Experiment No. 4

Title: Creating functions, classes and objects using python

Aim: To study and create functions, classes and objects using python

Objective: To introduce functions, classes and objects in python

Theory:

A function is a block of code which only runs when it is called.

You can pass data, known as parameters, into a function.

A function can return data as a result.

A class is a user-defined blueprint or prototype from which objects are created. Classes provide

a means of bundling data and functionality together. Creating a new class creates a new type

of object, allowing new instances of that type to be made. Each class instance can have

attributes attached to it for maintaining its state. Class instances can also have methods (defined by their class) for modifying their state.

To understand the need for creating a class let’s consider an example, let’s say you wanted to

track the number of dogs that may have different attributes like breed, age. If a list is used, the

first element could be the dog’s breed while the second element could represent its age. Let’s

suppose there are 100 different dogs, then how would you know which element is supposed to

be which? What if you wanted to add other properties to these dogs? This lacks organization

and it’s the exact need for classes.

Class creates a user-defined data structure, which holds its own data members and member

functions, which can be accessed and used by creating an instance of that class. A class is like

a blueprint for an object.

Code :

class Employee:

def \_\_init\_\_(self,name,ID):

self.name=name

self.ID=ID

def show(self):

print(f"{self.name} is employee whose ID is {self.ID}")

name=input("Enter your name : ")

id=int(input("Enter your ID : "))

e1=Employee(name,id)

e1.show()

print(e1.name)

print(e1.ID)

Result :

Enter your name : Harry

Enter your ID : 786

Harry is employee whose ID is 786

Harry

786

Code :

n=int(input("Enter your number : "))

def factorial(n):

fact=1

for i in range (1,n):

fact \*=i+1

return fact

result=factorial(n)

print("The factorial of ",n," is ",result)

Result:

Enter your number : 8

The factorial of 8 is 40320

Conclusion:

Classes and object and functions have been implemented.