TYPE-C:DICTIONARY:CH-13

1) Write a program to enter names of employees and their salaries as input and store them in a dictionary.

sol:

```
dict={}
count=int(input('enter no.of employee:'))
for i in range(count):
    name=input('enter the name of the employee: ')
    sal=int(input('enter the salary od the employee: '))
    dict[name]=sal
print(dict)
```

output:

```
enter no.of employee:3
enter the name of the employee: deepak
enter the salary od the employee: 15000
enter the name of the employee: prashanth
enter the salary od the employee: 1000
enter the name of the employee: kumar
enter the salary od the employee: 68000
{'deepak': 15000, 'prashanth': 1000, 'kumar': 68000}
```

2) Write a program to count the number of times a character appears in a given string.

sol:

```
string=input('enter the string:')
val=input('enter the letter to count:')
v=string.count(val)
print(v)
```

output:

```
enter the string:pythonworld
enter the letter to count:o
2
```

3) Write a program to convert a number entered by the user into its corresponding number in words. For example, if the input is 876 then the output should be 'Eight Seven Six'.

(Hint. use dictionary for keys 0-9 and their values as equivalent words.)

sol:

```
a=''
num=input('enter the number: ')
d={0 : "Zero" , 1 : "One" , 2 : "Two" , 3 : "Three" , 4 : "Four" , 5 : "Five" , 6 : "Six" , 7 : "Seven" , 8 :
"Eight" , 9 : "Nine"}
for i in num:
    b=d[int(i)]
```

```
        a=a+b+' '
    print(a)
```

output:

```
    enter the number: 426
    Four Two Six
```

4) Repeatedly ask the user to enter a team name and how many games the team has won and how many they lost. Store this information in a dictionary where the keys are the team names and the values are lists of the form [wins, losses].

(a) Using the dictionary created above, allow the user to enter a team name and print out the team's winning percentage.

(b) Using the dictionary, create a list whose entries are the number of wins of each team.

(c) Using the dictionary, create a list of all those teams that have winning records.

sol:

```
winning=[]
lossing=[]
list=[]
d={}
c=int(input('enter no of teams:'))
for i in range(c):
    tn=input('enter name of the team:')
    w=int(input('enter num of win:'))
    l=int(input('enter no.of lost:'))
    list.append(w)
    list.append(l)
    d[tn]=list
    list=[]
print(d)
name=input('enter name of the team for win percent:')
if name in d==False:
    print('team not found')
else:
    wp=(d[name][0]/sum(d[name]))*100
    print('win percent is:',wp,'%')
z=d.values()
for m in z:
    winning.append(m[0])
    lossing.append(m[1])
print('no.of wins:',winning)
print('no.of lost:',lossing)
```

output:

```
enter no of teams:3
enter name of the team:titans
enter num of win:6
enter no.of lost:4
enter name of the team:martians
enter num of win:5
enter no.of lost:5
```

```
enter name of the team:spartans
enter num of win:8
enter no.of lost:2
{'titans': [6, 4], 'martians': [5, 5], 'spartans': [8, 2]}
enter name of the team for win percent:spartans
win percent is: 80.0 %
no.of wins: [6, 5, 8]
no.of lost: [4, 5, 2]
```

5) Write a program that repeatedly asks the user to enter product names and prices. Store all of these in a dictionary whose keys are the product names and whose values are the prices.
When the user is done entering products and prices, allow them to repeatedly enter a product name and print the corresponding price or a message if the product is not in the dictionary.

sol:

```
d={}
num=int(input('enter the num of product:'))
for i in range(num):
    product=input('enter the name of the product:')
    price=int(input('enter the price of the product:'))
    d[product]=price
print(d)
n=int(input('enter the no.of products to be searched:'))
for i in range(n):
    sub=input('enter the product name:')
    if sub not in d:
        print('item not found')
    else:
        print('the price of the given product is:',d[sub],'RS')
```

output:

```
enter the num of product:5
enter the name of the product:tomato
enter the price of the product:40
enter the name of the product:potato
enter the price of the product:80
enter the name of the product:cabbage
enter the price of the product:35
enter the name of the product:garlic
enter the price of the product:70
enter the name of the product:bean
enter the price of the product:29
{'tomato': 40, 'potato': 80, 'cabbage': 35, 'garlic': 70, 'bean': 29}
enter the no.of products to be searched:2
enter the product name:brinjal
item not found
enter the product name:tomato
the price of the given product is: 40 RS
```

6) Create a dictionary whose keys are month names and whose values are the number of days in the corresponding months.

(a) Ask the user to enter a month name and use the dictionary to tell how many days are in the month.
(b) Print out all of the keys in alphabetical order.
(c) Print out all of the months with 31 days.
(d) Print out the (key-value) pairs sorted by the number of days in each month.

sol:

```
d=days_in_months =
{"january":31,"february":28,"march":31,"april":30,"may":31,"june":30,"july":31,"august":31,"september
":30,"october":31,"november":30,"december":31}
enter=input('enter the name of the month: ')
print('no.of days are',d[enter],'days')
v=list(d.keys())
m=sorted(v)
print('the keys in alphabetical order:',m)
for i in m:
    if d[i]==31:
        print(i,'has 31 days')
new={}
for a in v:
    if d[a]==28:
        new[a]=28
for b in v:
    if d[b]==30:
        new[b]=30
for c in v:
    if d[c]==31:
        new[c]=31
print('the dictionary in ascending order is:',new)
```

output:

```
enter the name of the month: july
no.of days are 31 days
the keys in alphabetical order: ['april', 'august', 'december', 'february', 'january', 'july', 'june', 'march',
'may', 'november', 'october', 'september']
august has 31 days
december has 31 days
january has 31 days
july has 31 days
march has 31 days
may has 31 days
october has 31 days
the dictionary in ascending order is: {'february': 28, 'april': 30, 'june': 30, 'september': 30, 'november':
30, 'january': 31, 'march': 31, 'may': 31, 'july': 31, 'august': 31, 'october': 31, 'december': 31}
```

7) Can you store the details of 10 students in a dictionary at the same time ? Details include - rollno, name, marks, grade etc. Give example to support your answer.

sol:

```
d={}
list=[]
for i in range(10):
```

```
        name=input('enter the name:')
        mark=int(input('enter the mark:'))
        grade=input('enter the grade:')
        roll=int(input('enter the roll number:'))
        list.extend([roll,mark,grade])
        d[name]=list
        list=[]
    print(d)
```

output:

```
    enter the name:joe
    enter the mark:99
    enter the grade:a
    enter the roll number:16
    enter the name:jeeva
    enter the mark:78
    enter the grade:c
    enter the roll number:21
    enter the name:anish
    enter the mark:67
    enter the grade:d
    enter the roll number:14
    enter the name:paru
    enter the mark:78
    enter the grade:6
    enter the roll number:7
    enter the name:vinoth
    enter the mark:78
    enter the grade:b
    enter the roll number:15
    enter the name:baskar
    enter the mark:78
    enter the grade:b
    enter the roll number:4
    enter the name:sanjay
    enter the mark:78
    enter the grade:b
    enter the roll number:6
    enter the name:jayan
    enter the mark:92
    enter the grade:a
    enter the roll number:17
    enter the name:akmahl
    enter the mark:85
    enter the grade:b
    enter the roll number:1
    enter the name:paari
    enter the mark:79
    enter the grade:b
    enter the roll number:8
```

{'joe': [16, 99, 'a'], 'jeeva': [21, 78, 'c'], 'anish': [14, 67, 'd'], 'paru': [7, 78, '6'], 'vinoth': [15, 78, 'b'], 'baskar': [4, 78, 'b'], 'sanjay': [6, 78, 'b'], 'jayan': [17, 92, 'a'], 'akmahl': [1, 85, 'b'], 'paari': [8, 79, 'b']}

8) Given the dictionary x = {'k1':'v1', 'k2':'v2', 'k3':'v3'}, create a dictionary with the opposite mapping, i.e., write a program to create the dictionary as :
inverted_x = {'v1': 'k1' , 'v2' :'k2' , 'v3':'k3'}

sol:

```
x = { "k1" : "v1" , "k2" : "v2", "k3" : "v3"}
inverted_x = {}
for i in x :
    inverted_x[x[i]] = i
print(inverted_x)
```

output:

```
{'v1': 'k1', 'v2': 'k2', 'v3': 'k3'}
```

9) Given two dictionaries say D1 and D2. Write a program that lists the overlapping keys of the two dictionaries, i.e., if a key of D1 is also a key of D2, then list it.

sol:

```
d1=eval(input('enter the dictionary1:'))
d2=eval(input('enter the dictionary2:'))
v=list(d1.keys())
m=list(d2.keys())
for s in v:
    a=m.count(s)
    if a>0:
        print(s,'is overlapped')
```

output:

```
enter the dictionary1:{'a': 1, 'b': 2}
enter the dictionary2:{'a': 1, 'b': 2,'c': 3, 'd': 4}
a is overlapped
b is overlapped
```

10) Write a program that checks if two same values in a dictionary have different keys. That is, for dictionary D1 = { 'a' : 10, 'b': 20, 'c' : 10}, the program should print 2 keys have same values and for dictionary D2 = {'a' : 10, 'b' : 20, 'c' : 30} , the program should print No keys have same values.

sol:

```
d=eval(input('enter the dictionary:'))
c=0
a=list(d.values())
list=[]
for m in a:
    if m not in list:
```

```
            list.append(m)
        if a.count(m)==1:
            c+=1
            if c==len(a):
                print('no keys are repeated')
    for z in list:
        if a.count(z)>1:
            b=a.count(z)
            print(b,'keys has same value as ',z)
```

output:

```
enter the dictionary:{'a': 10, 'b': 20, 'c': 10, 'd': 40, 'e': 10, 'f': 20}
3 keys has same value as  10
2 keys has same value as  20
```

11) Write a program to check if a dictionary is contained in another dictionary e.g., if

```
d1 = {1:11, 2:12}
d2 = {1:11, 2:12, 3:13, 4:15}
```

then d1 is contained in d2.

sol:

```
count=0
d1=eval(input('enter d1:'))
d2=eval(input('enter d2:'))
s=list(d1.items())
p=list(d2.items())
for i in s:
    for j in p:
        if j==i:
            count+=1
if count==len(s):
    print('the first is  contained in 2nd')
if count != len(s):
    print('the first is not contained second')
```

output:

```
enter d1:{1: 11, 2: 12}
enter d2:{1: 11, 2: 12, 3: 13, 4: 15}
the first is  contained in 2nd
-----------------------------------------------
enter d1:{'a': 1, 'b': 2}
enter d2:{'c': 3, 'd': 4}
the first is not contained second
```

12) A dictionary D1 has values in the form of lists of numbers. Write a program to create a new dictionary D2 having same keys as D1 but values as the sum of the list elements e.g.,

```
D1 = {'A' : [1, 2, 3] , 'B' : [4, 5, 6]}
then
D2 is {'A' :6, 'B' : 15}
```

sol:

```
d1=eval(input('enter dict1:'))
d2={}
for i in d1:
    d2[i]=sum(d1[i])
print(d2)
```

output:

```
enter dict1:{'A' : [1, 2, 3] , 'B' : [4, 5, 6]}
{'A': 6, 'B': 15}
```