Program1: Write a Python program to store the information of a student in a dictionary data structure.

Input:

```
dict= {'Name' : 'Jibran', 'Age': 12, 'Class':'Sixth',
'DOB':'16 April 2008'}
print("dict['Name'] :",dict['Name'])
print("dict['Age'] :",dict['Age'])
print("dict['Class'] :",dict['Class'])
print("dict['DOB'] :",dict['DOB'])
```

Output:

dict['Name'] : Jibran

dict['Age'] : 12

dict['Class'] : Sixth

dict['DOB'] : 16 April 2008

Program 2: Using for loop to access the values stored inside the dictionary.

Input:

```
dict= {'Name' : 'Jibran', 'Age': 12, 'Class':'Sixth',
'DOB':'16 April 2008'}
for x in dict:
    print(dict[x])
```

Output:
Jibran
12
Sixth
16 April 2008

Program 3: Using for loop to access the values inside the dictionary by using values() function

Input:

```
dict= {'Name' : 'Jibran', 'Age': 12, 'Class':'Sixth',
'DOB':'16 April 2008'}
for x in dict.values():
    print(x)
```

Output:

Jibran

12

Sixth

16 April 2008

Program 4: Write a program which will extract both the keys and their corresponding values by using item() from a given dictionary.

Input:

```
dict= {'Name' : 'Jibran', 'Age': 12, 'Class':'Sixth',
'DOB':'16 April 2008'}
for x, y in dict.items():
    print(x,y)
```

Output:

Name Jibran
Age 12
Class Sixth
DOB 16 April 2008

Program 5: Write a program which will search the key from a dictionary and print a message that it has found a key from the given dictionary.

Input:

```
dict= {'Name' : 'Jibran', 'Age': 12, 'Class':'Sixth',
'DOB':'16 April 2008'}
if 'DOB' in dict:
    print("Yes, 'DOB' is one of the keys in the dict
dictionary")
```

Output:

Yes, 'DOB' is one of the keys in the dict dictionary

Program 6: Write a program which will add some new information inside the exiting dictionary.

Input:

```
dict= {'Name' : 'Jibran', 'Age': 12, 'Class':'Sixth',
'DOB':'16 April 2008'}
dict['Age'] = 12.5
dict['School'] = 'The Seeds School'

print("dict['Age']: ", dict['Age'])
print("dict['School']: ", dict['School'])

dict['Friend1'] = 'Mohib'
dict['Friend2'] = 'Akbar'
dict['Friend3'] = 'Jazil'

print("dict['Friend1']" , dict['Friend1'])
print("dict['Friend2']" , dict['Friend2'])
print("dict['Friend3']" , dict['Friend3'])
```

Output:
dict['Age']: 12.5
dict['School']: The Seeds School
dict['Friend1'] Mohib
dict['Friend2'] Akbar
dict['Friend3'] Jazil

Program 7: Use pop() to remove the key and its item from the exiting dictionary.

Input:

```
dict= {'Name' : 'Jibran', 'Age': 12, 'Class':'Sixth',
'DOB':'16 April 2006', 'School' : 'The Seeds School',
'Friend1':'Mohib','Friend2':'Akbar', 'Friend3':'Jazil'}
for x, y in dict.items():
    print(x, y)
dict.pop('Friend1')
print(dict)
```

Output:

Name Jibran
Age 12
Class Sixth
DOB 16 April 2006
School The Seeds School
Friend1 Mohib
Friend2 Akbar
Friend3 Jazil
{'Name': 'Jibran', 'Age': 12, 'Class': 'Sixth', 'DOB': '16 April 2006', 'School': 'The Seeds School', 'Friend2': 'Akbar', 'Friend3': 'Jazil'}

Program 8: Write a program which will del some information inside the exiting dictionary

Input:

```
dict= {'Name' : 'Jibran', 'Age': 12, 'Class':'Sixth',
'DOB':'16 April 2006', 'School' : 'The Seeds School',
'Friend1':'Mohib','Friend2':'Akbar', 'Friend3':'Jazil'}
del dict ['Friend1']
print(dict)
```

Output:

{'Name': 'Jibran', 'Age': 12, 'Class': 'Sixth', 'DOB': '16 April 2006', 'School': 'The Seeds School', 'Friend2': 'Akbar', 'Friend3': 'Jazil'}

Program 9: Write a program which will delete the last key with value from the exiting dictionary. Print the remaining dictionary.

