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CLASS ID :- 41

PYTHON LAB ASSIGNMENT-2

Objectives

The main objective of these questions is using classes and dictionaries.here we use inheritances like
1)single inheritance
2)Multiple inheritance
3)Dictionaries
4)Classes
5)Objects

Features

The main features are being used in this task are
1) using dictionaries for getting multiple entry results
2) Classes for setting properties and logics
3) We will be setting the variables here

Configuration

Software used: Python 3.4
IDE: PyCharm

IMPLEMENTATION:-

1) Consider a shop UMKC with dictionary of all book items with their prices. Write a program to find the books from the dictionary in the range given by user.

```
bookdict = dict([("python",50),("web development",60),("Design and
analysis of algorithms",55),("Data base management
systems",65),("android development",68),("Deep Learning",70)])# here we
use dictionary

print("Now let us have glance at all the list of books in the UMKC book
store:") # printing the list of books

for k,v in bookdict.items(): # creating class

   print(k,v)

   print("Now enter the range of values to find the books in that range")
# entering the range of values

   start = int(input("enter the starting value:")) # here we will enter
the starting values

   last = int(input("enter the ending value")) # here we will enter the
ending values

   for name,val in bookdict.items():

   if val >= start and val <= last:

      print("Books available in the given cost are",name) # here the
available books and cost of that specific book  will be displayed.
```

2)With any given number n, In any mobile , there is contact list. Create a list of contacts and then prompt the user to do the
following:
a)Display contact by name
b)Display contact by number
c)Edit contact by name
d)Exit
Based on the above scenario, write a single program to perform the above the operations.Each time an operation is performed on the list, the contact list should be displayed

---

```
contact_list = [{"name":'bhargavi', "number":99897,
"email":"bhs@gmail.com"},{"name":"pbs", "number":767657657,
"email":"pbs@gmail.com"},{"name":"ram","number":8745126,"email
":"ram@gmail.com"}]

# Asking input from user to enter name to get contact
nm = input("Enter name to get contact: ")

# Iterating over contact_list
for i in contact_list:
# if condition for checking the name entered by the user is in the
dictionary or not
    if nm in i.values():
# if true printing the contact
        print(i)

# Asking input from the user to enter number to get contact
num = int(input("Enter number to get contact: "))
# Iterating over contact_list
for j in contact_list:
# If condition for checking whether the entered number is in
dictinary or not
    if num in j.values():
# Prnting the contact if condition is true
        print(j)

# Asking user to enter the name
nme = input("Enter name to get contact and edit number: ")
# Iterating over the contact_list
for k in contact_list:
# If the entered name in dictionary
    if nme in k.values():
# Prnting the contact
        print(k)
# Asking user if he want to edit the number
        newnum = int(input("Enter number to edit: "))
# Editing the number for the particular user
        k["number"] = newnum
# Printing the contact
        print(k)
```

3.Write a python program to create any one of the following management systems. You can also pick one of your own.
a.Library Management System (should have classes for Person, Student, Librarian, Book etc.)
b.Airline Booking Reservation System (classes for Flight,Person,Employee,Passenger etc.)
c.Hotel Reservation System (classes for Room,Occupants,Employee etc.)
d.Student Enrollment System (classes for Student,System,Grades etc.)
e.Expense Tracker System (classes for Expense, Transaction Category etc.)

```
#Library Management System
class Library():       # CLASS 1
    def __init__(self):      #_init_ constructor
        pass

    def lib(self):
        libName = "MNLC_UMKC"    # Private data member
        print("Library name is",libName)

class Membership():       #CLASS 2
    fee="$200"
    def __init__(self):          #_init_ constructor
       print("Membership fee: $200")

class MemFee(Membership):       #CLASS 3 inheriting the class 2

    def __init__(self):      #_init_ constructor
        Membership.__init__(self)

    def mFee(self,f):
        self.isPaid=f
        if (self.f=="true"):
            print(self.fee," Membership fee has been paid")
        else:
            print(self.fee, " Membership fee has not been paid")
class SDetails(): #CLASS 4
    def __init__(self): #_init_ constructor
        pass

    def studentInfo(self, sName,sID):
        self.sName = sName
        self.sID = sID
        print(self.sName," with student ID is",self.sID)

class BDetails():    #CLASS 5
    def __init__(self): #_init_ constructor
        pass

    def book(self,bName,bID,bAuthor):
```

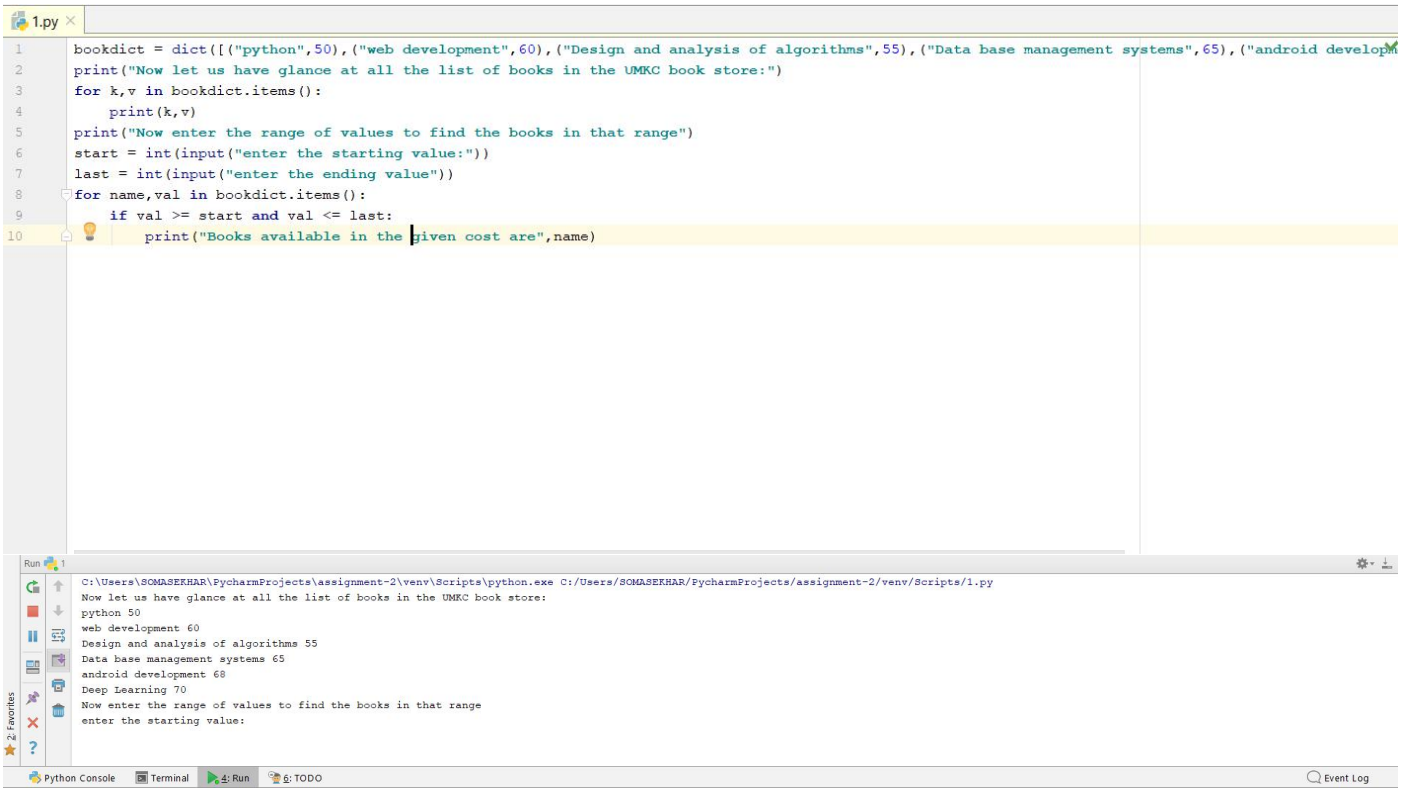
```
self.bName=bName
        self.bID=bID
        self.bAuthor=bAuthor
        print("Book "+self.bName+" with ID: "+self.bID+"/ Author: "+self.bAutho

class SBDetails(SDetails,BDetails):    # multiple inheritance (#CLASS 6)
    def __init__(self):      #_init_ constructor
        super().__init__()  # use of super keyword

    def bookDates(self,borrowDate,returnDate):
        self.borrowDate = borrowDate
        self.returnDate = returnDate
        print("The book was borrowed on "+self.borrowDate+" and has to be return
on "+self.returnDate)

print("------------------------------------------------------------------------
---------")

#instances of classes
l1=Library()
l1.lib()
s1=SDetails()
s1.studentInfo("bhargavi","41")
fee1=MemFee()
fee1.mFee("true")
b1=SBDetails()
b1.book("Python","20000","Rashmi")
b1.bookDates("09-20-2017","09-29-2017")

l2=Library()
l2.lib()
s2=SDetails()
s2.studentInfo("Sindhu",18)
fee2=MemFee()
fee2.mFee("false")
b2=SBDetails()
b2.book("Deep Learning","20002","VijayaKumari")
b2.bookDates("07-15-2018","07-25-2018")
```

4.Using Numpy create random vector of size 15 having only Integers in the range 0 -20.
Write a program to find the most frequent item/value in the vector list.

```
import numpy as np  # here we will import the numpy package
x = np.random.randint(0, 20, 15)# here we are initialising the x
value
print("Given List:") #here we will be having the most recently used
numbers list which are random
print(x) # the initialised value of x will be printed, the value
has the random values
print("Most frequent value in the List:") # the line below we will
be getting the most frequent values
print(np.bincount(x).argmax())  # here we used the inbuilt
functions which gives the lowest frequency first and the highest
frequenvcy next
```

INPUT/OUTPUT:-

1)

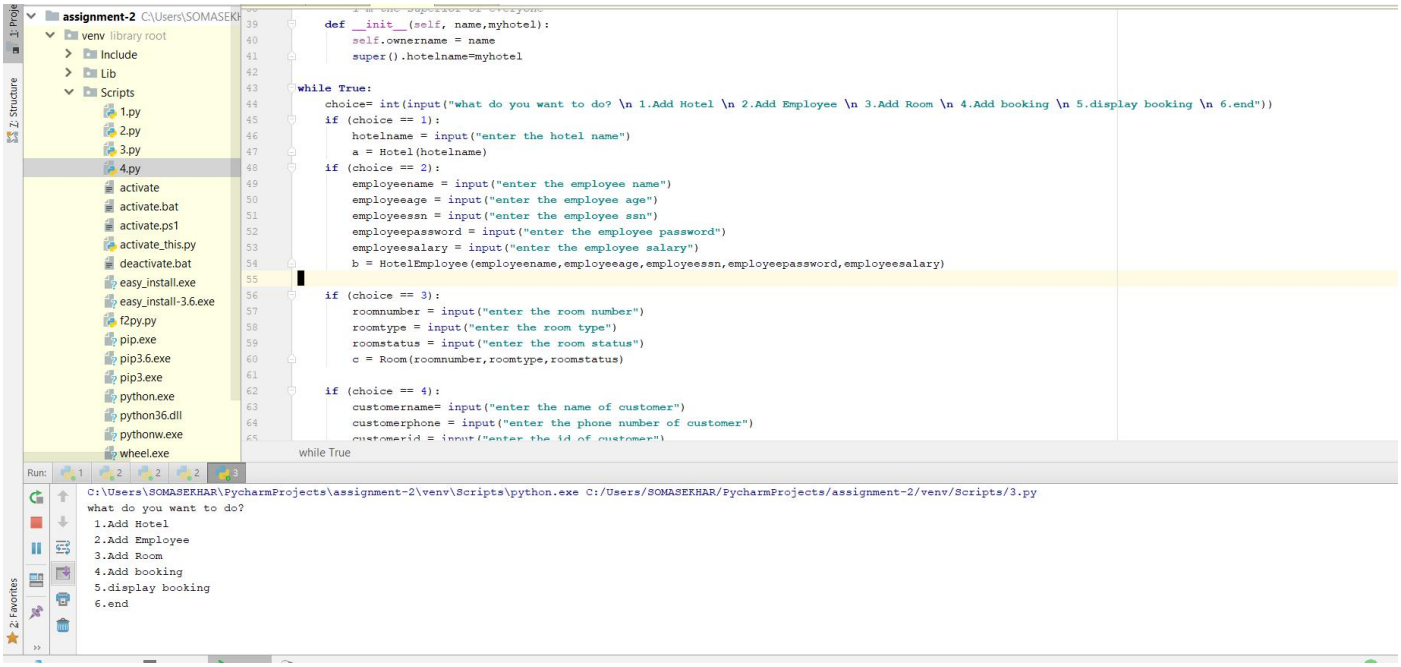


2)

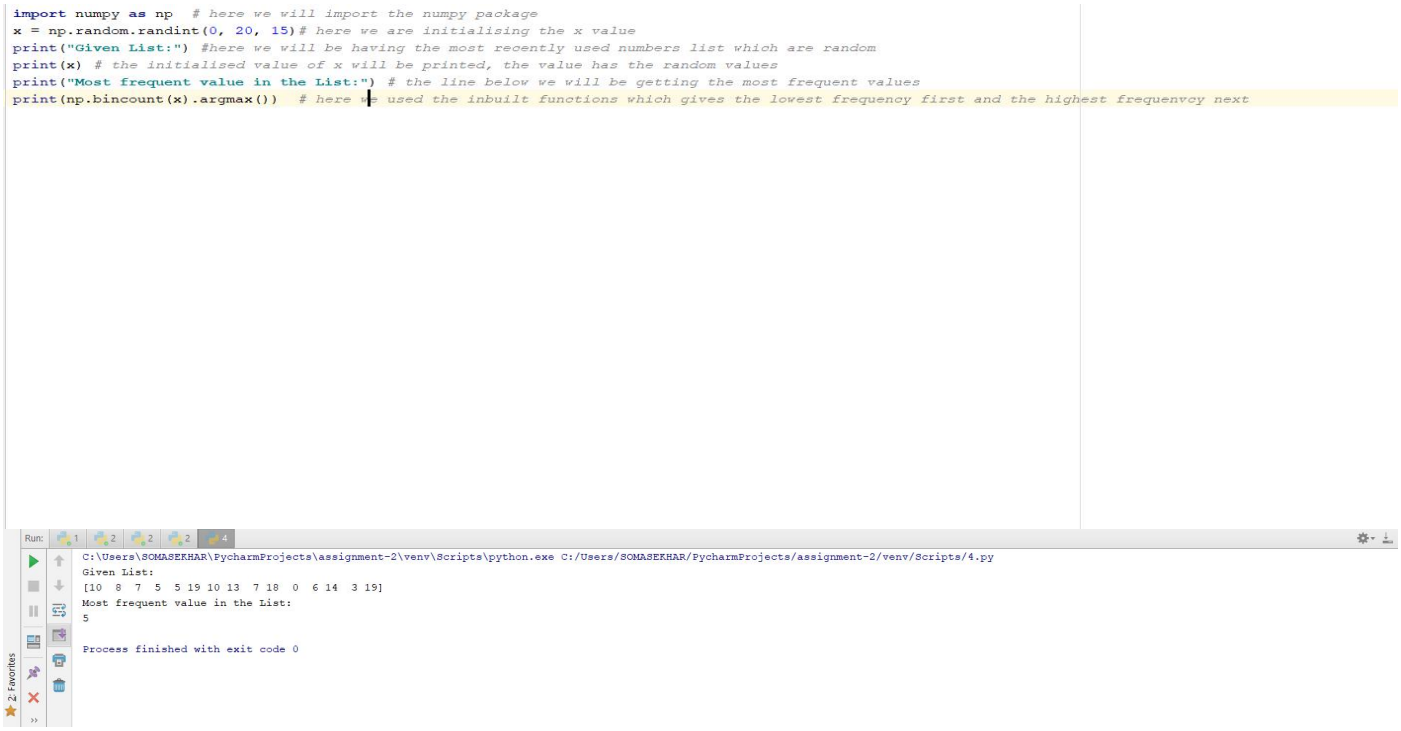
```
n = int(input("Please enter number of students:"))

student_data = ['stud_name', 'stud_rollno', 'mark1', 'mark2','mark3','total', 'average']
for i in range(0,n):

    stud_name=input('Enter the name of student: ')
    print ("stud_name")


    stud_rollno=input('Enter the roll number of student: ')
    print ('stud_rollno')


    mark1=input('Enter the marks in subject 1: ')
    print ('mark1')

    mark2=input('Enter the marks in subject 2: ')
    print ('mark2')

    mark3=input('Enter the marks in subject 3: ')
    print ('mark3')

    total=(int(mark1)+int(mark2)+int(mark3))
    print("Total is: ", total)

    a=int(total/3)
    print ("Average is :", int(a))

dict = {'Name': stud_name, 'Rollno':stud_rollno, 'Mark1':mark1, 'Mark2':mark2,'Mark3':mark3, 'Total':total, 'Average':average}
print ("dict['Name']: ", dict['Name'])
print ("dict['Rollno']: ", dict['Rollno'])
print ("dict['Mark1']: ", dict['Mark1'])
print ("dict['Mark2']: ", dict['Mark2'])

print ("dict['Mark3']: ", dict['Mark3'])
print ("dict['Total']: ", dict['Total'])
print ("dict['Average']: ", dict['a'])
```

```
C:\Users\SOMASEKHAR\PycharmProjects\assignment-2\venv\Scripts\python.exe C:/Users/SOMASEKHAR/PycharmProjects/assignment-2/venv/Scripts/2.py
Please enter number of students:2
Enter the name of student: bhargavi
stud_name
Enter the roll number of student: 41
stud_rollno
Enter the marks in subject 1: 100
mark1
Enter the marks in subject 2: 200
mark2
Enter the marks in subject 3: 400
mark3
Total is:  700
Average is : 233
Enter the name of student: sandhya
stud_name
