LAB-2

AIM : To learn about various data structures in Python
- List
- Tuple
- Dictionary
- String

Q-1 Given the participants' score sheet for your University Sports Day, you are required to find the runner-up n score. You are given scores. Store them in a list and find the score of the runner-up.

Code :

```
participants = int(input("Enter Number of participants : "))
score = []

for i in range(1, participants + 1) :
    score_var = int(input("Enter Score for Participant " + str(i) + " : "))
    score.append(score_var)

score.sort()
print("Runner UP Score : " + str(score[participants - 2]))
```

Output

```
PS F:\B.TECH\SEM-4\SP\Lab-2> python prac1.py
Enter Number of participants : 5
Enter Score for Participant 1 : 10
Enter Score for Participant 2 : 20
Enter Score for Participant 3 : 30
Enter Score for Participant 4 : 40
Enter Score for Participant 5 : 50
Runner UP Score : 40
PS F:\B.TECH\SEM-4\SP\Lab-2>
```

Q-2 Write a Python script to print a dictionary where the keys are numbers between 1 and 15 (both included) and the values are square of keys.

Code :

```
d=dict()
for x in range(1,16):
    d[x] = x * x
print(d)
```

Output

```
PS F:\B.TECH\SEM-4\SP\Lab-2> python prac2.py
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100, 11: 121, 12: 144, 13: 169, 14: 196, 15: 2
25}
PS F:\B.TECH\SEM-4\SP\Lab-2>
```

Q-3 Create a list of intergers and print squares of all numbers using list Comprehension.

Code :

```
list = [1,2,3,4,5]
Square = []

for i in list :
    Square.append(i * i)

print(Square)
```

Output

```
PS F:\B.TECH\SEM-4\SP\Lab-2> python prac3.py
[1, 4, 9, 16, 25]
PS F:\B.TECH\SEM-4\SP\Lab-2>
```

Q-4 Create a dictionary of country and their capital. Take n inputs from the user. After the dictionary is created, perform the following operations :
- Search based on a key
- Delete an element based on a key

Code :

```
number = int(input("Enter number of operation : "))

print("1 for search | 2 for delete")

countyDic = {
    "India" : "Delhi",
    "England" : "London",
    "Nepal" : "Katmandu",
    "Itly" : "Rome",
    "Australia" : "Canbbera",
    "Newzealand" : "Wellington",
}

for i in range(1,number + 1) :
    choice = int(input("Enter Choice : "))
    if(choice == 1) :
        key = str(input("Search : "))
        capital = countyDic.get(key)
        print("Capital = " + str(capital))
    if(choice == 2) :
        key = str(input("Delete : "))
        capital = countyDic.pop(key)
        print(str(capital) + " is Deleted")
        print(countyDic)
```

Output

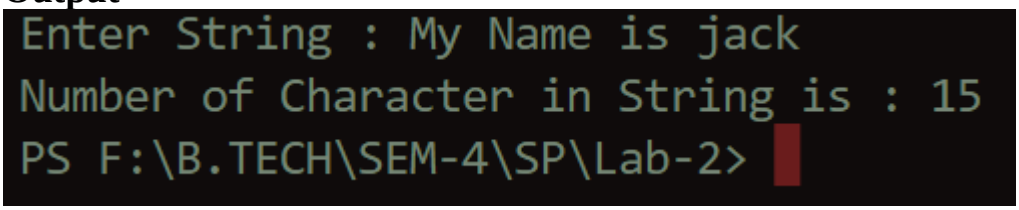
```
PS F:\B.TECH\SEM-4\SP\Lab-2> python prac4.py
Enter number of operation : 3
1 for search | 2 for delete
Enter Choice : 1
Search : India
Capital = Delhi
Enter Choice : 1
Search : Australia
Capital = Canbbera
Enter Choice : 2
Delete : Nepal
Katmandu is Deleted
{'India': 'Delhi', 'England': 'London', 'Itly': 'Rome', 'Australia': 'Canbbera', 'Newzealand': 'Wellington'}
PS F:\B.TECH\SEM-4\SP\Lab-2>
```

Q-5 Write a Python program to count the number of characters (character frequency) in a string.

Code :

```
string = str(input("Enter String : "))
print("Number of Character in String is : " + str(len(string)))
```

Output



Q-6 Write a Python program to convert a given string into a list of words, modify one word and convert it back to the string.

Code :

```
string = str(input("Enter String : "))
list = string.split(" ")
print(list)
list[2] = "cute"
new_string = ""
for i in list :
    new_string += I + “ ”
print(new_string)
```

Output

```
PS F:\B.TECH\SEM-4\SP\Lab-2> python prac6.py
Enter String : Jack is good boy
['Jack', 'is', 'good', 'boy']
Jack is cute boy
PS F:\B.TECH\SEM-4\SP\Lab-2>
```

Q-7 Write a Python program to count the occurrences of each word in a given sentence.

Code :

```
def word_count(str) :
    count = dict()
    list = str.split()
    for i in list :
        if i in count :
            count[i] += 1
        else :
            count[i] = 1
    return count
string = str(input("Enter String : "))
print(word_count(string))
```

Output

```
Enter String : Jack is good as well as cute boy
{'Jack': 1, 'is': 1, 'good': 1, 'as': 2, 'well': 1, 'cute': 1, 'boy': 1}
PS F:\B.TECH\SEM-4\SP\Lab-2>
```

Q-8 Write a Python program to count occurrences of a substring in a string.

Code :

```
string = str(input("Enter String : "))
sub_string = str(input("Enter Sub-string : "))
count = int(string.count(sub_string))
print("Occurance of " + str(sub_string) + " is " + str(count) + " times")
```

Output

```
Enter String : Jack is good as well as cute as well as smart boy
Enter Sub-string : as
Occurance of as is 4 times
PS F:\B.TECH\SEM-4\SP\Lab-2>
```