Input:

```
dict= {'Name' : 'Jibran', 'Age': 12, 'Class':'Sixth',
'DOB':'16 April 2006', 'School' : 'The Seeds School',
'Friend1':'Mohib','Friend2':'Akbar', 'Friend3':'Jazil'}
print(dict)
for x, y in dict.items():
    print(x, y)
dict.popitem()
print("After poping from the dictionary the remaining
elements are:",dict)
```

Output:

{'Name': 'Jibran', 'Age': 12, 'Class': 'Sixth', 'DOB': '16 April 2006', 'School': 'The Seeds School', 'Friend1': 'Mohib', 'Friend2': 'Akbar', 'Friend3': 'Jazil'}

Name Jibran

Age 12

Class Sixth

DOB 16 April 2006

School The Seeds School
Friend1 Mohib
Friend2 Akbar
Friend3 Jazil
After poping from the dictionary the remaining elements are: {'Name': 'Jibran', 'Age': 12, 'Class': 'Sixth', 'DOB': '16 April 2006', 'School': 'The Seeds School', 'Friend1': 'Mohib', 'Friend2': 'Akbar'}

Program 10: Write a record set for the faculty members of Software Engineering Department, NED University.

Input:

```
faculty = {1: {'name': 'Asma Khan', 'experience': '21', 'gender': ' Female '},
           2: {'name': 'Dr. Raheela', 'experience': '22', 'gender': ' Female '},
           3: {'name': 'Dr. Kashif', 'experience': '22', 'gender': 'Male'},
           4: {'name': 'Dr.Wahab', 'experience': '3', 'gender': 'Male'},
           5: {'name': 'Miss Simrah', 'experience': '19', 'gender': ' Female '},
           6: {'name': 'Miss Shumaila', 'experience': '15', 'gender': ' Female '}}
print(faculty)
```

Output:

{1: {'name': 'Asma Khan', 'experience': '21', 'gender': ' Female '}, 2: {'name': 'Dr. Raheela', 'experience': '22', 'gender': ' Female '}, 3: {'name': 'Dr. Kashif', 'experience': '22', 'gender': 'Male'}, 4: {'name': 'Dr.Wahab', 'experience': '3', 'gender': 'Male'}, 5: {'name': 'Miss Simrah', 'experience': '19', 'gender': ' Female '}, 6: {'name': 'Miss Shumaila', 'experience': '15', 'gender': ' Female '}}

PROGRAMMING EXERCISE

1.Design a dictionary of your family. Once you get the printout update family dictionary with your grandparents (maternal and paternal) including uncles and aunts (maternal and paternal).

Input:

```
my_family={'father':'Manzoor','Mother':'Kulsoom','Brother':'Zaman'}
print(my_family)
mp_family={'maternal':{'Grandfather':'Khuda
dino','Grandmother':'Afrose','Uncle':('Jani','Sajan')},'paternal':{'Grandfather':
'Faqeer','Grandmother':'Khatu','uncle':('Aziz','Anwar')}}
my_family.update(mp_family)
print(my_family)
```

Output:

{'father': 'Manzoor', 'Mother': 'Kulsoom', 'Brother': 'Zaman'}
{'father': 'Manzoor', 'Mother': 'Kulsoom', 'Brother': 'Zaman', 'maternal': {'Grandfather': 'Khuda dino', 'Grandmother': 'Afrose', 'Uncle': ('Jani', 'Sajan')}, 'paternal': {'Grandfather': 'Faqeer', 'Grandmother': 'Khatu', 'uncle': ('Aziz', 'Anwar')}}

2.Write a function to design a personal phone directory of your parents and friends. You must add 12 members. Then make a function to delete a member from a telephone directory. Print total number of members in your personal phone directory.

Input:

```
def phone_dict():
    dict={}
    for i in range(12):
        nam=input("Enter the  Name")
        phon=input("Enter the Number")
        dict[nam]=phon
    print(dict)
    delname = input("Enter the Name Del from Phone directary")
    del dict[delname]
    return dict
a=phone_dict()
print(a)
```

Output:

Enter the Name **kabeer**
Enter the Number **12341**
Enter the Name **taha**
Enter the Number **2553**
Enter the Name **mateen**
Enter the Number **26975**
Enter the Name **rehan**
Enter the Number **59632**
Enter the Name **abdullah**
Enter the Number **258895**
Enter the Name **adeel**
Enter the Number **65789**
Enter the Name **zain**
Enter the Number **564589**
Enter the Name **ali**
Enter the Number **5814**
Enter the Name **zaman**
Enter the Number **225588**
Enter the Name **hammad**
Enter the Number **485862**
Enter the Name **john**
Enter the Number **589555**
Enter the Name **roy**
Enter the Number **5969625**
{'kabeer': '12341', 'taha': '2553', 'mateen': '26975', 'rehan': '59632', 'abdullah': '258895', 'adeel': '65789', 'zain': '564589', 'ali': '5814', 'zaman': '225588', 'hammad': '485862', 'john': '589555', 'roy': '5969625'}
Enter the Name Del from Phone directory **kabeer**
{'taha': '2553', 'mateen': '26975', 'rehan': '59632', 'abdullah': '258895', 'adeel': '65789', 'zain': '564589', 'ali': '5814', 'zaman': '225588', 'hammad': '485862', 'john': '589555', 'roy': '5969625'}

3. Write a function hexASCII() that prints the correspondence between the lowercase characters in the alphabet and the hexadecimal representation of their ASCII code.

Input:

```
def hexASCII():
    Letters='abcdefghijklmnopqrstuvwxyz'
    for item in Letters:
        print('{0} asci code= {1} and hexadecimal
value={2:x}'.format(item,ord(item),ord(item)))
hexASCII()
```

Output:

a asci code= 97 and hexadecimal value=61
b asci code= 98 and hexadecimal value=62
c asci code= 99 and hexadecimal value=63
d asci code= 100 and hexadecimal value=64
e asci code= 101 and hexadecimal value=65
f asci code= 102 and hexadecimal value=66
g asci code= 103 and hexadecimal value=67
h asci code= 104 and hexadecimal value=68
i asci code= 105 and hexadecimal value=69
j asci code= 106 and hexadecimal value=6a
k asci code= 107 and hexadecimal value=6b
l asci code= 108 and hexadecimal value=6c
m asci code= 109 and hexadecimal value=6d
n asci code= 110 and hexadecimal value=6e
o asci code= 111 and hexadecimal value=6f
p asci code= 112 and hexadecimal value=70
q asci code= 113 and hexadecimal value=71
r asci code= 114 and hexadecimal value=72
s asci code= 115 and hexadecimal value=73
t asci code= 116 and hexadecimal value=74
u asci code= 117 and hexadecimal value=75
v asci code= 118 and hexadecimal value=76
w asci code= 119 and hexadecimal value=77
x asci code= 120 and hexadecimal value=78
y asci code= 121 and hexadecimal value=79
z asci code= 122 and hexadecimal value=7a

4. Create double dictionaries one of which is your choice of dishes. Other one is dishes cooked in a week. Compare them and find how many dishes you will get of your choice to be cooked in next week. Print the name of those dishes as well.

Input:

```
cot=0
dict_1 ={'dish 1':'biryani','dish 2':'karahi','dish 3':'macroni','dish
4':'daal','dish 5':'sabzi','dish 6':'daal makhni','dish 7':'mutton
keema'}
dict_2 ={'dish 1':'chicken dish','dish 2':'aloo qeema','dish
3':'biryani','dish 4':'daal','dish 5':'karahi','dish 6':'daal
makhni','dish 7':'egg aloo curry'}
for values in dict_1.values():
  if values in dict_2.values():
    cot+=1
    print(values)
print('the amount of total favourite dishes to e cooked in the
upcoming week is',cot)
```

Output:

biryani
karahi
daal
daal makhni
the amount of total favourite dishes to e cooked in the upcoming week is 4

5. Design a list of guests with family members on your sister wedding. Each family members must be counted. Your parents have made a list of guests and you have made another list. At the end compare both the list and find the common guests which both of you have invited and count them once. The program will return the number of guest with members and total number of guest. Use functions to perform the required actions.

Input:

```
my_list=[{'members':['rehaan','rohaan','rehmaan','farzana'],'guests':['wamiq','wa
siq','sona','rana','saima','saleem','mehzaab','laiq']}]
other_list=[{'guests':['wamiq','rahim','arham','mehzaab','farzaan','farzam','wasi
q','mateen','shukrnaa','asma','shahid','mumtaz','sona','rana','azeem','siddique',
'saima','saleem','laiq']}]
emp_list=[]
length = len(my_list[0]['members'])
total = length + len(other_list[0]['guests'])
for item in my_list[0]['guests']:
    if item in other_list[0]['guests']:
        emp_list.append(item)
print('the common guests in the list made by me and my  parents is',emp_list,'and
their total quantity is',len(emp_list))
print('the total invited guests are:',len(other_list[0]['guests']))
print('the total invited guests with members are:',total)
```

Output:

the common guests in the list made by me and my parents is ['wamiq', 'wasiq', 'sona', 'rana', 'saima', 'saleem', 'mehzaab', 'laiq']
and their total quantity is 8
the total invited guests are: 19
the total invited guests with members are: 23