PYTHON PROGRAMMING

SLOT 7 (Dictionary)

1. You are given a dictionary whose keys are the names of the students and the key values are the total marks obtained :

Write a Python program that partitions this dictionary into two sub-dictionaries:

a. admittedStudents whose keys are the admitted students and the key values are the marks obtained (marks greater than or equal to 50).
b. nonAdmittedStudents whose keys are non-admitted students and the key values are the marks obtained (marks less than or equal to 50).

PROGRAM

```
def student(dict):
    admitted = {}
    notAdmitted = {}

    for i , j in dict.items():
        if j >= 50 :
            admitted[i] = j
        else:
            notAdmitted[i] = j

    print('Admitted students : ' , admitted)
    print('Not Admitted students : ' , notAdmitted)
```

```
dict = {'Aju' : 45 , 'Nivin' : 50 , 'Sree' : 75 , 'Basil' : 23 , 'Tovi' : 55}
print('Students with mark : ' , dict)
student(dict)
```

OUTPUT

```
Students with mark :  {'Aju': 45, 'Nivin': 50, 'Sree': 75, 'Basil': 23, 'Tovi': 55}
Admitted students :  {'Nivin': 50, 'Sree': 75, 'Tovi': 55}
Not Admitted students :  {'Aju': 45, 'Basil': 23}
```

2. Write a Python program that combines by concatenating the three dictionaries into One

PROGRAM

```
def dictCon(dict1 , dict2 , dict3):
    dict1.update(dict2)
    dict1.update(dict3)
    print('Dictionary after concatination : ', dict1)

dict1 = {'Duke' : 1 , 'Rc 200' : 3, 'Duke Adventure' : 6}
dict2 = {'Duckati Panigale' : 7 , 'Scrambler' : 4}
dict3 = {'R15 v3' : 9}

print('Dictionary 1 : ' , dict1)
print('Dictionary 2 : ' , dict2)
print('Dictionary 3 : ' , dict3)
dictCon(dict1,dict2,dict3)
```

OUTPUT

```
Dictionary 1 :  {'Duke': 1, 'Rc 200': 3, 'Duke Adventure': 6}
Dictionary 2 :  {'Duckati Panigale': 7, 'Scrambler': 4}
Dictionary 3 :  {'R15 v3': 9}
Dictionary after concatination :  {'Duke': 1, 'Rc 200': 3, 'Duke Adventure': 6, 'Duckati Panigale': 7, 'Scrambler': 4, 'R15 v3': 9}
```

3. Write a function in Python that takes a list of integers as a parameter and returns a dictionary whose keys are the list integers and whose values are “odd” or “even”.

PROGRAM

```
def oddEven(list):
    dict = {}
    for i in list:
        if i % 2 == 0:
            dict[i] = 'Even'
        else:
            dict[i] = 'Odd'
    for i , j in dict.items():
        print(i, ' : ' ,j)

list = list(map(int,input('Enter the elements : ' ).split()))
print('Entred list : ' , list)
oddEven(list)
```

OUTPUT

```
Enter the elements : 15 25 10 21 77 44 12 78
Entred list :  [15, 25, 10, 21, 77, 44, 12, 78]
15  :  Odd
25  :  Odd
10  :  Even
21  :  Odd
```

77 : Odd

44 : Even

12 : Even

78 : Even

4. Write a Python program that asks the user to enter a string, and return a dictionary whose keys are the characters in the string entered and the values are the number of occurrences of the characters in the string.

PROGRAM

```
def chrCount(str):
    dict = {}
    for i in str:
        if i in dict:
            dict[i] += 1
        else:
            dict[i] = 1
    for i,j in dict.items():
        print(i, ':' ,j)
str = input('Enter the string : ')
print('Entred string is : ' , str)
chrCount(str)
```

OUTPUT

```
Enter the string : marthoma
Entred string is :  marthoma
m : 2
a : 2
r : 1
t : 1
h : 1
o : 1
```

5. Write a program in Python that asks the user to enter ten integers of their choice and return them a dictionary whose keys are the entered integers and whose values are ‘prime’ or ‘not prime’ depending on the entered integer.

PROGRAM

```
def primeTest(list):
    flag=0
    for i in range(2,(list-1)):
        if list % i == 0:
            flag += 1
    if flag==0:
        return True
    else:
        return False

list = list(map(int,input("Enter the list of numbers:").split()))
print('Entred list : ' ,list)

dict = {}
for i in list:
    if(i==1 or i==0):
        dict[i]="not prime"
    else:
        if(primeTest(i)):
            dict[i]="prime"
        else:
            dict[i]="not prime"
```

```
for i , j in dict.items():
    print(i, " : " ,j)
```

OUTPUT

```
Enter the list of numbers:4 5 2 8 55 45 34
Entred list :  [4, 5, 2, 8, 55, 45, 34]
4  :  not prime
5  :  prime
2  :  prime
8  :  not prime
55  :  not prime
45  :  not prime
34  :  not prime
```

6. Write a python program that asks the user to enter an integer n and return a dictionary whose keys are integers 1, 2, 3, ... n and whose values are 1! , 2! , 3! , ..., n!

PROGRAM)

```
def fact(num):
    sum = 1
    for i in range(num,1,-1):
        sum *= i
    return sum

l=list(map(int,input("Enter the list of numbers : ").split()))
dic={}
for i in l:
    dic[i]=fact(i)
print(dic)
```

OUTPUT

```
Enter the list of numbers : 3 4 5 6 7 8
{3: 6, 4: 24, 5: 120, 6: 720, 7: 5040, 8: 40320}
```

7. Write a Python program that asks the user to enter a text and return a dictionary whose keys are the words of the text entered and the values are the lengths of the words that make up the text.

PROGARAM

```
def wordCnt(text):
    dict={}
    for i in text:
        dict[i] = len(i)
    return dict

text = input("Enter the text : ").split()
print(wordCnt(text))
```

OUTPUT

```
Enter the text : Marthoma College Ayur
{'Marthoma': 8, 'College': 7, 'Ayur': 4}
```

8. Given a dictionary d whose key values are lists. Write a Python program that transforms the dictionary d by sorting the lists.

PROGRAM

```
def sortDict(dict):
    for i,j in dict.items():
        dict[i] = sorted(j)
    return dict

dict = {"a1": [21, 17, 22, 3], "a2": [11, 15, 8, 13], "a3": [7, 13, 2, 11], "a4": [22,14,7,9]}
print("Before Sorting : ", dict)
print("After Sorting  :", sortDict(dict))
```

OUTPUT

```
Before Sorting :  {'a1': [21, 17, 22, 3], 'a2': [11, 15, 8, 13], 'a3': [7, 13, 2, 11], 'a4': [22, 14, 7, 9]}
After Sorting  : {'a1': [3, 17, 21, 22], 'a2': [8, 11, 13, 15], 'a3': [2, 7, 11, 13], 'a4': [7, 9, 14, 22]}
```

9. Write a python algorithm as function that verify if a key is present in given dictionary or not.

PROGRAM

```
def DicPresent(dict , search_key):
    if search_key in dict.keys():
        return True
    else:
        return False

n = int(input("Enter the number element to insert : "))
dict = {}

for i in range(0 , n):
    key=input("Enter the key : ")
    value=input("Enter the value : ")
    dict[key]=value
search_key = input("Enter the key to search:")
print()

if(DicPresent(dict,search_key)):
    print("key present with value",dict[search_key])
else:
   print("key Not Present")
```

OUTPUT

Enter the number element to insert : 4

Enter the key : 1

Enter the value : Tovino

Enter the key : 23

Enter the value : Basil

Enter the key : 45

Enter the value : Sanju Samson

Enter the key : 35

Enter the value : Sachin

Enter the key to search:45

key present with value Sanju Samson