# Python Programming

# Methods

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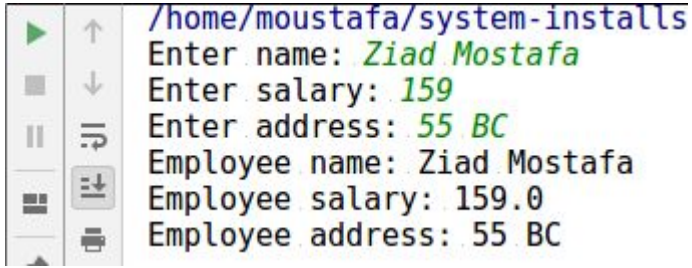
# Functions with Objects

- We can create several functions to work over objects
- Read, Write, Process, etc!

```
3   class Employee:...
7
8   # Function takes object
9   # print using .
10  def print_empl(object):
11      print('Employee name:', object.name)
12      print('Employee salary:', object.salary)
13      print('Employee address:', object.address)
14
15  x = 1
16  mostafa = Employee()
17  mostafa.name = 'mostafa saad'
18  mostafa.salary = 1000
19  mostafa.address = 'Lovely Canada'
20
21  print_empl(mostafa)
22
23  """
24  Employee name: mostafa saad
25  Employee salary: 1000
26  Employee address: Lovely Canada
27  """
```

# Read and Write

```
9     def print_empl(object):
0         print('Employee name:', object.name)
1         print('Employee salary:', object.salary)
2         print('Employee address:', object.address)
3
4     def read_empl():
5         obj = Employee()
6         obj.name = input('Enter name: ')
7         obj.salary = float(input('Enter salary: '))
8         obj.address = input('Enter address: ')
9
0         return obj
1
2     mostafa = read_empl()
3     print_empl(mostafa)
```



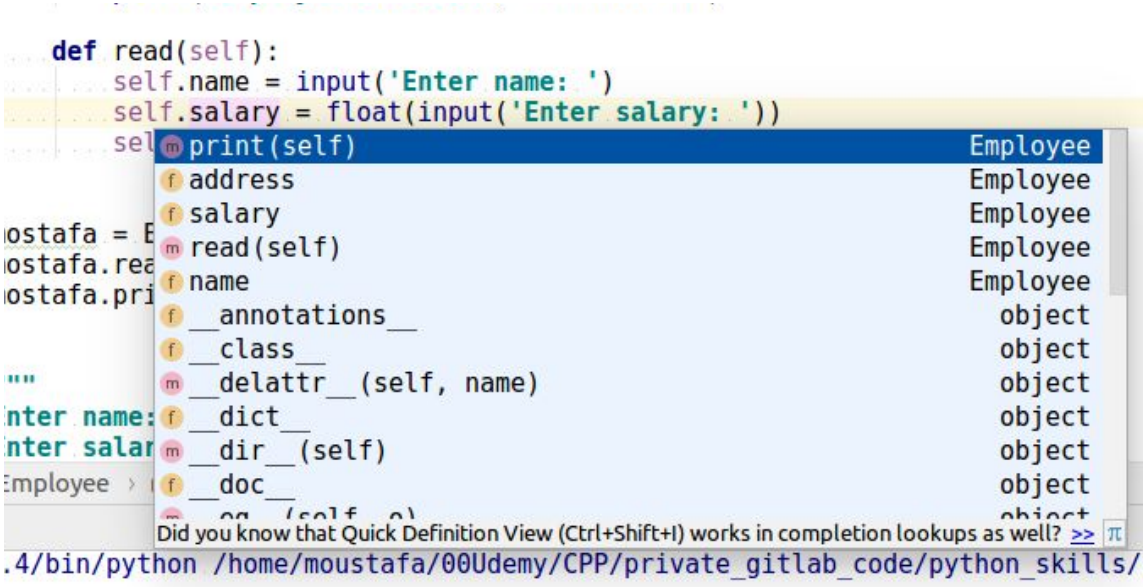
# Methods

- Methods are functions defined **inside** the body of a class.
- The **first parameter** is referring to the object itself
  - Convention to name as **self**
  - Automatically added in a call
- Again using (.) operator we can call the methods

```
3   class Employee:
4       name = None
5       salary = None
6       address = None
7
8       def print(self):
9           print('Employee name:', self.name)
10          print('Employee salary:', self.salary)
11          print('Employee address:', self.address)
12
13      def read(self):
14          self.name = input('Enter name: ')
15          self.salary = float(input('Enter salary: '))
16          self.address = input('Enter address: ')
17
18
19  mostafa = Employee()
20  mostafa.read()
21  mostafa.print()
```

# Ctrl + Space

- In the IDE, after the . press: Ctrl+Space to get menu



# Encapsulation

- Encapsulation is the **grouping** of variables and functions of a specific concept in a single component, named class
  - In C++/Java/C#: the concept is more loaded with **hiding** things from outsiders
  - But Python has another philosophy: trust the other programmers … More later in OOP
- As you see the class now is very convenient
  - All our related variables are inside the class … we called them attributes
  - All our related functions are inside the class … we called them methods

"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."