In [1]:

```
print("SET")
#duplicate not allowed
set_1 = {"Mango", "Cherry", "Berry",'Apple', 'Watermelon', 'Strawberry'}
set_2 = {"Mango", "Cherry", "Berry",'Apple', 'Watermelon', 'Strawberry',"Mango
set_3 = {12, 87, 65, 655, 90, 83}
set_4 = {12.09, 87.65, 65.07, 655.12, 90.24, 83.76}
set_5 = {True, False, True, False}
set_6 = {"Sharmin", 40, True, 1.09}



print("\nSET 1 =", set_1)
print("\nSET 2 =", set_2)
print("\nSET 3 =", set_3)
print("\nSET 4 =", set_4)
print("\nSET 5 =", set_5)
print("\nSET 6 =", set_6)
```

```
SET

SET 1 = {'Cherry', 'Berry', 'Strawberry', 'Apple', 'Watermelon', 'Mango'}

SET 2 = {'Cherry', 'Berry', 'Strawberry', 'Apple', 'Watermelon', 'Mango'}

SET 3 = {65, 83, 87, 90, 12, 655}

SET 4 = {65.07, 83.76, 87.65, 90.24, 12.09, 655.12}

SET 5 = {False, True}

SET 6 = {40, True, 'Sharmin', 1.09}
```

In [11]:

```
print("SET - USING CONSTRUCTOR")

#DOUBLE BRACKET IS COMPULSARY
set_1 = set(("Mango", "Cherry", "Berry",'Apple', 'Watermelon', 'Strawberry'))
set_2 = set(("Mango", "Cherry", "Berry",'Apple', 'Watermelon', 'Strawberry',"M
set_3 = set((12, 87, 65, 655, 90, 83))
set_4 = set((12.09, 87.65, 65.07, 655.12, 90.24, 83.76))
set_5 = set((True, False, True, False))
set_6 = set(("Sharmin", 40, True, 1.09))


print("\nSET 1 =", set_1)
print("\nSET 2 =", set_2)
print("\nSET 3 =", set_3)
print("\nSET 4 =", set_4)
print("\nSET 5 =", set_5)
print("\nSET 6 =", set_6)
```

```
SET - USING CONSTRUCTOR

SET 1 = {'Apple', 'Mango', 'Berry', 'Watermelon', 'Cherry', 'Strawberry'}

SET 2 = {'Apple', 'Mango', 'Berry', 'Watermelon', 'Cherry', 'Strawberry'}

SET 3 = {65, 12, 655, 83, 87, 90}

SET 4 = {65.07, 12.09, 655.12, 83.76, 87.65, 90.24}

SET 5 = {False, True}

SET 6 = {40, True, 'Sharmin', 1.09}
```

In [9]:

```
print("SET - LENGTH & TYPE ")

set_1 = {"Mango", "Cherry", "Berry",'Apple', 'Watermelon', 'Strawberry'}
set_2 = {"Sharmin"}


print("\nSET 1\t\t=", set_1)
print("LENGTH OF SET\t=", len(set_1))
print("TYPE\t\t=", type(set_1))
print("\n")

print("\nSET 2\t\t=", set_2)
print("LENGTH OF SET\t=", len(set_2))
print("TYPE\t\t=", type(set_2))
print("\n")
```

```
SET - LENGTH & TYPE 

SET 1           = {'Watermelon', 'Apple', 'Strawberry', 'Cherry', 'Mango', 'B
erry'}
LENGTH OF SET   = 6
TYPE            = <class 'set'>



SET 2           = {'Sharmin'}
LENGTH OF SET   = 1
TYPE            = <class 'set'>
```

In [12]:
```
print("SET - ADD ELEMENT IN SET ")

set_1 = {"Mango", "Cherry", "Berry",'Apple', 'Watermelon', 'Strawberry'}

print("\nSET 1 =", set_1)
set_1.add("Orange")
set_1.add("Banana")
set_1.append("kiwi")
#append() & insert() method will not work with set

print("\nSET 1 =", set_1)
```

```
SET - ADD ELEMENT IN SET

SET 1 = {'Watermelon', 'Apple', 'Strawberry', 'Cherry', 'Mango', 'Berry'}

---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[12], line 8
      6 set_1.add("Orange")
      7 set_1.add("Banana")
----> 8 set_1.append("kiwi")
      9 #append() & insert() method will not work with set
     11 print("\nSET 1 =", set_1)

AttributeError: 'set' object has no attribute 'append'
```

In [5]:

```
print("SET - REMOVE, DELETE, CLEAR ELEMENT IN SET ")

set_1 = {"Mango", "Cherry", "Berry",'Apple', 'Watermelon', 'Strawberry'}
print("\nSET 1 =", set_1)


set_1.remove("Apple")
print("\nSET 1 AFTER REMOVING =", set_1)

varA = set_1.pop()
print("\nSET 1 AFTER POPPING =", set_1)
print("\nREMOVED ITEM IS  =", varA)

varB = set_1.discard("Strawberry")
print("\nSET 1 AFTER DISCARDING =", set_1)

print("\nvarB  =", varB)

set_1.clear()
print("\nSET 1 AFTER CLEARING =", set_1)

del set_1

print("\nSET 1 AFTER DELETING =", set_1)

#
```

```
SET - REMOVE, DELETE, CLEAR ELEMENT IN SET

SET 1 = {'Cherry', 'Berry', 'Strawberry', 'Apple', 'Watermelon', 'Mango'}

SET 1 AFTER REMOVING = {'Cherry', 'Berry', 'Strawberry', 'Watermelon', 'Mang
o'}

SET 1 AFTER POPPING = {'Berry', 'Strawberry', 'Watermelon', 'Mango'}

REMOVED ITEM IS  = Cherry

SET 1 AFTER DISCARDING = {'Berry', 'Watermelon', 'Mango'}

varB  = None

SET 1 AFTER CLEARING = set()
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[5], line 24
     20 print("\nSET 1 AFTER CLEARING =", set_1)
     22 del set_1
---> 24 print("\nSET 1 AFTER DELETING =", set_1)

NameError: name 'set_1' is not defined
```

In [7]:

```
print("SET - SHOWING ELEMENT OF SET USING FOR_IN LOOP ")

set_1 = {"Mango", "Cherry", "Berry",'Apple', 'Watermelon', 'Strawberry'}
print("\nSET 1 =", set_1)
print("\n")

for item in set_1:
      print("ELEMENT =" , item)
```

```
SET - SHOWING ELEMENT OF SET USING FOR_IN LOOP

SET 1 = {'Watermelon', 'Apple', 'Strawberry', 'Cherry', 'Mango', 'Berry'}


ELEMENT = Watermelon
ELEMENT = Apple
ELEMENT = Strawberry
ELEMENT = Cherry
ELEMENT = Mango
ELEMENT = Berry
```

In [6]:

```python
print("SET - ADDING ELEMENT INTO OTHER SET USING FOR IN LOOP  ")

set_1 = {"Mango", "Cherry", "Berry",'Apple', 'Watermelon', 'Strawberry'}
print("\nSET 1\t=", set_1)

for item in set_1:
    print("ELEMENT =" , item)

set_2 = {"Banana", "Cherry"}
for item in set_1:
    if item == "Apple":
        set_2.add(item)

print("\nSET 2\t=", set_2)

#SET SHOULD HAVE ATLEAST ONE ELEMNT
set_3 = {}
for item in set_1:
    if item == "Apple":
        set_3.add(item)

print("\nSET 3\t=", set_3)
```

```
SET - ADDING ELEMENT INTO OTHER SET USING FOR IN LOOP

SET 1   = {'Watermelon', 'Apple', 'Strawberry', 'Cherry', 'Mango', 'Berry'}
ELEMENT = Watermelon
ELEMENT = Apple
ELEMENT = Strawberry
ELEMENT = Cherry
ELEMENT = Mango
ELEMENT = Berry

SET 2   = {'Banana', 'Apple', 'Cherry'}

---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[6], line 20
     18 for item in set_1:
     19     if item == "Apple":
---> 20         set_3.add(item)
     22 print("\nSET 3\t=", set_3)

AttributeError: 'dict' object has no attribute 'add'
```

In [16]:

```
print("SET - ADD LIST/TUPLE/SET  WITH A SET (UPDATE & UNION)")

set_1 = {"Mango", "Cherry", "Berry",'Apple','Strawberry'}
set_2 = {"Banana", "Orange", "Avacado", "KIwi"}
print("\nSET 1\t\t\t=", set_1)
print("\nSET 2\t\t\t=", set_2)
set_1.update(set_2)
print("\nSET AFTER JOIN WITH SET =", set_1)


set_1 = {"Mango", "Cherry", "Berry",'Apple', 'Strawberry'}
list_1 = ["Banana", "Orange", "Avacado", "KIwi"]
print("\nSET 1\t\t\t=", set_1)
print("\nLIST 1\t\t\t=", list_1)
set_1.update(list_1)
print("\nSET AFTER JOIN WITH LIST =", set_1)


set_1 = {"Mango", "Cherry", "Berry",'Apple', 'Strawberry'}
tuple_1 = ("Banana", "Orange", "Avacado", "KIwi")
print("\nSET 1\t\t\t=", set_1)
print("\nTUPLE 1\t\t\t=", tuple_1)
set_1.update(tuple_1)
print("\nSET AFTER JOIN WITH TUPLE =", set_1)


#UNION() RETURN A NEW SET
set_1 = {"Mango", "Cherry", "Berry",'Apple','Strawberry'}
set_2 = {"Banana", "Orange", "Avacado", "KIwi"}
print("\nSET 1\t\t\t=", set_1)
print("\nSET 2\t\t\t=", set_2)
set_3 = set_1.union(set_2)
print("\nSET AFTER UNIONING\t=", set_3)

#UPDATE() & UNION() EXCLUDE DUPLICATE ITEMS
```

```
SET - ADD LIST/TUPLE/SET  WITH A SET (UPDATE & UNION)

SET 1                  = {'Apple', 'Strawberry', 'Cherry', 'Mango', 'Berry'}

SET 2                  = {'Avacado', 'Banana', 'KIwi', 'Orange'}

SET AFTER JOIN WITH SET = {'Apple', 'Mango', 'Avacado', 'Berry', 'KIwi', 'Che
rry', 'Banana', 'Strawberry', 'Orange'}

SET 1                  = {'Apple', 'Strawberry', 'Cherry', 'Mango', 'Berry'}

LIST 1                 = ['Banana', 'Orange', 'Avacado', 'KIwi']

SET AFTER JOIN WITH LIST = {'Apple', 'Mango', 'Avacado', 'Berry', 'Cherry',
'Orange', 'KIwi', 'Banana', 'Strawberry'}

SET 1                  = {'Apple', 'Strawberry', 'Cherry', 'Mango', 'Berry'}

TUPLE 1                = ('Banana', 'Orange', 'Avacado', 'KIwi')

SET AFTER JOIN WITH TUPLE = {'Apple', 'Mango', 'Avacado', 'Berry', 'Cherry',
'Orange', 'KIwi', 'Banana', 'Strawberry'}

SET 1                  = {'Apple', 'Strawberry', 'Cherry', 'Mango', 'Berry'}

SET 2                  = {'Avacado', 'Banana', 'KIwi', 'Orange'}

SET AFTER UNIONING     = {'Apple', 'Mango', 'Avacado', 'Berry', 'KIwi', 'Che
rry', 'Banana', 'Strawberry', 'Orange'}
```

In [9]:

```
print("SET - INTERSECTION")

set_1 = {"Mango", "Cherry", "Berry",'Apple','Strawberry', "Litchi"}
set_2 = {"Banana", "Orange", "Avacado", "KIwi","Berry","Litchi"}
print("\nSET 1\t\t\t\t=", set_1)
print("\nSET 2\t\t\t\t=", set_2)

set_3 = set_1.intersection(set_2)
print("\nSET 3 AFTER INTERSECTION\t=", set_3)


set_1.intersection_update(set_2)
print("\nSET 1 AFTER INTERSECTION UPDATE\t=", set_1)
```

```
SET - INTERSECTION

SET 1                           = {'Cherry', 'Berry', 'Strawberry', 'Apple',
'Litchi', 'Mango'}

SET 2                           = {'Avacado', 'Orange', 'Berry', 'Banana', 'L
itchi', 'KIwi'}

SET 3 AFTER INTERSECTION        = {'Litchi', 'Berry'}

SET 1 AFTER INTERSECTION UPDATE = {'Litchi', 'Berry'}
```

In [10]:

```
print("SET - SYMMETRIC DIFFERENCE")

set_1 = {"Mango", "Cherry", "Berry",'Apple','Strawberry', "Litchi"}
set_2 = {"Banana", "Orange", "Avacado", "KIwi","Berry","Litchi"}
print("\nSET 1\t\t\t\t\t=", set_1)
print("\nSET 2\t\t\t\t\t=", set_2)

set_3 = set_1.symmetric_difference(set_2)
print("\nSET 3 AFTER SYMMETRIC DIFFERENCE\t=", set_3)



set_1.symmetric_difference_update(set_2)
print("\nSET 1 AFTER SYMMETRIC DIFFERENCE UPDATE\t=", set_1)
```

```
SET - SYMMETRIC DIFFERENCE

SET 1                                   = {'Cherry', 'Berry', 'Strawberry',
'Apple', 'Litchi', 'Mango'}

SET 2                                   = {'Avacado', 'Orange', 'Berry', 'Ban
ana', 'Litchi', 'KIwi'}

SET 3 AFTER SYMMETRIC DIFFERENCE        = {'Strawberry', 'Apple', 'Avacado',
'Cherry', 'KIwi', 'Banana', 'Mango', 'Orange'}

SET 1 AFTER SYMMETRIC DIFFERENCE UPDATE = {'Strawberry', 'Apple', 'Avacado',
'Cherry', 'Orange', 'Banana', 'Mango', 'KIwi'}
```

In [3]:

```
print("SET - UNPACKING SET ")

set_1 = {"Mango", "Cherry", "Berry",'Apple', 'Watermelon', 'Strawberry'}
print("\nSET 1\t=", set_1)

varA, varB,varC, varD, varE, varF = set_1

#ORDER WILL NOT BE SAME
print("varA\t=" , varA)
print("varB\t=" , varB)
print("varC\t=" , varC)
print("varD\t=" , varD)
print("varE\t=" , varE)
print("varF\t=" , varF)
```

```
SET - UNPACKING SET

SET 1   = {'Watermelon', 'Apple', 'Strawberry', 'Cherry', 'Mango', 'Berry'}
varA    = Watermelon
varB    = Apple
varC    = Strawberry
varD    = Cherry
varE    = Mango
varF    = Berry
```

In [13]:

```
list_1= ["banana", "apple", "pneapple", 'orange']
print ("banana" in list_1)
```

```
True
```