Enter the roll number of student: 24
stud_rollno
Enter the marks in subject 1: 500
mark1
Enter the marks in subject 2: 600
mark2
Enter the marks in subject 3: 28
Traceback (most recent call last):
mark3
Total is:  1128
```

3)



4)



DEPLOYEMENT:-

Here in the first question we will be using the dictionaries to show the books name and its prices according to the given range. In second question we have a contact list and the list of members in list will be appeared.here we used list function which gives list of elements.
In third question Displaying contact by name Displaying contact by number Edit contact by name and then Exit. In third we Write a python program to create any one of the following management systems. You can also pick one of your own. Library Management System

(should have classes for Person, Student, Librarian, Book etc.) Airline Booking Reservation System (classes for Flight,Person,Employee,Passenger etc.) .Hotel Reservation System (classes for Room,Occupants,Employee etc.) Student Enrollment System (classes for Student,System,Grades etc.) Expense Tracker System (classes for Expense, Transaction Category etc.) in fourth question we genarate random numbers which are being recently used using RANDINIT.

LIMITATIONS:-

This utilization has a couple of requirements on account of program scope. We have kept a couple of areas to static based recuperation, making it not achievable for new course of action of characteristics. If we perform dynamic based, by then we can perform exercises all the all the more capably.

REFERENCES:-

Stackoverflow.com
Geekforgeeks.com