

## LAB -6

1.Create an empty dictionary.

In [2]:

```
dict1={}
dict1
```

Out[2]:

```
{}
```

2.Create the following dictionary

Key value

A 10

B 20

In [11]:

```
dict1={"A":10,"B":20}
dict1
```

Out[11]:

```
{'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 [1]:

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

Out[1]:

```
{'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 [70]:

```
sets={1,2,3,1}  
sets
```

Out[70]:

{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 [ ]: