Lab 21

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Date :- 23-10-2023

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CO1: To write, test, and debug simple Python programs

CO2: To implement Python programs with conditional, loops and functions

Task 1:- Creating class,object and calling method of class

Python Code:

```
class Phone:
    def make_call(self):
        print("Make Phone Call")
    def play_game(self):
        print("Play Game")
phone = Phone()
phone.make_call()
phone.play_game()
```

Output:

```
PS D:\Aryan Data\Usefull Data\Semester - 3\Programming With Python\Lab Manual\Lab -21>
ta/Usefull Data/Semester - 3/Programming With Python/Lab Manual/Lab -21/23-10-2023 LAB-
Make Phone Call
Play Game
```

Task 2:- Providing the values to the attributes of a class

Python Code:

```
class Phone :
    def set_color(self,color) :
        self.color = color
    def set_cost(self,cost) :
        self.cost = cost
    def show_color(self) :
        return self.color
    def show_cost(self) :
        return self.cost
    def make_call(self):
        print("Make Phone Call")
    def play_game(self):
        print("Play Game")
phone_1 = Phone()
phone_1.set_color('Titanium Grey')
```

```
phone_1.set_cost('150000')
print(phone_1.show_color())
print(phone_1.show_cost())
phone_1.make_call()
phone_1.play_game()
```

Output:

```
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Titanium Grey
150000
Make Phone Call
Play Game
```

Task 3:- Creating the constructor of a class

Python Code:

```
class Employee :
    def __init__(self , name , age , salary , gender) :
        self.name = name
        self.age = age
        self.salary = salary
        self.gender = gender
    def show_Employee_Detail(self) :
        print(f"Name :- {self.name}\nAge:- {self.age}\nSalary :- {self.salary}\nGender :-
{self.gender}")
employee  = Employee("Elon Musk",53,1,"Male")
employee.show_Employee_Detail()
```

Output:

```
PS D:\Aryan Data\Usefull Data\Semester - 3\Programming With Python\Lab Manual\Lab -21>
ta/Usefull Data/Semester - 3/Programming With Python/Lab Manual/Lab -21/23-10-2023 LAB-
Name :- Elon Musk
Age:- 53
Salary :- 1
Gender :- Male
```

Task 4:- Plot of Sinc Function with Numpy and Matplotlib

Python Code:

```
class Vehicle:
    def __init__(self, milage, cost):
        self.milage = milage
        self.cost = cost
    def show_details(self):
        print(f"Vehicle\nMilage :- {self.milage}\nCost :- {self.cost}")
vehicle = Vehicle(65, 85000)
vehicle.show_details()
class Car(Vehicle):
```

```
    def __init__(self, milage, cost, types, horse_power):
        super().__init__(milage, cost)
        self.types = types
        self.horse_power = horse_power
    def show_car(self):
        super().show_details()
        print(
            f"Number Of Types :- {self.types}\nValue Of Horse Power :- {self.horse_power}")
car = Car(20, 2000000, 4, 200)
car.show_car()
```

Output:

```
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ta/Usefull Data/Semester - 3/Programming With Python/Lab Manual/Lab -21/23-10-2023 LAB-
Vehicle
Milage :- 65
Cost :- 85000
Vehicle
Milage :- 20
Cost :- 2000000
Number Of Types :- 4
Value Of Horse Power :- 200
```

Post Lab

Task 1:- To write a python code for Class and Object

Python Code:

```
class Person:
    def __init__(self, name, age):
        self.name = name
        self.age = age
    def introduce(self):
        print(f"My name is {self.name}, and I am {self.age} years old.")
person1 = Person("Larry Fink", 60)
print(f"Name: {person1.name}")
print(f"Age: {person1.age}")
person1.introduce()
```

Output:

```
PS D:\Aryan Data\Usefull Data\Semester - 3\Programming With Python\Lab Manual\Lab -21>
ta/Usefull Data/Semester - 3/Programming With Python/Lab Manual/Lab -21/23-10-2023 LAB-
Name: Larry Fink
Age: 60
My name is Larry Fink, and I am 60 years old.
```

Task 2:- To write a python code for Class and Object

Python Code:

```
class Animal:
    def __init__(self, name):
        self.name = name
    def speak(self):
        pass
class Dog(Animal):
    def speak(self):
        return f"{self.name} says Woof!"
class Cat(Animal):
    def speak(self):
        return f"{self.name} says Meow!"
dog = Dog("Buddy")
cat = Cat("Whiskers")
print(dog.speak())
print(cat.speak())
```

Output:

```
PS D:\Aryan Data\Usefull Data\Semester - 3\Programming With Python\Lab Manual\Lab -21>
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Buddy says Woof!
Whiskers says Meow!
```

Task 3:- To write a python code for Class and Object

Python Code:

```
class Employee:
    def __init__(self, name, salary):
        self.__name = name
        self._salary = salary
    def get_name(self):
        return self.__name
    def set_name(self, name):
        if len(name) > 0:
            self.__name = name
    def get_salary(self):
        return self._salary
    def set_salary(self, salary):
        if salary >= 0:
            self._salary = salary
employee = Employee("John Doe", 50000)
print("Employee Name:", employee.get_name())
print("Employee Salary:", employee.get_salary())
employee.set_name("Jane Doe")
employee.set_salary(55000)
```

```
print("Updated Employee Name:", employee.get_name())
print("Updated Employee Salary:", employee.get_salary())
```

Output:

```
PS D:\Aryan Data\Usefull Data\Semester - 3\Programming With Python\Lab Manual\Lab -21>
ta/Usefull Data/Semester - 3/Programming With Python/Lab Manual/Lab -21/23-10-2023 LAB-
Employee Name: John Doe
Employee Salary: 50000
Updated Employee Name: Jane Doe
Updated Employee Salary: 55000
```

Task 4:- To write a python code for Class and Object

Python Code:

```
class Animal:
    def speak(self):
        pass
class Dog(Animal):
    def speak(self):
        return "Woof!"
class Cat(Animal):
    def speak(self):
        return "Meow!"
class Bird(Animal):
    def speak(self):
        return "Tweet!"
animals = [Dog(), Cat(), Bird()]
for animal in animals:
    print(animal.speak())
```

Output:

```
PS D:\Aryan Data\Usefull Data\Semester - 3\Programming With Python\Lab Manual\Lab -21>
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Woof!
Meow!
Tweet!
```