In [17]:
```
#creating dictionaries
#empty dictionary
empty_dict = {}
print(empty_dict)

#dictionary with key-value pairs
student = {'name':'Tarun','age':24,'grade':'A+'}
print(student)

#dictionary with mixed data types
mixed_dic = {
    'name':'Harini',
    'age' : 21,
    'marks' : [80,90,95]
}
mixed_dic
```

```
{}
{'name': 'Tarun', 'age': 24, 'grade': 'A+'}
```

Out[17]:
```
{'name': 'Harini', 'age': 21, 'marks': [80, 90, 95]}
```

In [19]:
```
#accessing value
student = {
    'name':'Harini',
    'age': 21,
    'location':'hyd',
    'marks': [80,90,95]
}
print(student['name'])
print(student['location'])
```

```
Harini
hyd
```

In [21]:
```
#modifying and adding entries
student = {
    'name':'Harini',
    'age': 21,
    'location':'hyd',
    'marks': [80,90,95]
}
#modifying an entry
student['age']=28
student
#adding a new entry
student['gender'] = 'female'
student['qualification'] = 'B.tech'
student
```

Out[21]:
```
{'name': 'Harini',
 'age': 28,
 'location': 'hyd',
 'marks': [80, 90, 95],
 'gender': 'female',
 'qualification': 'B.tech'}
```

In [31]:
```
#dictionary method
#get()
student = {'name': 'Harini',
 'age': 28,
 'location': 'hyd',
 'marks': [80, 90, 95],
 'gender': 'female',
 'qualification': 'B.tech'}
g = student.get('age')
h = student.get('location','no value')
i = student.get('qualification','not specified')
print(g)
print(h)
print(i)

#keys()
keys = student.keys()
print(keys)

#values()
values = student.values()
print(values)

#items()
items = student.items()
print(items)

#pop()
mixed_dic = {
    'name':'tarun',
    'age':23,
    'grades' : [78,80,99]
}
name = mixed_dic.pop('name')
print(name)

#popitem()
item = mixed_dic.popitem()
print(item)

#update()
new_data = {'location':'kerala','message':'all the best'}
a = mixed_dic.update(new_data)
print(student)

#len()
my_elements ={'name':'surya','age':21,'branch':'computer science', 'college'
print(len(my_elements))
```

```
#clear()
my_elements.clear()
print(my_elements)

#copy()
my_elements ={'name':'surya','age':21,'branch':'computer science', 'college'
copy_elements = my_elements.copy()
print(copy_elements)

#setdefault(key,value)   #used to retrieve the value of a specified key. If
stu = {'jai':20,'roy':25,'app':29}
x = stu.setdefault('jai')
print(stu)
z = stu.setdefault('bee',40)
print(stu)
y = stu.setdefault('zoo')
print(stu)

#fromkeys(iterable,value)   #used to create a new dictionary from a list of
list = [1,2,3,4]
x = dict.fromkeys(list)
print(x)
```

```
28
hyd
B.tech
dict_keys(['name', 'age', 'location', 'marks', 'gender', 'qualification'])
dict_values(['Harini', 28, 'hyd', [80, 90, 95], 'female', 'B.tech'])
dict_items([('name', 'Harini'), ('age', 28), ('location', 'hyd'), ('marks',
[80, 90, 95]), ('gender', 'female'), ('qualification', 'B.tech')])
tarun
('grades', [78, 80, 99])
{'name': 'Harini', 'age': 28, 'location': 'hyd', 'marks': [80, 90, 95], 'gen
der': 'female', 'qualification': 'B.tech'}
4
{}
{'name': 'surya', 'age': 21, 'branch': 'computer science', 'college': 'mre
c'}
{'jai': 20, 'roy': 25, 'app': 29}
{'jai': 20, 'roy': 25, 'app': 29, 'bee': 40}
{'jai': 20, 'roy': 25, 'app': 29, 'bee': 40, 'zoo': None}
{1: None, 2: None, 3: None, 4: None}
```

In [ ]: