

LAB -6

1) Create an empty dictionary.

```
In [1]: dict={}
dict
```

```
Out[1]: {}
```

2. Create the following dictionary

Key	value
A	10
B	20

```
In [2]: dict={"A":10,"B":20}
dict
```

```
Out[2]: {'A': 10, 'B': 20}
```

3. Create a dictionary with different datatypes for keys.

```
In [1]: dict1={"A":"D", 2:"R", 3.8:"11"}
dict1
```

```
Out[1]: {'A': 'D', 2: 'R', 3.8: '11'}
```

4. Print all the items of a dictionary

```
In [2]: dict1={"A":"D", 2:"R", 3.8:"11"}
print(dict1)
```

```
{'A': 'D', 2: 'R', 3.8: '11'}
```

5.Delete an element of a dictionary

```
In [3]: dict1={"A":"D", 2:"R", 3.8:"11"}
del(dict1[2])
dict1
```

```
Out[3]: {'A': 'D', 3.8: '11'}
```

6.Delete full dictionary

```
In [6]: dict1={"A":"D", 2:"R", 3.8:"11"}
del(dict1)
```

7. Print a value for a key

```
In [5]: dict1={"A":"D", 2:"R", 3.8:"11"}
print(dict1[3.8])
```

11

8.To check if a key id present in a dictionary

```
In [7]: dict1={"A":"D", 2:"R", 3.8:"11"}
"A" in dict1
```

Out[7]: True

9.Update a value of a key

```
In [8]: dict1={"A":"D", 2:"R", 3.8:"11"}
dict1[3.8]="2k19"
print(dict1)
```

{'A': 'D', 2: 'R', 3.8: '2k19'}

10. Add a new key value pair

```
In [10]: dict1={"A":"D", 2:"R", 3.8:"11"}
dict1["b"]="2K19"
dict1
```

Out[10]: {'A': 'D', 2: 'R', 3.8: '11', 'b': '2K19'}

11. Print dictionary for keys{1,10} and values as square of keys

```
In [33]: dict1={}
for i in range(1,11):
    dict1[i]=i*i
print(dict1)
```

{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100}

12. Print nested dictionary

```
In [38]: dict1={1:"a", 2:"b", 3:{4:"c",5:"d"}, 6:"e" }
print(dict1)

{1: 'a', 2: 'b', 3: {4: 'c', 5: 'd'}, 6: 'e'}
```

13. Concatenate three dictionaries

Sample Dictionary : dic1={1:10, 2:20} dic2={3:30, 4:40} dic3={5:50,6:60} Expected Result : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}

```
In [43]: dic1={1:10, 2:20}
dic2={3:30, 4:40}
dic3={5:50,6:60}
dict1={**dic1, **dic2, **dic3}
dict1
```

```
Out[43]: {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}
```

14. Sum all the values of a dictionary.

```
In [55]: dic1={1:1, 2:2, 3:3, 4:4, 5:5}
len1=len(dic1)
sum=0
for i in range(1,len1+1):
    sum+=dic1[i]
print(dic1)
print(sum)
```

```
{1: 1, 2: 2, 3: 3, 4: 4, 5: 5}
15
```

15. Accessing an element of a nested dictionary

```
In [60]: dict1={1:"a", 2:"b", 3:{4:"c",5:"d"}, 6:"e" }
dict1[3][5]
```

```
Out[60]: 'd'
```

16. 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.

Sample Dictionary {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: 225}

```
In [61]: dict1={}
         for i in range(0,16):
             dict1[i]=i*i
         print(dict1)
```

```
{0: 0, 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: 225}
```

17. Insert factorial of keys in values. And print dictionary

```
d={1:1,2:2,3:6,4:24,5:120....}
```

```
In [67]: def factorial(n):
         fact=1
         for i in range(1,n+1):
             fact=i*fact
         return fact
         dict1={}
         for i in range (1,7):
             dict1[i]=factorial(i)
         print(dict1)
```

```
{1: 1, 2: 2, 3: 6, 4: 24, 5: 120, 6: 720}
```

Sets

1. Write a program to create a set

```
In [3]: seta={1,2,3,1}
         seta
```

```
Out[3]: {1, 2, 3}
```

2. Write a program to add an element to set

```
In [71]: set1={1,2,3,4}
         set1.add(5)
         print(set1)
```

```
{1, 2, 3, 4, 5}
```

3. Write a program to add multiple items using update function

```
In [74]: set1={1,2,3,4}
         set2={5,6,7}
         set1.update(set2)
         set1
```

```
Out[74]: {1, 2, 3, 4, 5, 6, 7}
```

4. Write a program to find length of a set

```
In [75]: set1={1,2,3,4}
         print(len(set1))
```

```
4
```

5. Write a program to remove value from a set

```
In [77]: set1={1,2,3,4}
         set1.remove(3)
         set1
```

```
Out[77]: {1, 2, 4}
```

6. Write a program to pop an element from a set

```
In [81]: set1={3,4,1}
         set1.pop()
```

```
Out[81]: 1
```

7. Write a program to update a set

```
In [83]: set1={1,2,3,4}
         set2={5,6,7}
         set1.update(set2)
         set1
```

```
Out[83]: {1, 2, 3, 4, 5, 6, 7}
```

8. Write a Python program to create an intersection of sets.

```
In [11]: set1={1,2,3,4,5}
         set2={3,4,5,6}
         print(set1 & set2)
```

```
{3, 4, 5}
```

9. Write a Python program to create a union of sets.

```
In [89]: set1={1,2,3,4}
         set2={4,5,6,7}
         print(set1.union(set2))
```

```
{1, 2, 3, 4, 5, 6, 7}
```

10. Write a Python program to clear a set.

```
In [90]: set1={1,2,3,4}
         set1.clear()
         set1
```

```
Out[90]: set()
```

11. Write a Python program to issubset and issuperset.

```
In [94]: set1={1,2,3,4,5,6,7}
         set2={3,4,5}
         print(set2.issubset(set1))
         print(set1.issuperset(set2))
```

```
True
True
```

12. Write a Python program to create set difference.

```
In [102]: set1={1,2,3,4,5,6,7}
          set2={3,4,5,9,8}
          set3=set1.difference(set2)
          set3
```

```
Out[102]: {1, 2, 6, 7}
```

13. Write a Python program to create a symmetric difference.

```
In [103]: set1={1,2,3,4,5,6,7}
          set2={3,4,5,9,8}
          symmetricdifference=(set1-set2).union(set2-set1)
          symmetricdifference
```

```
Out[103]: {1, 2, 6, 7, 8, 9}
```

In []: