Laboratory Report Cover Sheet

SRM Institute of Science and Technology
College of Engineering and Technology
Department of Electronics and Communication Engineering

18ECO109J Embedded System Design using

Raspberry Pi

Sixth Semester, 2022-23 (Even semester)

Name :

Register Number :

Day Order :

Venue :

Title of the Experiment :

Date of conduction :

Date of Submission :

Particulars	Max. Marks	Marks Obtained
Pre-lab / Algorithm	10	
Lab Performance	20	
Post-lab	10	
Total	**40**	

REPORT VERIFICATION

Date :

Faculty Name :

Signature :

LAB-4 Programs on Dictionary Operations

Aim:

To explore programs on dictionary operations using python 3

Task:

1. Write a Python script to sort (ascending and descending) a dictionary by value
2. Write a Python Program to generate a temperature profile dictionary (values in range:30 to 100)for ten days randomly (from august 1 to august 31) and check whether august 10 data exist in a dictionary or not. (Key=date,value=temperate value)
3. In program 2, find the count of temperature 30,40 in the dictionary.
4. Repeat the program 2 for July month and write a python program to concatenate the two dictionaries into one dictionary named July_aug_temp.
5. Write a Python Program to multiply all the items in the dictionary "July_aug_temp" which is generated in program 4 and find average temperate for the two months.

Algorithm:

1. Sorted Function is used to sort the given dictionary in ascending and descending order respectively.

2. A for loop is used to select 10 days of August and random.randint(30, 101) function is used to assign values between range 30 to 100.

3. For loop with two count variables to count the number of 30 and 40 in the dictionary.

4. July dictionary is declared and stored with random values between 30 to 100, update() function is used to merge both august and july dictionaries.

5. For loop is used to calculate the multiplication and average of the concatenated dictionary.

Programs:

C: > Users > hy717 > Documents > java > Lab4.py > ...

```python
# Ques1. TO sort a dictionary by value
import random
import operator

# RA2011003010746
dic={2:90, 1: 100, 8: 3, 5: 67, 3: 5}
dic2=dict(sorted(dic.items(),key= lambda x:x[1]))
sorted_d = dict( sorted(dic.items(), key=operator.itemgetter(1),reverse=True))
print("Sorted according to ascending values:")
print(dic2)
print("Sorted according to descending values:")
print(sorted_d)
print()

# Ques2.
aug={}
print("August Tempratures:")
for i in range(1, 11):
    a = random.randint(30,101)
    aug.__setitem__(f"aug{i}", a)
print(aug)
print()
print()

# Ques3.
c30=0
c40=0
for keys in aug:
    if aug[keys] ==30:
        c30+=1
    elif aug[keys]==40:
        c40+=1

print(f"Count of 30: {c30}")
print(f"Count of 40: {c40}")

print()
print()
print()
```

```python
#Ques4.
july={}
for i in range(1, 11):
    a = random.randint(30,101)
    july.__setitem__(f"july{i}", a)
concat= aug
a=concat.update(july)
print("July_August_Temprature_Table:")
print(concat)
print()
print()
print()

#Ques5.
mul=1
sum=0
for keys in concat:
    mul=mul*aug[keys]
    sum=sum+aug[keys]
l = len(concat)
print(f"Multiplication value is: {mul}")
print(f"Average is: {sum/l}")
```

Output:

```
PS C:\Users\hy717> & C:/Users/hy717/AppData/Local/Programs/Python/Python36/python.exe c:/Users/hy717/Documents/java/Lab4.py
Sorted according to ascending values:
{8: 3, 3: 5, 5: 67, 2: 90, 1: 100}
Sorted according to descending values:
{1: 100, 2: 90, 5: 67, 3: 5, 8: 3}

August Tempratures:
{'aug1': 69, 'aug2': 56, 'aug3': 41, 'aug4': 55, 'aug5': 47, 'aug6': 63, 'aug7': 79, 'aug8': 32, 'aug9': 47, 'aug10': 53}


Count of 30: 0
Count of 40: 0
```

```
July_August_Temprature_Table:
{'aug1': 69, 'aug2': 56, 'aug3': 41, 'aug4': 55, 'aug5': 47, 'aug6': 63, 'aug7': 79, 'aug8': 32, 'aug9': 47, 'aug10': 53, 'july1': 97, 'july2': 69, 'july3': 63, 'july4': 68, 'july5': 68, '
july6': 45, 'july7': 65, 'july8': 49, 'july9': 34, 'july10': 78}



Multiplication value is: 1204058363088494710141014150047744000
Average is: 58.9
PS C:\Users\hy717>
```

Post Lab Questions:

1. Write a python program, that repeatedly asks the user to enter product names and prices. Store all of them in a dictionary whose keys are product names and values are prices. And also write a code to search an item from the dictionary.

2. Write a Python program to get the maximum and minimum value in a dictionary.

C: > Users > hy717 > Documents > java > PreLab4.py > ...

```
1
2   dic={}
3   for i in range(3):
4       a=input(" Enter Product Name:")
5       b=int(input(" Enter Price: "))
6       dic.__setitem__(a,b)
7
8   print(dic)
9
10  dic2={2:90, 1: 100, 8: 3, 5: 67, 3: 5}
11  print(f"Maximum: {dic2[max(dic2, key=dic2.get)]}")
12  print(f"Minimum: {dic2[min(dic2, key=dic2.get)]}")
13
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PS C:\Users\hy717> & C:/Users/hy717/AppData/Local/Programs/Py
 Enter Product Name:Rice
 Enter Price: 100
 Enter Product Name:Shoe
 Enter Price: 250
 Enter Product Name:Glasses
 Enter Price: 50
{'Rice': 100, 'Shoe': 250, 'Glasses': 50}
Maximum: 100
Minimum: 3
PS C:\Users\hy717>
```

Result: