13              self.student_class,self.college,self.university
14          )
15      )
16
17      def addition(self,a,b):
18          print('i am {}{}'.format(self.firstname,self.lastname))
19          return a+b
20
```

In [6]:

```
1  ayyappa = Student('ayyappa','b','123','Diploma','SMVM polytechnic','AP stateboard')
```

In [7]:

```
1  ayyappa.selfIntroduction()
```

i am ayyappa b, studying Diploma class at SMVM polytechnic - AP stateboard

In [ ]:

```
1
```

In [8]:

```
1  ayyappa.addition(10,20)
```

i am ayyappab

Out[8]:

30

In [ ]:

```
1
```

In [ ]:

```
1
```

In [10]:

```
1  class Employee:
2
3      def addition(self,a,b):
4          return a+b
5
```

In [11]:

```
1  a = Employee()
```

In [12]:

```
1  a.addition(10,30)
```

Out[12]:

40

**take break ,class start at 11:05**

once everyone please ckeck week1 attendance if any doubts please ask after completing todays session

https://github.com/AP-Skill-Development-Corporation/Python-FDP-TEAM-1-1/blob/master/Summer_FDPS%20Attendance(upto%2023-05-2020).pdf (https://github.com/AP-Skill-Development-Corporation/Python-FDP-TEAM-1-1/blob/master/Summer_FDPS%20Attendance(upto%2023-05-2020).pdf)

In [ ]:

```
1
```

**Inheritance in oop**

In [31]:

```
1  class Person:
2      def __init__(self,fname,lname):
3          self.firstname = fname
4          self.lastname = lname
5
6      def introduce(self):
7          print('i am {} {}'.format(self.firstname,self.lastname))
8
```

In [44]:

```python
class Student(Person):
    def __init__(self,firstname,lastname,rollno,college):
        super().__init__(firstname,lastname)
        self.rollno = rollno
        self.college = college

    def getRollno(self):
        super().introduce()
        print('my roll no {}'.format(self.rollno))

    def getcollege(self):
        print('my college {}'.format(self.college))
```

In [45]:

```python
a = Student('ayyappa','b','cse123','smvm polytechnic')
```

In [46]:

```python
a.getRollno()
```

```
i am ayyappa b
my roll no cse123
```

In [37]:

```python
a.getcollege()
```

```
my college smvm polytechnic
```

In [38]:

```python
a.introduce()
```

```
ayyappa
```

In [ ]:

```python

```

In [48]:

```python
a.rollno
```

Out[48]:

```
'cse123'
```

In [49]:

```python
a.college
```

Out[49]:

```
'smvm polytechnic'
```

**Data encapsulation to hide some attributes**

In [50]:

```python
class Person:
    def __init__(self,name,password):
        self.name = name
        self.__password = password
```

In [52]:

```python
a = Person('ayyappa','password123')
```

In [53]:

```python
a.name
```

Out[53]:

```
'ayyappa'
```

In [54]:

```python
a.__password
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
<ipython-input-54-5fa0d46903b0> in <module>
----> 1 a.__password

AttributeError: 'Person' object has no attribute '__password'
```

**\*important functions in python**

**1.map 2.filter 3.reduce**

```
map(function,collection)
```

it returns address for result

In [55]:

```python
numbers = [10,20,30,40,50]
```

**I want to quebe all the numbers in numbers list**

In [56]:

```python
def quobe(number):
    return number**3

result = map( quobe  ,numbers) #  1000 , 8000, 2700
```

In [57]:

```
result
```

Out[57]:

```
<map at 0x64a2f70>
```

In [58]:

```
print(list(result))
```

```
[1000, 8000, 27000, 64000, 125000]
```

In [ ]:

```

```

**filter(fucntion,collection)**

return address of items

In [61]:

```
bool(0)
```

Out[61]:

```
False
```

In [60]:

```
bool(10)
```

Out[60]:

```
True
```

In [63]:

```
numbers = [10,0,20,30,40,60]


result = filter(bool,numbers)
print(list(result))
```

```
[10, 20, 30, 40, 60]
```

**filter I want only other than apples**

In [64]:

```
fruits = ['apple','orange','apple','orange','grapes']
def isnotApple(fruit):
    if fruit != 'apple':
        return True
    return False
```

In [65]:

```
result = filter(isnotApple,fruits)
```

In [66]:

```
print(list(result))
```

['orange', 'orange', 'grapes']

In [ ]:

```

```

In [ ]:

```

```

In [ ]:

```

```

In [ ]:

```

```

In [78]:

```
fh_i = open('students.txt','r')
fh_o = open('report.txt','w')
count = 0
for Line in fh_i:
    count += 1
    if count == 1:
        fh_o.write(Line.strip() + '   Total\n')
    else:
        words = Line.strip().split()
        maths = int(words[1])
        english = int(words[2])
        total = maths + english
        total = str(total)
        fh_o.write(Line.strip()+'    '+total+"\n")

fh_i.close()
fh_o.close()
```

In [ ]:

```

```

In [79]:

```
name = "        ayyappa        "
print(len(name))
```

21

In [80]:

```
1  name.strip()
```

Out[80]:

'ayyappa'

In [ ]:

```
1
```

In [ ]:

```
1
```

In [ ]:

```
1
```

In [ ]:

```
1
```