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Class ID-23

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Lab Assignment-2

Objective:

The purpose of this assignment is

- To create UMKC books list and print books between price range
- To display a contact list with edit and display options
- To use classes in library management system
- To display a highest frequency number from random numbers.

Features:

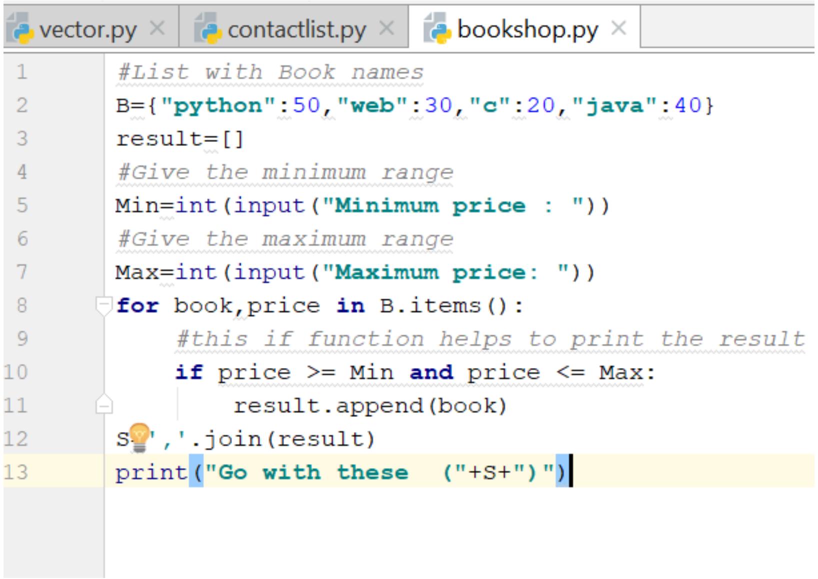
- In bookshop with dictionary order it takes the minimum and maximum prices range and display in between ranges.
- Initially takes the contact details in a list and uses the given options to display and edit contact and numbers.
- Using numpy display a highest frequency number from random numbers.

Configuration:

Pycharm
Python: 2.7.13

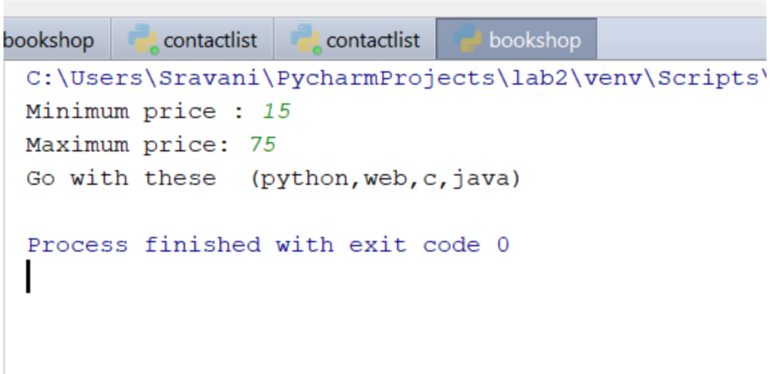
Output Screens

Question1:



```
#List with Book names
B={"python":50,"web":30,"c":20,"java":40}
result=[]
#Give the minimum range
Min=int(input("Minimum price : "))
#Give the maximum range
Max=int(input("Maximum price: "))
for book,price in B.items():
    #this if function helps to print the result
    if price >= Min and price <= Max:
        result.append(book)
S=','.join(result)
print("Go with these  ("+S+")")
```

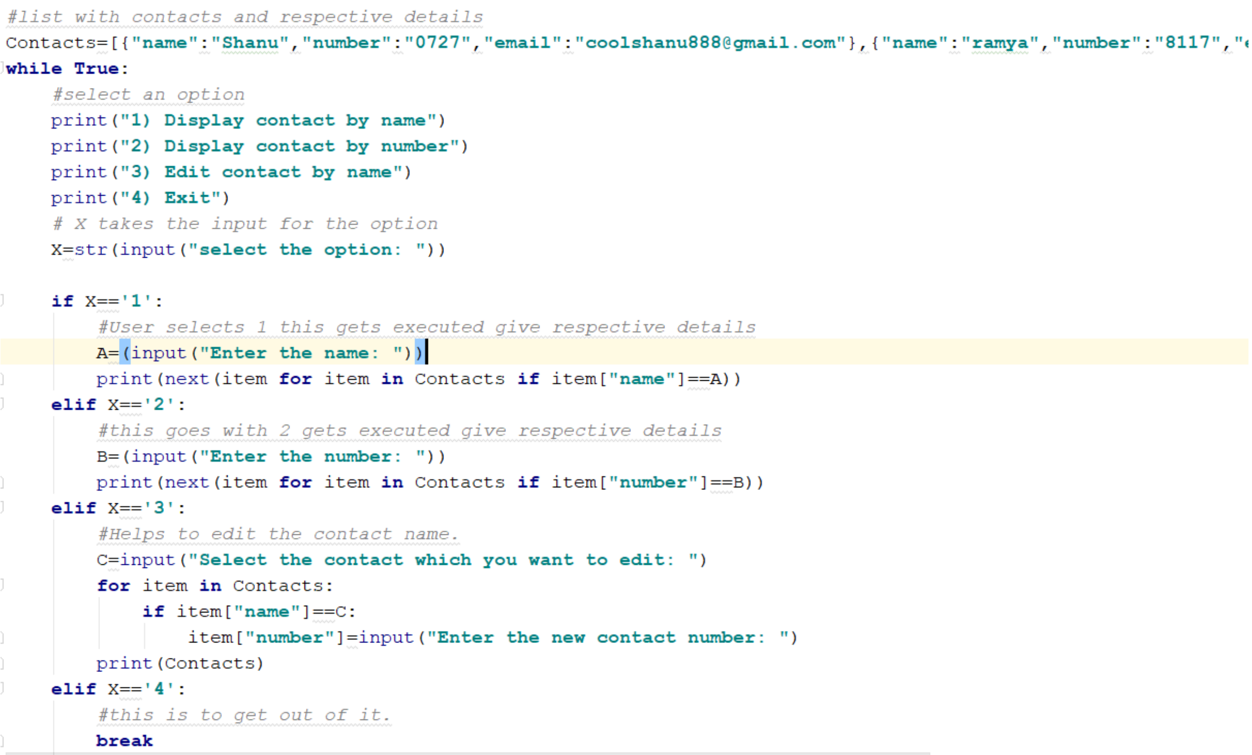
Output:



```
C:\Users\Sravani\PycharmProjects\lab2\venv\Scripts\
Minimum price : 15
Maximum price: 75
Go with these  (python,web,c,java)

Process finished with exit code 0
```

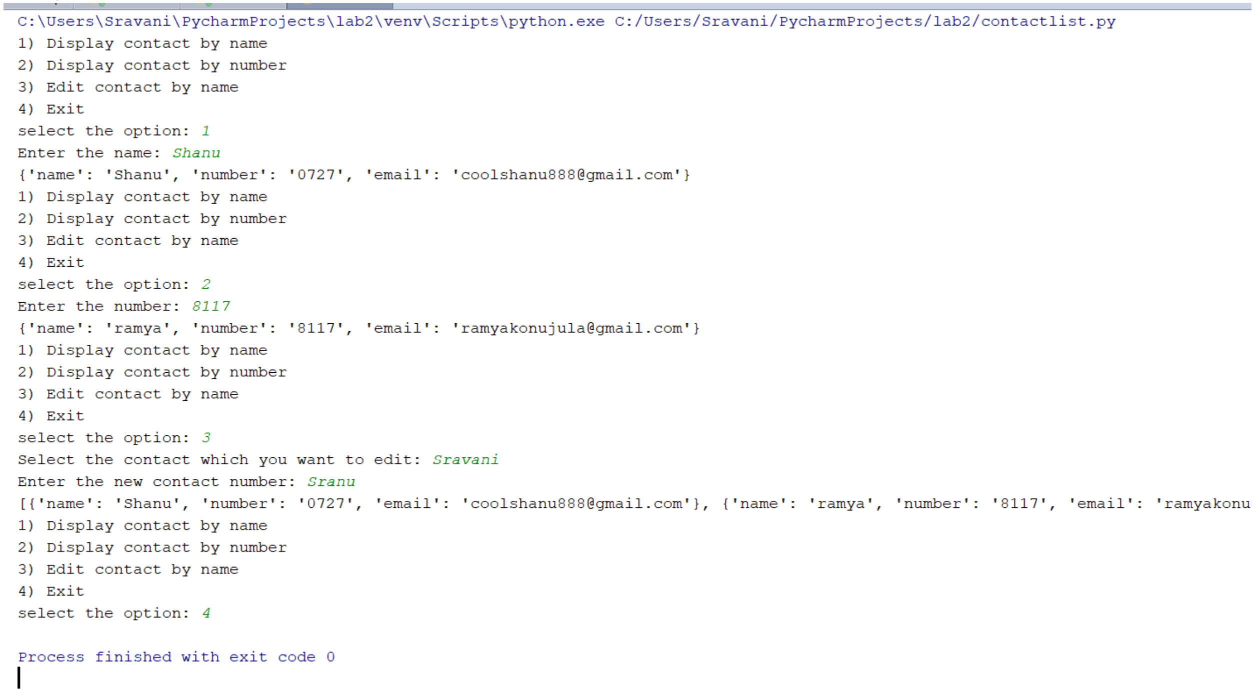
Question2:

Source Code:



```
#list with contacts and respective details
Contacts=[{"name":"Shanu","number":"0727","email":"coolshanu888@gmail.com"},{"name":"ramya","number":"8117","
while True:
    #select an option
    print("1) Display contact by name")
    print("2) Display contact by number")
    print("3) Edit contact by name")
    print("4) Exit")
    # X takes the input for the option
    X=str(input("select the option: "))

    if X=='1':
        #User selects 1 this gets executed give respective details
        A=(input("Enter the name: "))
        print(next(item for item in Contacts if item["name"]==A))
    elif X=='2':
        #this goes with 2 gets executed give respective details
        B=(input("Enter the number: "))
        print(next(item for item in Contacts if item["number"]==B))
    elif X=='3':
        #Helps to edit the contact name.
        C=input("Select the contact which you want to edit: ")
        for item in Contacts:
            if item["name"]==C:
                item["number"]=input("Enter the new contact number: ")
        print(Contacts)
    elif X=='4':
        #this is to get out of it.
        break
```

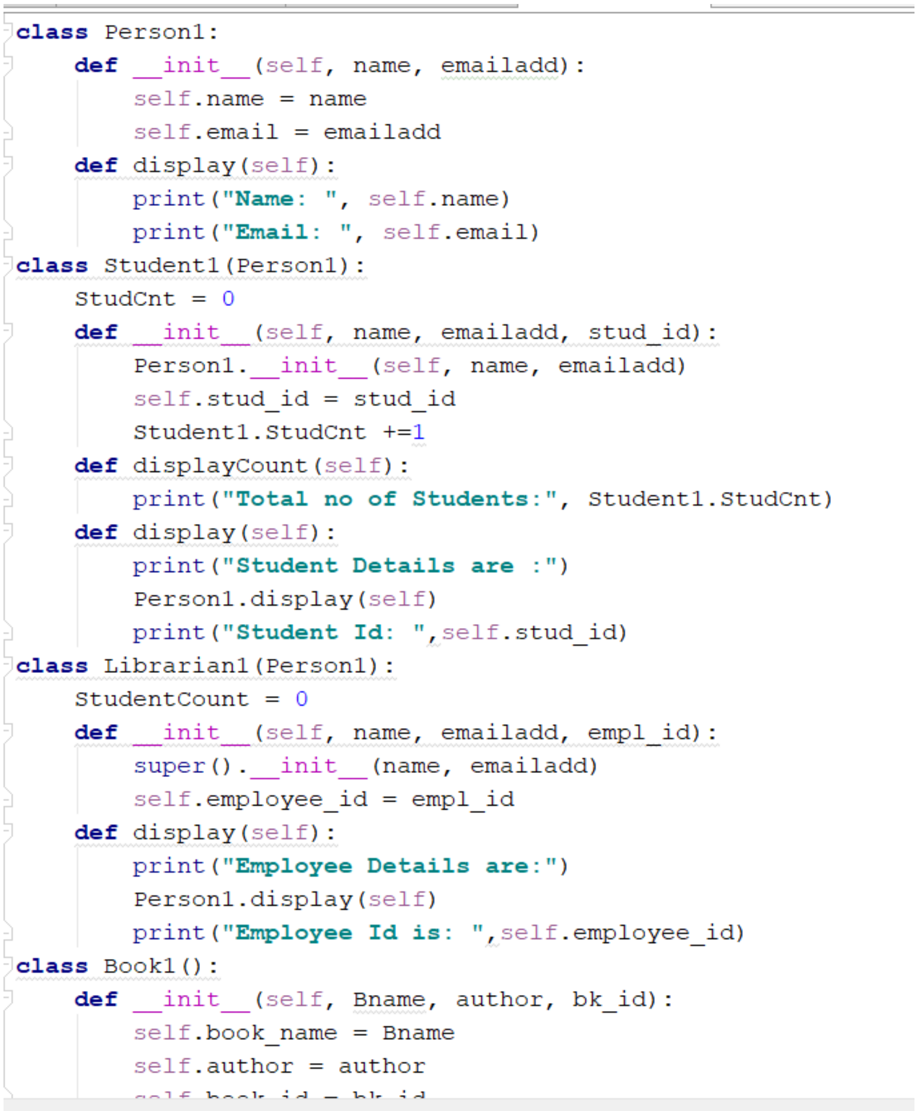
Output Screen:



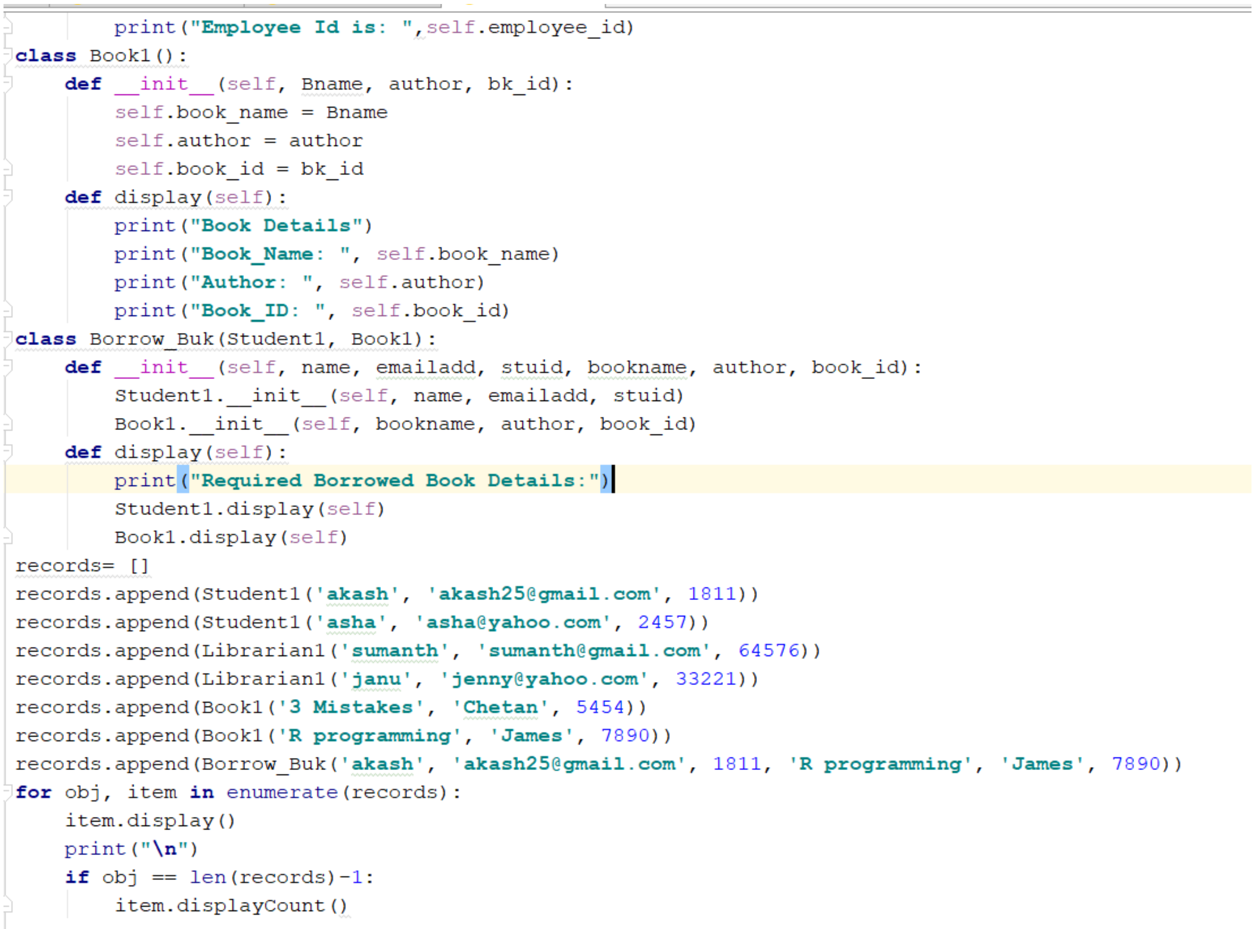
```
C:\Users\Sravani\PycharmProjects\lab2\venv\Scripts\python.exe C:/Users/Sravani/PycharmProjects/lab2/contactlist.py
1) Display contact by name
2) Display contact by number
3) Edit contact by name
4) Exit
select the option: 1
Enter the name: Shanu
{'name': 'Shanu', 'number': '0727', 'email': 'coolshanu888@gmail.com'}
1) Display contact by name
2) Display contact by number
3) Edit contact by name
4) Exit
select the option: 2
Enter the number: 8117
{'name': 'ramya', 'number': '8117', 'email': 'ramyakonujula@gmail.com'}
1) Display contact by name
2) Display contact by number
3) Edit contact by name
4) Exit
select the option: 3
Select the contact which you want to edit: Sravani
Enter the new contact number: Sranu
[{'name': 'Shanu', 'number': '0727', 'email': 'coolshanu888@gmail.com'}, {'name': 'ramya', 'number': '8117', 'email': 'ramyakonu
1) Display contact by name
2) Display contact by number
3) Edit contact by name
4) Exit
select the option: 4

Process finished with exit code 0
```

Question3:

Source Code:

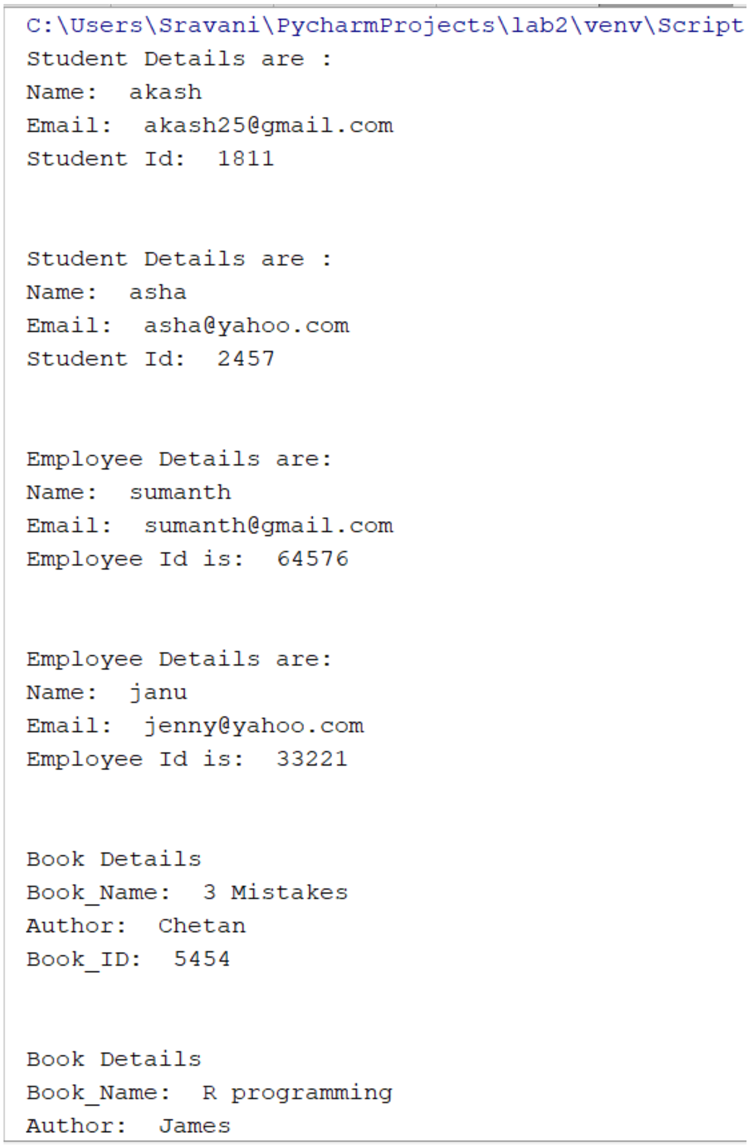


```
class Person1:
    def __init__(self, name, emailadd):
        self.name = name
        self.email = emailadd
    def display(self):
        print("Name: ", self.name)
        print("Email: ", self.email)
class Student1(Person1):
    StudCnt = 0
    def __init__(self, name, emailadd, stud_id):
        Person1.__init__(self, name, emailadd)
        self.stud_id = stud_id
        Student1.StudCnt +=1
    def displayCount(self):
        print("Total no of Students:", Student1.StudCnt)
    def display(self):
        print("Student Details are :")
        Person1.display(self)
        print("Student Id: ",self.stud_id)
class Librarian1(Person1):
    StudentCount = 0
    def __init__(self, name, emailadd, empl_id):
        super().__init__(name, emailadd)
        self.employee_id = empl_id
    def display(self):
        print("Employee Details are:")
        Person1.display(self)
        print("Employee Id is: ",self.employee_id)
class Book1():
    def __init__(self, Bname, author, bk_id):
        self.book_name = Bname
        self.author = author
        self.book_id = bk_id
```



```python
        print("Employee Id is: ",self.employee_id)
class Book1():
    def __init__(self, Bname, author, bk_id):
        self.book_name = Bname
        self.author = author
        self.book_id = bk_id
    def display(self):
        print("Book Details")
        print("Book_Name: ", self.book_name)
        print("Author: ", self.author)
        print("Book_ID: ", self.book_id)
class Borrow_Buk(Student1, Book1):
    def __init__(self, name, emailadd, stuid, bookname, author, book_id):
        Student1.__init__(self, name, emailadd, stuid)
        Book1.__init__(self, bookname, author, book_id)
    def display(self):
        print("Required Borrowed Book Details:")
        Student1.display(self)
        Book1.display(self)
records= []
records.append(Student1('akash', 'akash25@gmail.com', 1811))
records.append(Student1('asha', 'asha@yahoo.com', 2457))
records.append(Librarian1('sumanth', 'sumanth@gmail.com', 64576))
records.append(Librarian1('janu', 'jenny@yahoo.com', 33221))
records.append(Book1('3 Mistakes', 'Chetan', 5454))
records.append(Book1('R programming', 'James', 7890))
records.append(Borrow_Buk('akash', 'akash25@gmail.com', 1811, 'R programming', 'James', 7890))
for obj, item in enumerate(records):
    item.display()
    print("\n")
    if obj == len(records)-1:
        item.displayCount()
```

Output Screen:

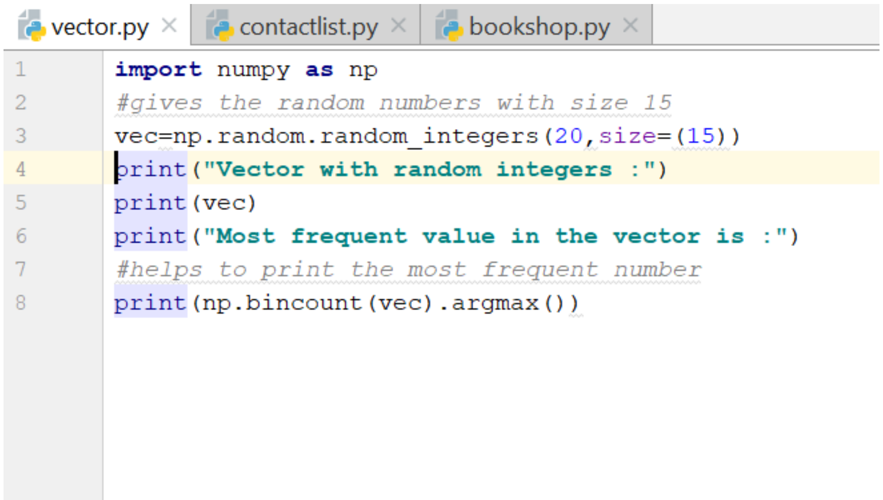


```
C:\Users\Sravani\PycharmProjects\lab2\venv\Script
Student Details are :
Name:  akash
Email:  akash25@gmail.com
Student Id:  1811


Student Details are :
Name:  asha
Email:  asha@yahoo.com
Student Id:  2457


Employee Details are:
Name:  sumanth
Email:  sumanth@gmail.com
Employee Id is:  64576


Employee Details are:
Name:  janu
Email:  jenny@yahoo.com
Employee Id is:  33221


Book Details
Book_Name:  3 Mistakes
Author:  Chetan
Book_ID:  5454


Book Details
Book_Name:  R programming
Author:  James
```

```
Book Details
Book_Name:  3 Mistakes
Author:  Chetan
Book_ID:  5454


Book Details
Book_Name:  R programming
Author:  James
Book_ID:  7890


Required Borrowed Book Details:
Student Details are :
Name:  akash
Email:  akash25@gmail.com
Student Id:  1811
Book Details
Book_Name:  R programming
Author:  James
Book_ID:  7890


Total no of Students: 3
```

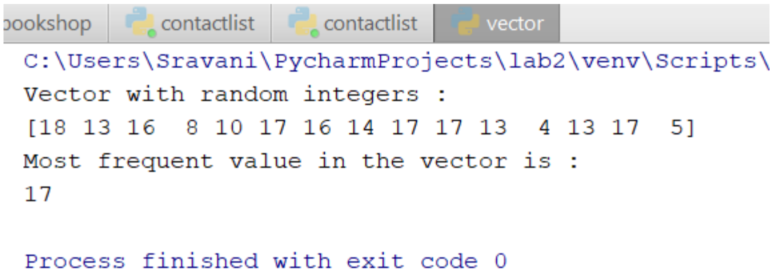
Question4:

Source Code:



```python
import numpy as np
#gives the random numbers with size 15
vec=np.random.random_integers(20,size=(15))
print("Vector with random integers :")
print(vec)
print("Most frequent value in the vector is :")
#helps to print the most frequent number
print(np.bincount(vec).argmax())
```

Output Screen:



```
C:\Users\Sravani\PycharmProjects\lab2\venv\Scripts\
Vector with random integers :
[18 13 16  8 10 17 16 14 17 17 13  4 13 17  5]
Most frequent value in the vector is :
17

Process finished with exit code 0
```

Code Snippet1

```
#List with Book names
B={"python":50,"web":30,"c":20,"java":40}
result=[]
#Give the minimum range
Min=int(input("Minimum price : "))
#Give the maximum range
Max=int(input("Maximum price: "))
for book,price in B.items():
    #this if function helps to print the result
    if price >= Min and price <= Max:
        result.append(book)
S=','.join(result)
print("Go with these  ("+S+")")
```

Code Snippet2

```
#list with contacts and respective details
Contacts=[{"name":"Shanu","number":"0727","email":"coolshanu888@gmail.com"},{"name":"ramya","number":"8117","email":"ramyakonujula@gmail.com"},{"name":"Sravani","number":"8111","email":"sravanikonujula@gmail.com"}]
while True:
    #select an option
    print("1) Display contact by name")
    print("2) Display contact by number")
    print("3) Edit contact by name")
    print("4) Exit")
    # X takes the input for the option
    X=str(input("select the option: "))

    if X=='1':
        #User selects 1 this gets executed give respective details
        A=(input("Enter the name: "))
        print(next(item for item in Contacts if item["name"]==A))
    elif X=='2':
        #this goes with 2 gets executed give respective details
        B=(input("Enter the number: "))
        print(next(item for item in Contacts if item["number"]==B))
    elif X=='3':
        #Helps to edit the contact name.
        C=input("Select the contact which you want to edit: ")
        for item in Contacts:
            if item["name"]==C:
                item["number"]=input("Enter the new contact number: ")
        print(Contacts)
    elif X=='4':
        #this is to get out of it.
        break
```

Code Snippet3:

```
class Person1:
    def __init__(self, name, emailadd):
        self.name = name
        self.email = emailadd
    def display(self):
        print("Name: ", self.name)
        print("Email: ", self.email)
class Student1(Person1):
    StudCnt = 0
    def __init__(self, name, emailadd, stud_id):
        Person1.__init__(self, name, emailadd)
        self.stud_id = stud_id
        Student1.StudCnt +=1
    def displayCount(self):
        print("Total no of Students:", Student1.StudCnt)
    def display(self):
        print("Student Details are :")
        Person1.display(self)
        print("Student Id: ",self.stud_id)
class Librarian1(Person1):
    StudentCount = 0
    def __init__(self, name, emailadd, empl_id):
        super().__init__(name, emailadd)
        self.employee_id = empl_id
    def display(self):
        print("Employee Details are:")
        Person1.display(self)
        print("Employee Id is: ",self.employee_id)
class Book1():
    def __init__(self, Bname, author, bk_id):
        self.book_name = Bname
        self.author = author
        self.book_id = bk_id
    def display(self):
        print("Book Details")
        print("Book_Name: ", self.book_name)
        print("Author: ", self.author)
        print("Book_ID: ", self.book_id)
class Borrow_Buk(Student1, Book1):
    def __init__(self, name, emailadd, stuid, bookname, author, book_id):
        Student1.__init__(self, name, emailadd, stuid)
        Book1.__init__(self, bookname, author, book_id)
    def display(self):
        print("Required Borrowed Book Details:")
        Student1.display(self)
        Book1.display(self)
records= []
records.append(Student1('akash', 'akash25@gmail.com', 1811))
records.append(Student1('asha', 'asha@yahoo.com', 2457))
records.append(Librarian1('sumanth', 'sumanth@gmail.com', 64576))
records.append(Librarian1('janu', 'jenny@yahoo.com', 33221))
records.append(Book1('3 Mistakes', 'Chetan', 5454))
records.append(Book1('R programming', 'James', 7890))
records.append(Borrow_Buk('akash', 'akash25@gmail.com', 1811, 'R programming',
'James', 7890))
for obj, item in enumerate(records):
    item.display()
    print("\n")
    if obj == len(records)-1:
        item.displayCount()
```

Code Snippet4:

```
import numpy as np
#gives the random numbers with size 15
vec=np.random.random_integers(20,size=(15))
print("Vector with random integers :")
print(vec)
print("Most frequent value in the vector is :")
#helps to print the most frequent number
print(np.bincount(vec).argmax())
```

Deployment:

Code is written in python and we used pycharm to run this and printed result in the python console.

Limitations:

There are no limitations for the executed code snippets.