Set creation

```
In [2]: myset = {1,2,3,4,5}
        myset
```

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

```
In [3]: len(myset)
```

```
Out[3]: 5
```

```
In [4]: my_set = {1,1,2,2,3,3,4,4,5,5}
        my_set
```

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

```
In [5]: set1 = {2.3,45.6,6.7,3.4,1.4}
        set1
```

```
Out[5]: {1.4, 2.3, 3.4, 6.7, 45.6}
```

```
In [6]: set2= {'asif', 'john', 'tyrion'}
        set2
```

```
Out[6]: {'asif', 'john', 'tyrion'}
```

```
In [7]: set3 = {10,20,'HOLA',(11,12,13)}
        set3
```

```
Out[7]: {(11, 12, 13), 10, 20, 'HOLA'}
```

```
In [8]: set4 = {10,20,'HOLA',[11,12,13]}
        set4
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[8], line 1
----> 1 set4 = {10,20,'HOLA',[11,12,13]}
      2 set4

TypeError: unhashable type: 'list'
```

```
In [ ]: set5 = set()
        print(type(set5))
```

```
In [ ]: my_set1 = set(('one','two','three','four'))
        my_set1
```

```
In [ ]: set1
```

```
In [93]: for i in (set1):
             print(i)
```

```
1.4
2.3
3.4
6.7
45.6
```

In [95]:
```python
for i in enumerate(set1):
    print(i)
```

```
(0, 1.4)
(1, 2.3)
(2, 3.4)
(3, 6.7)
(4, 45.6)
```

set membership

In [98]:
```python
set1
```

Out[98]: `{1.4, 2.3, 3.4, 6.7, 45.6}`

In [100…
```python
1.4 in set1
```

Out[100… `True`

In [102…
```python
myset
```

Out[102… `{1, 2, 3, 4, 5}`

In [104…
```python
2 in myset
```

Out[104… `True`

In [106…
```python
6 in myset
```

Out[106… `False`

In [108…
```python
4.5 in set1
```

Out[108… `False`

In [110…
```python
6 in myset
print('six is not present in myset')
```

`six is not present in myset`

In [112…
```python
if 2 in myset:
    print('Two is present in the myset')
```

`Two is present in the myset`

In [114…
```python
myset.add(1)
```

In [116…
```python
myset
```

Out[116… `{1, 2, 3, 4, 5}`

```
In [118…    myset
```

```
Out[118…    {1, 2, 3, 4, 5}
```

```
In [120…    myset.remove(1)
```

```
In [122…    myset
```

```
Out[122…    {2, 3, 4, 5}
```

```
In [124…    myset.add(6)
```

```
In [126…    myset
```

```
Out[126…    {2, 3, 4, 5, 6}
```

```
In [367…    myset.update('one' , 'two ')
```

```
In [369…    myset
```

```
Out[369…    {' ', 2, 3, 4, 5, 6, 'e', 'n', 'o', 't', 'w'}
```

```
In [371…    set2
```

```
Out[371…    {'a', 'asif', 'e', 'john', 'l', 'o', 'p', 's', 'tyrion'}
```

```
In [373…    set2.update('hello','please')
```

```
In [375…    set2
```

```
Out[375…    {'a', 'asif', 'e', 'h', 'john', 'l', 'o', 'p', 's', 'tyrion'}
```

```
In [377…    set2.remove('h')
            set2
```

```
Out[377…    {'a', 'asif', 'e', 'john', 'l', 'o', 'p', 's', 'tyrion'}
```

```
In [379…    set1
```

```
Out[379…    {1.4, 2.3, 3.4, 6.7, 45.6}
```

```
In [381…    set2
```

```
Out[381…    {'a', 'asif', 'e', 'john', 'l', 'o', 'p', 's', 'tyrion'}
```

```
In [383…    set3
```

```
Out[383…   {(11, 12, 13),
            10,
            20,
            'HOLA',
            'a',
            'asif',
            'e',
            'john',
            'l',
            'o',
            'p',
            's',
            'tyrion'}
```

```
In [385…   set1.union(set3) #union is for combine both the veriables
```

```
Out[385…   {(11, 12, 13),
            1.4,
            10,
            2.3,
            20,
            3.4,
            45.6,
            6.7,
            'HOLA',
            'a',
            'asif',
            'e',
            'john',
            'l',
            'o',
            'p',
            's',
            'tyrion'}
```

```
In [ ]:
```

```
In [149…   set1
```

```
Out[149…   {1.4, 2.3, 3.4, 6.7, 45.6}
```

```
In [151…   set3
```

```
Out[151…   {(11, 12, 13), 10, 20, 'HOLA'}
```

```
In [153…   set1
```

```
Out[153…   {1.4, 2.3, 3.4, 6.7, 45.6}
```

```
In [155…   set3.update(set2)
```

```
In [157…   set3
```

```
Out[157…    {(11, 12, 13),
             10,
             20,
             'HOLA',
             'a',
             'asif',
             'e',
             'john',
             'l',
             'o',
             'p',
             's',
             'tyrion'}
```

```
In [159…    a = {1,2,3,4,5,6,7}
            b = {4,5,6,7,8,9,10}
            c = {10,11,12,13,14}
```

```
In [161…    a.intersection(b)
```

```
Out[161…    {4, 5, 6, 7}
```

```
In [163…    a & b
```

```
Out[163…    {4, 5, 6, 7}
```

```
In [165…    a.difference(b)
```

```
Out[165…    {1, 2, 3}
```

```
In [167…    a.symmetric_difference(b)
```

```
Out[167…    {1, 2, 3, 8, 9, 10}
```

```
In [169…    a | b
```

```
Out[169…    {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
```

```
In [171…    a.union(b)
```

```
Out[171…    {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
```

```
In [173…    a.remove(4)
            a
```

```
Out[173…    {1, 2, 3, 5, 6, 7}
```

```
In [175…    a.update(b)
            a
```

```
Out[175…    {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
```

```
In [177…    b
```

```
Out[177…    {4, 5, 6, 7, 8, 9, 10}
```

In [179...   `a.issuperset(b)`

Out[179...   True

In [181...   `a.issubset(b)`

Out[181...   False

In [183...   `b.issubset(a)`

Out[183...   True

In [185...   `a.isdisjoint(c)`

Out[185...   False

In [187...   `b.isdisjoint(c)`

Out[187...   False

In [189...   `a.clear()`

In [191...   `a`

Out[191...   set()

In [193...   `del a`

In [195...   `a`

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[195], line 1
----> 1 a

NameError: name 'a' is not defined
```

In [197...   `b`

Out[197...   {4, 5, 6, 7, 8, 9, 10}

In [199...   `a = b.copy()`

In [201...   `a`

Out[201...   {4, 5, 6, 7, 8, 9, 10}

In [203...   `id(a)`

Out[203...   1621262301472

In [205...   `id(b)`

Out[205...   1621262300800

In [207… `d = c # create a new referance that's why the address are same`

In [209… `d`

Out[209… `{10, 11, 12, 13, 14}`

In [211… `id(d),id(c)`

Out[211… `(1621262300352, 1621262300352)`

In [213… `my_set`

Out[213… `{1, 2, 3, 4, 5}`

In [215…
```
my = {'one','two','three','four','five','six'}
my
```

Out[215… `{'five', 'four', 'one', 'six', 'three', 'two'}`

In [217…
```
a1 = {1,2,3,4,5,6,7}
b1 = {4,5,6,7,8,9,10}
c1 = {10,11,12,13,14}
```

In [219… `a1.update(b1,c1)`

In [221… `b1`

Out[221… `{4, 5, 6, 7, 8, 9, 10}`

In [223… `a1`

Out[223… `{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14}`

In [225… `sum(a1)`

Out[225… `105`

In [227… `max(a1)`

Out[227… `14`

In [229… `min(a1)`

Out[229… `1`

In [231… `len(a1)`

Out[231… `14`

In [233… `list(enumerate(a1))`

```
Out[233…   [(0, 1),
            (1, 2),
            (2, 3),
            (3, 4),
            (4, 5),
            (5, 6),
            (6, 7),
            (7, 8),
            (8, 9),
            (9, 10),
            (10, 11),
            (11, 12),
            (12, 13),
            (13, 14)]
```

In [ ]:

In [236…
```python
sorted(a1)
```

Out[236…   `[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14]`

In [238…
```python
b1
```

Out[238…   `{4, 5, 6, 7, 8, 9, 10}`

In [240…
```python
sorted(b1, reverse= True)
```

Out[240…   `[10, 9, 8, 7, 6, 5, 4]`

In [242…
```python
d = sorted(b1, reverse= True)
d
```

Out[242…   `[10, 9, 8, 7, 6, 5, 4]`

In [244…
```python
sorted(d)
```

Out[244…   `[4, 5, 6, 7, 8, 9, 10]`

Dict

In [247…
```python
d = {}
print(type(d))
```

```
<class 'dict'>
```

In [249…
```python
d1 = {}
d1
```

Out[249…   `{}`

In [251…
```python
d1 = {1:'one',2:'two',3:'three',4:'four',5:'five'}
d1
```

Out[251…   `{1: 'one', 2: 'two', 3: 'three', 4: 'four', 5: 'five'}`

```
In [253...  d2 = {1:2, 2.4:5.4, 'one':'two', 1+2j:3+4j, True:False}
           d2
```

```
Out[253...  {1: False, 2.4: 5.4, 'one': 'two', (1+2j): (3+4j)}
```

```
In [255...  d2.keys()
```

```
Out[255...  dict_keys([1, 2.4, 'one', (1+2j)])
```

```
In [257...  d2.keys()
```

```
Out[257...  dict_keys([1, 2.4, 'one', (1+2j)])
```

```
In [259...  d2.values()
```

```
Out[259...  dict_values([False, 5.4, 'two', (3+4j)])
```

```
In [261...  d1.keys()
```

```
Out[261...  dict_keys([1, 2, 3, 4, 5])
```

```
In [263...  d1.values()
```

```
Out[263...  dict_values(['one', 'two', 'three', 'four', 'five'])
```

```
In [265...  d1.items()
```

```
Out[265...  dict_items([(1, 'one'), (2, 'two'), (3, 'three'), (4, 'four'), (5, 'five')])
```

```
In [267...  len(d1)
```

```
Out[267...  5
```

```
In [269...  mydect = {2:'one', 4:'four', a: ['jphn','sam','vam']}
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[269], line 1
----> 1 mydect = {2:'one', 4:'four', a: ['jphn','sam','vam']}

TypeError: unhashable type: 'set'
```

```
In [271...  mydect = {2:'one', 4:'four', 'a': ['jphn','sam','vam']}
```

```
In [273...  mydect
```

```
Out[273...  {2: 'one', 4: 'four', 'a': ['jphn', 'sam', 'vam']}
```

```
In [275...  mydict = {1:'one', 2:'two','A':{'Name':'asif','Age' :20}, 'B':('bat','cat','hat'
           mydict
```

```
Out[275...  {1: 'one',
            2: 'two',
            'A': {'Name': 'asif', 'Age': 20},
            'B': ('bat', 'cat', 'hat')}
```

```
In [277…  hey = {1,2,3,4}
          mydict3 = dict.fromkeys(hey)
```

```
In [279…  mydict3
```

```
Out[279…  {1: None, 2: None, 3: None, 4: None}
```

```
In [388…  hey = {'a','b','c','d'}
          value = 40
          mydict3 = dict.fromkeys(hey,value)
          mydict3
```

```
Out[388…  {'a': 40, 'c': 40, 'b': 40, 'd': 40}
```

```
In [283…  hey = {'a','b','c','d'}
          value = 40
          mydict3 = dict.fromkeys(hey, value)
          mydict3
```

```
Out[283…  {'a': 40, 'c': 40, 'b': 40, 'd': 40}
```

```
In [392…  hey = {'a','b','c','d'}
          value = 20,30,40
          mydict3 = dict.fromkeys(hey, value)
          mydict3
```

```
Out[392…  {'a': (20, 30, 40), 'c': (20, 30, 40), 'b': (20, 30, 40), 'd': (20, 30, 40)}
```

```
In [394…  mydict3
```

```
Out[394…  {'a': (20, 30, 40), 'c': (20, 30, 40), 'b': (20, 30, 40), 'd': (20, 30, 40)}
```

```
In [288…  mydict3['a']
```

```
Out[288…  (20, 30, 40)
```

```
In [290…  mydict3['b']
```

```
Out[290…  (20, 30, 40)
```

```
In [292…      mydict5 = {'Name': 'asif', 'Age':25, 'ID':706758 , 'Job': 'Data Analyst'}
          mydict5
```

```
Out[292…  {'Name': 'asif', 'Age': 25, 'ID': 706758, 'Job': 'Data Analyst'}
```

```
In [400…  mydict5['Name'] = 'aron'
```

```
In [402…  mydict5
```

```
Out[402…  {'Name': 'aron', 'Age': 25, 'ID': 706758, 'Job': 'DataAnalyst'}
```

```
In [398…  mydict5["Age"]
```

```
Out[398…  25
```

In [298…
```python
mydict5["Job"]
```

Out[298…
```
'Data Analyst'
```

In [300…
```python
    mydict5 = {'Name': 'asif', 'Age':25, 'ID':706758 , 'Job': 'Data Analyst'}
mydict5
```

Out[300…
```
{'Name': 'asif', 'Age': 25, 'ID': 706758, 'Job': 'Data Analyst'}
```

In [302…
```python
mydict5['Name'] = 'Aran'
mydict5
```

Out[302…
```
{'Name': 'Aran', 'Age': 25, 'ID': 706758, 'Job': 'Data Analyst'}
```

In [304…
```python
mydict5["Age"] = 78
mydict5
```

Out[304…
```
{'Name': 'Aran', 'Age': 78, 'ID': 706758, 'Job': 'Data Analyst'}
```

In [306…
```python
dict1 = {'Age': 90}
mydict5.update(dict1)
mydict5
```

Out[306…
```
{'Name': 'Aran', 'Age': 90, 'ID': 706758, 'Job': 'Data Analyst'}
```

In [308…
```python
mydict5['Address'] = 'Delhi'
mydict5
```

Out[308…
```
{'Name': 'Aran',
 'Age': 90,
 'ID': 706758,
 'Job': 'Data Analyst',
 'Address': 'Delhi'}
```

In [310…
```python
mydict5.pop('Age')
mydict5
```

Out[310…
```
{'Name': 'Aran', 'ID': 706758, 'Job': 'Data Analyst', 'Address': 'Delhi'}
```

In [312…
```python
mydict5.popitem()
```

Out[312…
```
('Address', 'Delhi')
```

In [314…
```python
del(mydict5['ID'])
mydict5
```

Out[314…
```
{'Name': 'Aran', 'Job': 'Data Analyst'}
```

In [316…
```python
mydict5
```

Out[316…
```
{'Name': 'Aran', 'Job': 'Data Analyst'}
```

In [318…
```python
mydict5.values()
mydict5
```

Out[318…
```
{'Name': 'Aran', 'Job': 'Data Analyst'}
```

In [320…   ```python
           mydict5.clear()
           ```

In [322…   ```python
           mydict5
           ```

Out[322…   ```
           {}
           ```

In [324…   ```python
           mydict5 = mydict.copy()
           ```

In [326…   ```python
           mydict5
           ```

Out[326…   ```
           {1: 'one',
            2: 'two',
            'A': {'Name': 'asif', 'Age': 20},
            'B': ('bat', 'cat', 'hat')}
           ```

In [328…   ```python
           mydict
           ```

Out[328…   ```
           {1: 'one',
            2: 'two',
            'A': {'Name': 'asif', 'Age': 20},
            'B': ('bat', 'cat', 'hat')}
           ```

In [330…   ```python
           d1 = {1:'one',2:'two',3:'three',4:'four',5:'five'}
           d1
           ```

Out[330…   ```
           {1: 'one', 2: 'two', 3: 'three', 4: 'four', 5: 'five'}
           ```

In [332…   ```python
           d5 = d1
           ```

In [334…   ```python
           d5
           ```

Out[334…   ```
           {1: 'one', 2: 'two', 3: 'three', 4: 'four', 5: 'five'}
           ```

In [336…   ```python
           id(d5),id(d1)
           ```

Out[336…   ```
           (1621276411264, 1621276411264)
           ```

In [338…   ```python
           d6 = d5.copy()
           ```

In [340…   ```python
           id(d6),id(d5)
           ```

Out[340…   ```
           (1621276590336, 1621276411264)
           ```

In [342…   ```python
           d5
           ```

Out[342…   ```
           {1: 'one', 2: 'two', 3: 'three', 4: 'four', 5: 'five'}
           ```

In [344…   ```python
           for i in d5:
               print(i)
           ```

           ```
           1
           2
           3
           4
           5
           ```

In [346…
```python
for i in d5:
    print(i, ':',d5[i])
```

```
1 : one
2 : two
3 : three
4 : four
5 : five
```

In [348…
```python
for i in d5:
    print(d5[i])
```

```
one
two
three
four
five
```

In [350…
```python
mydict = {'Name' : 'Asif', 'Age' :25, 'ID' :706758 , 'Job' : 'Data Analyst'}
mydict
```

Out[350…   `{'Name': 'Asif', 'Age': 25, 'ID': 706758, 'Job': 'Data Analyst'}`

In [352…
```python
for i in mydict:
    print(mydict[i])
```

```
Asif
25
706758
Data Analyst
```

In [354…
```python
for i in mydict:
    print(i)
```

```
Name
Age
ID
Job
```

In [356…
```python
for i in mydict:
    print(i,':',mydict[i])
```

```
Name : Asif
Age : 25
ID : 706758
Job : Data Analyst
```

In [358…
```python
    mydict5 = {'Name':'Asif' ,'Age':25, 'ID':706758 , 'Job': 'DataAnalyst'}
mydict5
```

Out[358…   `{'Name': 'Asif', 'Age': 25, 'ID': 706758, 'Job': 'DataAnalyst'}`

In [360…
```python
all(mydict)
```

Out[360…   True

In [362…
```python
any(mydict)
```

Out[362…   True

```
In [404…    dict ={}
            dict
```

```
Out[404…    {}
```

```
In [406…    type(dict)
```

```
Out[406…    dict
```

```
In [412…    dict1 = {1:'one',2:'two',3:'three',4:'four'}
            dict1
```

```
Out[412…    {1: 'one', 2: 'two', 3: 'three', 4: 'four'}
```

```
In [414…    dict1.keys()
```

```
Out[414…    dict_keys([1, 2, 3, 4])
```

```
In [422…    dict1.values()
```

```
Out[422…    dict_values(['one', 'two', 'three', 'four'])
```

```
In [420…    dict1.items()
```

```
Out[420…    dict_items([(1, 'one'), (2, 'two'), (3, 'three'), (4, 'four')])
```

```
In [432…    for i in enumerate(dict1):
                print(i)
```

```
(0, 1)
(1, 2)
(2, 3)
(3, 4)
```

```
In [434…    dict1
```

```
Out[434…    {1: 'one', 2: 'two', 3: 'three', 4: 'four'}
```

```
In [436…    dict1.pop(1)
```

```
Out[436…    'one'
```

```
In [440…    dict1.get(1)
            dict1
```

```
Out[440…    {2: 'two', 3: 'three', 4: 'four'}
```

```
In [442…    dict2 = {1: 'one', 2: 'two', 'A':{ 'three', 'four'}, 'B':('cat','rat')}
```

```
In [444…    dict2
```

```
Out[444…    {1: 'one', 2: 'two', 'A': {'four', 'three'}, 'B': ('cat', 'rat')}
```

```
In [450…    dict2['A']
```

```
Out[450…    {'four', 'three'}
```

In [452...   ```python
              dict2.items()
              ```

Out[452...   ```
              dict_items([(1, 'one'), (2, 'two'), ('A', {'four', 'three'}), ('B', ('cat', 'ra
              t'))])
              ```

In [454...    ```python
              dict2[1] = 'five'
              ```

In [456...   ```python
              dict2
              ```

Out[456...   ```
              {1: 'five', 2: 'two', 'A': {'four', 'three'}, 'B': ('cat', 'rat')}
              ```

In [458...   ```python
              mydict
              ```

Out[458...   ```
              {'Name': 'Asif', 'Age': 25, 'ID': 706758, 'Job': 'Data Analyst'}
              ```

In [460...   ```python
              d = {'job': 'Dataanalyst'}
              dict2.update(d)
              dict2
              ```

Out[460...   ```
              {1: 'five',
               2: 'two',
               'A': {'four', 'three'},
               'B': ('cat', 'rat'),
               'job': 'Dataanalyst'}
              ```

In [462...   ```python
              dict2
              ```

Out[462...   ```
              {1: 'five',
               2: 'two',
               'A': {'four', 'three'},
               'B': ('cat', 'rat'),
               'job': 'Dataanalyst'}
              ```

In [468...   ```python
              dict2.update()
              ```

In [470...    ```python
              dict2
              ```

Out[470...   ```
              {1: 'five',
               2: 'two',
               'A': {'four', 'three'},
               'B': ('cat', 'rat'),
               'job': 'Dataanalyst'}
              ```

In [472...    ```python
              dict2['sys'] = 'version'
              ```

In [474...   ```python
              dict2
              ```

Out[474...   ```
              {1: 'five',
               2: 'two',
               'A': {'four', 'three'},
               'B': ('cat', 'rat'),
               'job': 'Dataanalyst',
               'sys': 'version'}
              ```

In [478...   ```python
              'job' in dict2
              ```

Out[478...   ```
              True
              ```

In [480…   `all(dict2)`

Out[480…   True

In [482…   `any(dict2)`

Out[482…   True

In [ ]: