

Python Test – 2

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Q. Write a documentation in Python which have encapsulation basics, real-life examples, and implementation and submit it on GitHub.

Ans: **Encapsulation** is one of Python's four pillars of Object-Oriented Programming. It is a method in which we can encapsulate or secure certain attributes or methods of an object by making it **“private”**.

It basically refers to the ability of a programmer to bundle an object's attributes or methods into a single class which thereby restricts direct access to it outside the class.

Encapsulation is implemented or used by programmers when they want to prevent accidental modification of the data members or methods of an object.

In Python, encapsulation of a certain attribute or function is performed using the “__” operator (underscore operator). This operator is added in the beginning of the attribute name.

For example, consider an Employee class which has details about an employee's name, ID, position, salary, etc. In this, it is necessary to keep the employee's salary as a private attribute. Hence, we can use encapsulation for the same and define the salary attribute of the Employee class as private using the “__” operator.

Another example could be a Student class having a student's personal and educational details like name, age, gender, aadhar number, university, etc. In this, the student's aadhar number could be a private attribute as it is a piece of very discrete and important information that should not be accessible to everybody.

CODE:

```
class employee:
    def __init__(self, name, age, gender, salary):
        self.name = name
```

```
self.age = age
self.gender = gender
self.__salary = salary

def emp_details(self):
    print("\nEmployee details: ")
    print("Employee name:",self.name)
    print("Employee age:",self.age)
    print("Employee gender:",self.gender)
    print("Employee salary:",self.__salary)

print("Employee 1 details:")
emp1 = employee("Varnika", 20, "F", 15000)
emp1.emp_details()

print("\nEmployee 2 details: ")
name = input("Enter employee name: ")
age = int(input("Enter employee age: "))
gender = input("Enter employee gender: ")
salary = input("Enter employee salary: ")
emp2 = employee(name, age, gender, salary)
emp2.emp_details()
```

OUTPUT:

Employee 1 details:

Employee details:

Employee name: Varnika

Employee age: 20

Employee gender: F

Employee salary: 15000

Employee 2 details:

Enter employee name: Preeti

Enter employee age: 34

Enter employee gender: F

Enter employee salary: 65000

Employee details:

Employee name: Preeti

Employee age: 34

Employee gender: F

Employee salary: 65000