List Concepts

*append
*insert
*pop
*del
*sort
*sorted (first it make a copy of original list and then sorted the copy.It does not affect original list)

```python
In [1]: names = ["Arif" , "Aqdas" , "Kamran"]
        names[0]
```

Out[1]: 'Arif'

```python
In [2]: names[1]
```

Out[2]: 'Aqdas'

```python
In [3]: names[2]
```

Out[3]: 'Kamran'

```python
In [4]: print("Hello " + names[0].title() + " how are you")
        print("Hello " + names[1].title() + " how are you")
        print("Hello " + names[2].title() + " how are you")
```

```
Hello Arif how are you
Hello Aqdas how are you
Hello Kamran how are you
```

```python
In [5]: print(["I","will" , "buy" ,"Rolls Royce" , "and" , "Gwagon" , "Insha Allah"])
```

```
['I', 'will', 'buy', 'Rolls Royce', 'and', 'Gwagon', 'Insha Allah']
```

```python
In [6]: guests = ["Arif" , "Aqdas" , "Kamran"]
        print(guests[0] + " i would like to you on dinner at my place")
        print(guests[1] + " i would like to you on dinner at my place")
        print(guests[2] + " i would like to you on dinner at my place")
```

```
Arif i would like to you on dinner at my place
Aqdas i would like to you on dinner at my place
Kamran i would like to you on dinner at my place
```

In [7]:
```python
print( "I would like to inform you all that " + guests[2] + " wont make it to
```

I would like to inform you all that Kamran wont make it to dinner due to some
emergency.

In [8]:
```python
guests[2] = "Shahid"
```

In [9]:
```python
guests
```

Out[9]: ['Arif', 'Aqdas', 'Shahid']

In [10]:
```python
print(guests[0] + " i would like to you on dinner at my place")
print(guests[1] + " i would like to you on dinner at my place")
print(guests[2] + " i would like to you on dinner at my place")
```

Arif i would like to you on dinner at my place
Aqdas i would like to you on dinner at my place
Shahid i would like to you on dinner at my place

In [11]:
```python
guests.insert(0 , "Mosaib")
guests.insert(2 , "Faisal")
guests.insert(5 , "MUjtaba")
```

In [12]:
```python
guests
```

Out[12]: ['Mosaib', 'Arif', 'Faisal', 'Aqdas', 'Shahid', 'MUjtaba']

In [13]:
```python
guests.pop()
print(guests)
```

['Mosaib', 'Arif', 'Faisal', 'Aqdas', 'Shahid']

In [14]:
```python
del guests[0]
```

In [15]:
```python
del guests[0]
```

In [16]:
```python
guests
```

Out[16]: ['Faisal', 'Aqdas', 'Shahid']

In [17]:
```python
cities = ["Canada" , "Turkey" , "UK" , "USA" ,"Melbourn"]
```

In [18]:
```python
cities
```

Out[18]: ['Canada', 'Turkey', 'UK', 'USA', 'Melbourn']

```
In [19]:  print(sorted(cities))

          ['Canada', 'Melbourn', 'Turkey', 'UK', 'USA']
```

```
In [20]:  cities
```

```
Out[20]:  ['Canada', 'Turkey', 'UK', 'USA', 'Melbourn']
```

```
In [21]:  cities.reverse()
```

```
In [22]:  cities.reverse()
```

```
In [23]:  cities
```

```
Out[23]:  ['Canada', 'Turkey', 'UK', 'USA', 'Melbourn']
```

```
In [24]:  cities.sort()
          cities
```

```
Out[24]:  ['Canada', 'Melbourn', 'Turkey', 'UK', 'USA']
```

```
In [25]:  cities.sort()
          cities
```

```
Out[25]:  ['Canada', 'Melbourn', 'Turkey', 'UK', 'USA']
```

```
In [26]:  len(cities)
```

```
Out[26]:  5
```

```
In [27]:  cars = ["Rolls Royce" , "G-Wagon" , "Supra" , "S-Class"]
```

```
In [28]:  cars.append("Audi")
```

```
In [29]:  cars
```

```
Out[29]:  ['Rolls Royce', 'G-Wagon', 'Supra', 'S-Class', 'Audi']
```

```
In [30]:  cars.pop()
```

```
Out[30]:  'Audi'
```

```
In [31]:  sorted(cars)
```

```
Out[31]:  ['G-Wagon', 'Rolls Royce', 'S-Class', 'Supra']
```

In [32]:
```python
cars
```

Out[32]: ['Rolls Royce', 'G-Wagon', 'Supra', 'S-Class']

For Loop

In [33]:
```python
pizzas = ["Fajita" , "Malayi Boti" , "Cream Flavour"]

for i in pizzas:
    print(i + " flavour i  love it")

print("In above flavours mostly i love cream flavoured pizzas, fajita is also
```

```
Fajita flavour i  love it
Malayi Boti flavour i  love it
Cream Flavour flavour i  love it
In above flavours mostly i love cream flavoured pizzas, fajita is also good
```

In [34]:
```python
animals = ["Cat" , "Dog" , "Goat"]

for i in animals:
    print("Every " + i + " babies are cute ")

print("From above animals goat babies are most cute in all")
```

```
Every Cat babies are cute
Every Dog babies are cute
Every Goat babies are cute
From above animals goat babies are most cute in all
```

In [35]:
```python
#4-3
for i in range(1,21):
    print(i)
```

```
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
```

In [50]:
```python
#4-4
one_million = []
for i in range(1,1000001):
    #print(i)
    one_million.append(i)
```

In [51]: one_million

Out[51]:
```
[1,
 2,
 3,
 4,
 5,
 6,
 7,
 8,
 9,
 10,
 11,
 12,
 13,
 14,
 15,
 16,
 17,
 18,
 19,
```

In [53]:
```python
#4-5

min(one_million)
```

Out[53]: 1

In [54]:
```python
max(one_million)
```

Out[54]: 1000000

In [55]:
```python
sum(one_million)
```

Out[55]: 500000500000

In [63]:
```python
#4-6
for i in range(1,20,2):
    print(i)
```

```
1
3
5
7
9
11
13
15
17
19
```

In [65]:
```python
#4-7
lst = []
for i in range(1,30,2):
    lst.append(i)
lst
```

Out[65]: [1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29]

In [69]:
```python
#4-8
cube_lst = []
for i in range(1,11):
    cube_lst.append(i ** 3)
cube_lst
```

Out[69]: [1, 8, 27, 64, 125, 216, 343, 512, 729, 1000]

```python
In [67]:  #4-9
          cube = [value ** 3 for value in range(1,11)]
          cube
```

Out[67]: [1, 8, 27, 64, 125, 216, 343, 512, 729, 1000]

Slicing List

```python
In [71]:  #4-10
          cars = ["Rolls Royce" , "G-Wagon" , "Supra" , "S-Class"]
          print("The first three items in the list are")
          print(cars[:3])
```

```
The first three items in the list are
['Rolls Royce', 'G-Wagon', 'Supra']
```

```python
In [72]:  #4-10
          cars = ["Rolls Royce" , "G-Wagon" , "Supra" , "S-Class" , "Audi"]
          print(" Three items from the middle  are")
          print(cars[1:4])
```

```
 Three items from the middle  are
['G-Wagon', 'Supra', 'S-Class']
```

```python
In [73]:  #4-10
          cars = ["Rolls Royce" , "G-Wagon" , "Supra" , "S-Class" , "Audi"]
          print(" Last Three items from the list  are")
          print(cars[-3:])
```

```
 Last Three items from the list  are
['Supra', 'S-Class', 'Audi']
```

```python
In [77]:  #4-11
          my_pizzas = ["Fajita" , "Malayi Boti" , "Cream Flavour"]
          friend_pizzas = ["Fajita" , "Malayi Boti" , "Cream Flavour"]

          friend_pizzas.append("Spicy")
          my_pizzas.append("Not Spicy")
```

```python
In [78]:  friend_pizzas
          my_pizzas
```

Out[78]: ['Fajita', 'Malayi Boti', 'Cream Flavour', 'Not Spicy']

```
In [83]: print("My Favourite Pizza Flavours are")
         for i in my_pizzas:
             print(i)

         print("\nMy friend Favourite Pizza Flavours are")
         for i in friend_pizzas:
             print(i)
```

```
My Favourite Pizza Flavours are
Fajita
Malayi Boti
Cream Flavour
Not Spicy

My friend Favourite Pizza Flavours are
Fajita
Malayi Boti
Cream Flavour
Spicy
```

Tuple

```
In [85]: #4-13
         foods_offer = ("Pizza" , "Burger" , "Cold Drink" , "Ice Cream" , "Nuggets")
         for i in foods_offer:
             print(i)
```

```
Pizza
Burger
Cold Drink
Ice Cream
Nuggets
```

```
In [86]: foods_offer[2] = "Biryani"
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_11416\2934662173.py in <module>
----> 1 foods_offer[2] = "Biryani"

TypeError: 'tuple' object does not support item assignment
```

```
In [87]: revised_foods = ("Pizza" , "Biryani" , "Cold Drink" , "Ice Cream" , "Pulao")
         for i in revised_foods:
             print(i)
```

```
Pizza
Biryani
Cold Drink
Ice Cream
Pulao
```

In [ ]: