Lab sheet - 7

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Question1. Write a program for Fruit Inventory Management.

1. Create a dictionary fruits with fruit name as key and quantity available as values. There are 20 apples, 50 bananas, 100 oranges. Then, print outputs for the following queries.

In [1]:
```
fruits= {'apples': 20, 'bananas': 50, 'oranges': 100}
print(fruits)
```

```
{'apples': 20, 'bananas': 50, 'oranges': 100}
```

2. Show the entire dictionary fruits (Print output as apples -> 20, bananas -> 50, etc)

In [2]:
```
for x,y in fruits.items():
    print(x,'->',y)
```

```
apples -> 20
bananas -> 50
oranges -> 100
```

3. How many bananas are there?

In [3]:
```
print(fruits.get('bananas'))
```

```
50
```

4. How many items in the dictionary?

In [4]:
```
print(len(fruits))
```

```
3
```

5. Does graphs available in the dictionary?

In [5]:
```
if 'graphs' in fruits:
    print("Graphs is available in the dictionary")
else:
    print("Graphs is not available in the dictionary")
```

```
Graphs is not available in the dictionary
```

6. Does pears exists in the dictionary?. If so, return its quantity, otherwise, add 10 pears to
dictionary.

In [6]:
```
if 'pears' in fruits:
    print('Pears exists in the dictionary')
    print(fruits.get('pears'))
else:
    fruits['pears']=10
    print(fruits)
```

```
{'apples': 20, 'bananas': 50, 'oranges': 100, 'pears': 10}
```

7. Show all fruit names in ascending order (Iterate using for loop)

In [7]:
```
for a,b in sorted(fruits.items()):
    print(a)
```

```
apples
bananas
oranges
pears
```

8. Show all fruits in descending order of quantities

In [8]:
```
for b in sorted(fruits.values(),reverse=True):
    print(b)
```

```
100
50
20
10
```

9. Remove pears from the dictionary.

In [9]:
```
del fruits['pears']
print(fruits)
```

```
{'apples': 20, 'bananas': 50, 'oranges': 100}
```

10. Develop a function show() that displays fruit name and quantity (Use .format() for pretty
printing)

In [10]:
```
def show():
    print(f'{fruits}')
show()
```

```
{'apples': 20, 'bananas': 50, 'oranges': 100}
```

11. Develop a function add_fruit(name, quantity) that receives fruit name and quantity as
input and increases the quantity of the fruit. Then, display the current inventory by calling
show().

In [11]:
```
def add_fruits(fruits,name,quantity):
    fruits[name]=fruits.get(name,0)+quantity
add_fruits(fruits,'apples',40)
show()
```

```
{'apples': 60, 'bananas': 50, 'oranges': 100}
```

12. Now, add 40 apples to inventory by calling add_fruit(name, quantity)

In [12]:
```
def add_fruits(fruits,name,quantity):
    fruits[name]=fruits.get(name,0)+quantity
add_fruits(fruits,'apples',40)
show()
```

```
{'apples': 100, 'bananas': 50, 'oranges': 100}
```

13. Now, add 100 bananas to inventory, by calling add_fruit(name, quantity)

In [13]:
```
add_fruits(fruits,'bananas',100)
print(fruits)
```

```
{'apples': 100, 'bananas': 150, 'oranges': 100}
```

14. Now, show the current inventory, by calling show()

In [14]:
```
show()
```

```
{'apples': 100, 'bananas': 150, 'oranges': 100}
```

15. Write the inventory fruits onto a file. (Use Pickle for file writing and reading)
16. Now, open Pickle file and display the inventory.

In [15]:
```
#pickle for writing
import pickle
fruits={'apples':60,'bananas':150,'oranges':100}
file=open("mypicklefile","wb")
pickle.dump(fruits,file)
file.close()

#pickle for reading
import pickle
frut_prc=open("mypicklefile","rb")
fruits=pickle.load(frut_prc)
print(fruits)
```

```
{'apples': 60, 'bananas': 150, 'oranges': 100}
```

Question2. Write a program for Telephone Directory Management
1. Create an empty dictionary called customers, where name is a key and contacts is a list
of contacts such as phoneno and email ID for each customer.

2. Ask user to enter name and his contacts for N customers. Add them to dictionary
customers. Stop reading when user types “done”.

In [78]:
```
customers={}
n=int(input("No. of customers:"))
for i in range(n):
    a=input("Name: ")
    b=int(input("Phone No.: "))
    c=input("E-mail ID: ")
    d=input("Type <done> to exit: ")
    if d=='done':
        break
    key=a
    contacts=[b,c]
    customers[key]=contacts
    print('\n',customers)
```

```
No. of customers:3
Name: Hari
Phone No.: 98876543
E-mail ID: hari@gmail.com
Type <done> to exit: no

 {'Hari': [98876543, 'hari@gmail.com']}
Name: Venu
Phone No.: 009876543
E-mail ID: venu@gmail.com
Type <done> to exit: no

 {'Hari': [98876543, 'hari@gmail.com'], 'Venu': [9876543, 'venu@gmail.com']}
Name: Murali
Phone No.: 89765432
E-mail ID: murali@gmail.com
Type <done> to exit: done
```

3. Show the contacts for customer “rex”. If not exists, print message “Contacts not exists..”

In [79]:
```
if 'rex' in customers:
    print(customers.get('rex'))
else:
    print('Contact not exists')
```

```
Contact not exists
```

4. Add a new customer with name “rex”, phone number 9942002764 and email id rajkumar@bhc.edu (mailto:rajkumar@bhc.edu)

In [80]:
```
customers.update({"rex":[9942002764,"rajkumar@bhc.edu"]})
print(customers)
```

```
{'Hari': [98876543, 'hari@gmail.com'], 'Venu': [9876543, 'venu@gmail.com'], 're
x': [9942002764, 'rajkumar@bhc.edu']}
```

5. Show all customers both name and contacts. (Use items() method, unpack it and print inside for loop)

In [81]:
```
for a,b in customers.items():
    print('Name:',a,'\t',"Contact:",b)
```

```
Name: Hari       Contact: [98876543, 'hari@gmail.com']
Name: Venu       Contact: [9876543, 'venu@gmail.com']
Name: rex        Contact: [9942002764, 'rajkumar@bhc.edu']
```

6. Show all customer contacts (Iterate using for loop)

In [82]:
```
for x,y in customers.values():
    print("Phone no:",x,'\t','E-mail',y)
```

```
Phone no: 98876543       E-mail hari@gmail.com
Phone no: 9876543        E-mail venu@gmail.com
Phone no: 9942002764     E-mail rajkumar@bhc.edu
```

7. Show all customer names in alphabetical order

In [83]:
```
print('All customer names in alphabetical order:',sorted(customers))
```

```
All customer names in alphabetical order: ['Hari', 'Venu', 'rex']
```

8. How many customers are there in your dictionary?

In [84]:
```
print(len(customers), 'customers are there in dictionary')
```

```
3 customers are there in dictionary
```

9. Remove customer “rex” from dictionary customers

In [85]:
```
del customers['rex']
print(customers)
```

```
{'Hari': [98876543, 'hari@gmail.com'], 'Venu': [9876543, 'venu@gmail.com']}
```

Question3. Write a program for Character and word counter.

- Develop an application that reads a file and prints words in descending order of their frequency.

In [92]:
```
f=open('shuttle.txt','w')
```

In [93]:
```
count=dict()
with open('shuttle.txt','r') as fhand:
    for line in fhand:
        words=line.split()
        for word in words:
            if word in count:
                count[word]+=1
            else:
                count[word]=1
new=list(count.items())
for i in range(len(new)):
    print(new[i])
```

- Also print the letters such as „a", , „b", etc, in decreasing order of frequency. Your program should convert all the input to lower case and only count the letters a-z. Your program should not count spaces, digits, punctuation, or anything other than the letters a-z.

In [94]:
```
count=dict()
with open('story.txt','r') as fhand:
    for line in fhand:
        words=line.split()
        words=line.lower()
        for word in words:
            for i in word:
                if i.isalpha():
                    if i in count:
                        count[i]+=1
                    else:
                        count[i]=1
new=sorted(list(count.items()))
for i in range(len(new)):
    print(new[i])
```

```
('a', 24)
('b', 1)
('c', 6)
('d', 4)
('e', 44)
('f', 2)
('g', 9)
('h', 33)
('i', 22)
('k', 3)
('l', 11)
('m', 1)
('n', 16)
('o', 28)
('p', 4)
('r', 15)
('s', 22)
('t', 33)
('u', 4)
('w', 16)
('y', 4)
('â', 1)
```

In [ ]: