LIST

Q1. Create a list of 5 random numbers and print the list

In [10]:
```
list=[23,65,95,77,36]
list
```

Out[10]:
```
[23, 65, 95, 77, 36]
```

Q2. Insert 3 new values to the list and print the updated list.

In [11]:
```
list.insert(11,22)
list
```

Out[11]:
```
[23, 65, 95, 77, 36, 22]
```

Q3. Access the third element in the list and print the element

In [12]:
```
print(list[2])
```

```
95
```

Q4. Create a new list of 3 random strings and concatenate the two lists into a third list.

In [13]:
```
str=["run","debug","execute"]
cnct=list+str
print(cnct)
```

```
[23, 65, 95, 77, 36, 22, 'run', 'debug', 'execute']
```

Q5. Try to use a for loop to print each element in the list

In [14]:
```
for i in cnct:
    print(i)
```

```
23
65
95
77
36
22
run
debug
execute
```

DICTIONARY

Q1. Create a dictionary with keys 'name', 'age', and 'address' and values 'John', 25, and 'New York' respectively.

In [39]:
```
dict={"Name":"John","Age":25,"Address":"New York"}
dict
```

Out[39]:
```
{'Name': 'John', 'Age': 25, 'Address': 'New York'}
```

Q2. Add a new key-value pair to the dictionary created in Q1 with key 'phone' and value '1234567890'.

In [40]:
```
dict["Phone"]='1234567890'
dict
```

Out[40]:
```
{'Name': 'John', 'Age': 25, 'Address': 'New York', 'Phone': '1234567890'}
```

Q3. Remove the key 'address' from the dictionary created in Q1.

In [41]:
```
del dict["Address"]
```

In [42]:
```
dict
```

Out[42]:
```
{'Name': 'John', 'Age': 25, 'Phone': '1234567890'}
```

Q4. Print the value of the key 'age' from the dictionary created in Q1.

In [43]:
```
print(dict["Age"])
```

```
25
```

Q5. Check if the key 'phone' exists in the dictionary created in Q1.

In [55]:
```
if "Phone" in dict:
    print("Yes !! it exists")
else:
    print("No.. it does not exists")
```

```
Yes !! it exists
```

SET

Q1.Create a set with values 1, 2, 3, 4, and 5.

In [65]:
```
set={1,2,3,4,5}
set
```

Out[65]:
```
{1, 2, 3, 4, 5}
```

Q2. Add the value 6 to the set created in Q1.

In [66]:
```
set.add(6)
set
```

Out[66]:
```
{1, 2, 3, 4, 5, 6}
```

Q3. Remove the value 3 from the set created in Q1.

In [67]:
```
set.remove(3)
```

In [68]:
```
set
```

Out[68]:
```
{1, 2, 4, 5, 6}
```

Q4. Print the length of the set created in Q1.

In [76]:
```
print(len(set))
```

```
5
```

Q5. Create a new set by union of the set created in Q1 with another set {6, 7, 8}.

In [75]:
```
set2={6,7,8}
main=set| set2
main
```

Out[75]:
```
{1, 2, 4, 5, 6, 7, 8}
```

TUPLE

Q1. Create a tuple with values 1, 2, 3, and 4

In [79]:
```
tpl=1,2,3,4
tpl
```

Out[79]:
```
(1, 2, 3, 4)
```

Q2. Print the length of the tuple created in Q1.

In [80]:
```
print(len(tpl))
```

```
4
```

Q3. Create a new tuple by concatenating the tuple from Q1 with another tuple (5, 6).

In [81]:
```
tpl2=5,6
tuple=tpl+tpl2
tuple
```

Out[81]:
```
(1, 2, 3, 4, 5, 6)
```

Q4. Print the first two values of the tuple created in Q3.

In [82]:
```
print(tuple[0:2])
```

```
(1, 2)
```

Q5. Check if the value 4 exists in the tuple created in Q1.

In [83]:
```
if 4 in tuple:
    print("4 is present")
else:
    print("Its absent")
```

```
4 is present
```

STRING,LIST-SET-DICTIONARY COMPRENHENSION

Write a program that asks the user to enter his/her full name and the program process and manipulate the text of his/her name. An example run of the program (numbers in bold are typed in by the user) Please enter your first name: Peter Please enter your last name: Cambridge Your full name is PETER CAMBRIDGE Your initials are P C

In [28]:
```
first=input("Enter your first name :")
last=input("Enter your last name :")
first.upper()
last.upper()
full=first +" "+ last
print("Your full name is ",full.upper())
print("Your initals are :",first[0].upper()+" "+last[0].upper())
```

```
Your full name is  SERAPHINA DELGADO
Your initals are : S D
```

LENGTH

In [29]:
```
print("First name length is",len(first),"letters")
print("Last name length is",len(last),"letters")
print("Full name length is",len(full),"letters") #space is also counted
```

```
First name length is 9 letters
Last name length is 7 letters
Full name length is 17 letters
```

STARTS & ENDS

In [30]:
```
print("First name starts with",first[0].upper())
```

```
print("First name ends with",first[-1].upper())
print("Last name starts with",last[0].upper())
print("Last name ends with",last[-1].upper())
```

```
First name starts with S
First name ends with A
Last name starts with D
Last name ends with O
```

INDEX

In [31]:
```
print("First name index are 0 -",len(first))
print("Last name index are 0 -",len(last))
```

```
First name index are 0 - 9
Last name index are 0 - 7
```

TRIM

In [32]:
```
print("Fist name trims 1 ",first[0:3])
print("Fist name trims 2 ",first[3:])
print("Last name trims 1 ",last[0:3])
print("Last name trims 2 ",last[3:])
```

```
Fist name trims 1  Ser
Fist name trims 2  aphina
Last name trims 1  Del
Last name trims 2  gado
```

Write a program that asks the user to enter his/her name and then partly encrypt and display it. Name: John Encrypted name : J**n

In [4]:
```
name=input("Name :")
encr=name[0] +"*" * (len(name)-2)+name[-1]
print("Encrypted name :",encr)
```

```
Encrypted name : h**a
```

Write a Python program to count the number of strings where the string length is 2 or more and the first and last character are same from a given list of strings Sample List : ['abc', 'xyz', 'aba', '1221'] Expected Result : 2

In [45]:
```
list=["abc","xyz","aba","1221"]
n=0
for i in list:
    if len(i)>=2 and i[0]==i[-1]:
        n+= 1
print("Expected Result:",n)
```

```
Expected Result: 2
```

Find all of the numbers from 1-1000 that are divisible by 7 using list comprehension.

In [30]:
```
list=[i for i in range(1,1000) if i%7==0]
print(list)
```

```
[7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91, 98, 105, 112, 119, 126, 133, 140, 147, 154, 161, 168, 175, 182, 1
89, 196, 203, 210, 217, 224, 231, 238, 245, 252, 259, 266, 273, 280, 287, 294, 301, 308, 315, 322, 329, 336, 343, 350
, 357, 364, 371, 378, 385, 392, 399, 406, 413, 420, 427, 434, 441, 448, 455, 462, 469, 476, 483, 490, 497, 504, 511,
518, 525, 532, 539, 546, 553, 560, 567, 574, 581, 588, 595, 602, 609, 616, 623, 630, 637, 644, 651, 658, 665, 672, 67
9, 686, 693, 700, 707, 714, 721, 728, 735, 742, 749, 756, 763, 770, 777, 784, 791, 798, 805, 812, 819, 826, 833, 840,
847, 854, 861, 868, 875, 882, 889, 896, 903, 910, 917, 924, 931, 938, 945, 952, 959, 966, 973, 980, 987, 994]
```

Create dictionary from a list where the keys are the elements of the list and value of the dictionary is result after dividing the element by 3

In [43]:
```
list=[60,15,7,98,30]
dict={ }
for i in list:
    x=i/3
    dict[i]=x
print(dict)
```

```
{60: 20.0, 15: 5.0, 7: 2.3333333333333335, 98: 32.666666666666664, 30: 10.0}
```