Working with List

3.1 Write A Program(WAP) to initialize the List and print it on the screen using simple and enhanced for loop.

➢ **Code:**

```
print(" Kishan patel - 17012021036 ")
list=[0,1,2,3,4,5,6,7,8,9,10]
print("*** Simple  ***")
for i in range(0,11):
   print(list[i],end=" ")
print("\n*** Enhanced***")
for n in list:
   print(n,end=" ")
```

➢ **Output :**

```
 Kishan patel - 17012021036
*** Simple  ***
0 1 2 3 4 5 6 7 8 9 10
*** Enhanced***
0 1 2 3 4 5 6 7 8 9 10
```

➢ **Python idle :**

```
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/pr33.py
 Kishan patel - 17012021036
*** Simple  ***
0 1 2 3 4 5 6 7 8 9 10
*** Enhanced***
0 1 2 3 4 5 6 7 8 9 10
>>> 
```

3.2 WAP which takes five value from user store in list , find average & display it on screen with appropriate message.

➢ **Code:**

```
print(" Kishan patel - 17012021036 ")
n=int(input("enter no of elements in list:"))
sum=0
lst=[]
for i in range(n):
   lst.append(input("enter %d element:" %(i+1)))
```

```
print("*** Simple  ***")
for i in lst:
    print(i,end=" ")
    sum=sum+int(i)

avg=sum/n
print("\naverage= "+str(avg))
```

➢ **Output :**

```
 Kishan patel - 17012021036
enter no of elements in list:5
enter 1 element:10
enter 2 element:20
enter 3 element:30
enter 4 element:40
enter 5 element:50
*** Simple   ***
10 20 30 40 50
average= 30.0
```

➢ **Python idle :**

```
RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/pr33.py
 Kishan patel - 17012021036
enter no of elements in list:5
enter 1 element:10
enter 2 element:20
enter 3 element:20
enter 4 element:10
enter 5 element:40
*** Simple   ***
10 20 20 10 40
average= 20.0
>>>
```

3.3 WAP to search an element from a list.
    Using in method
    Using list inbuilt function (count).

➢ **Code: using inbuilt function**

```
print(" Kishan patel - 17012021036 ")
n=int(input("enter no of elements in list:"))
lst=[]
f=1
for i in range(n):
    lst.append(input("enter %d element:" %(i+1)))
```

```
n1=int(input("enter number you want to find:"))
for i in lst:
   if(int(i)==n1):
      print("Element is available in list")
      f=0
if(f!=0):
   print("element is not present in lsit")
```

using in method
```
print(" Kishan patel - 17012021036 ")
print("*** in method ***")
n=int(input("enter no of elements in list:"))
lst=[]
for i in range(n):
   lst.append(int(input("enter %d element:" %(i+1))))
n1=int(input("enter number you want to find:"))
print(lst)
if(n1 in lst):
      print("element is present")
else:
      print("not present")
```

using count method
```
print(" Kishan patel - 17012021036 ")
print("*** count method ***")
n=int(input("enter no of elements in list:"))
lst=[]
for i in range(n):
   lst.append(int(input("enter %d element:" %(i+1))))
n1=int(input("enter number you want to find:"))

if(lst.count(n1)>0):
   print("element is present")
else:
   print("not present")
```

➢ **Output :**
```
 Kishan patel - 17012021036
enter no of elements in list:3
enter 1 element:1
enter 2 element:2
enter 3 element:3
enter number you want to find:2
Element is available in list
```

```
 Kishan patel - 17012021036
*** in method ***
enter no of elements in list:3
enter 1 element:10
enter 2 element:20
enter 3 element:30
enter number you want to find:50
[10, 20, 30]
not present
```

```
 Kishan patel - 17012021036
*** count method ***
enter no of elements in list:5
enter 1 element:10
enter 2 element:230
enter 3 element:30
enter 4 element:22
enter 5 element:2
enter number you want to find:5555
not present
```

➢ **Python idle :**

```
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
enter no of elements in list:3
enter 1 element:1
enter 2 element:2
enter 3 element:3
enter number you want to find:2
Element is available in list
>>>
```

```
>>>
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
*** in method ***
enter no of elements in list:3
enter 1 element:2
enter 2 element:4
enter 3 element:6
enter number you want to find:5
[2, 4, 6]
not present
>>>
```

```
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
*** count method ***
enter no of elements in list:2
enter 1 element:5
enter 2 element:8
enter number you want to find:7
not present
>>>
```

3.4 WAP to find maximum & minimum value from list.
   Using inbuilt function
   Using for loop

➢ **Code:**

```
print(" Kishan patel - 17012021036 ")
print("*** ***")
n=int(input("enter no of elements in list:"))
lst=[]
for i in range(n):
   lst.append(int(input("enter %d element:" %(i+1))))
print("minimum element:="+str(min(lst)))
print("maximum element:="+str(max(lst)))
-----------------------------------------------------------------
print(" Kishan patel - 17012021036 ")
print("*** ***")
n=int(input("enter no of elements in list:"))
lst=[]
for i in range(n):
   lst.append(int(input("enter %d element:" %(i+1))))
min=lst[0]
max=lst[0]
for i in lst:
    if(i<min):
        min=i

    if(i>max):
        max=i
print("max="+str(max))
print("min="+str(min))
```

➢ **Output :**

```
 Kishan patel - 17012021036
*** ***
enter no of elements in list:5
enter 1 element:100
enter 2 element:2
enter 3 element:4
enter 4 element:44
enter 5 element:56
minimum element:=2
maximum element:=100
```

```
 Kishan patel - 17012021036
*** ***
enter no of elements in list:3
enter 1 element:1
enter 2 element:2
enter 3 element:3
max=3
min=1
```

➢ **Python idle :**

```
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
*** count method ***
enter no of elements in list:3
enter 1 element:1
enter 2 element:2
enter 3 element:3
minimum element:=1
maximum element:=3

>>>
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
*** ***
enter no of elements in list:3
enter 1 element:4
enter 2 element:3
enter 3 element:2
max=4
min=2
>>> |
```

3.5 WAP to remove entered element/elements from list.

➢ **Code:**

```
print(" Kishan patel - 17012021036 ")
print("*** ***")
n=int(input("enter no of elements in list:"))
lst=[]
for i in range(n):
   lst.append(int(input("enter %d element:" %(i+1))))
n1=int(input("enter element  you want to remove:"))
while(n1 in lst):
 lst.remove(n1)
print(lst)
```

➢ **Output :**

```
 Kishan patel - 17012021036
*** ***
enter no of elements in list:5
enter 1 element:20
enter 2 element:43
enter 3 element:45
enter 4 element:234
enter 5 element:45
enter element  you want to remove:45
[20, 43, 234]
```

➢ **Python idle :**

```
>>>
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
*** count method ***
enter no of elements in list:3
enter 1 element:2
enter 2 element:1
enter 3 element:3
enter element  you want to remove:1
[2, 3]
>>> |
```

3.6 WAP to sort element in list
     In same list
      Create sorted copy of original list & print both.

➢ **Code:**

```
print(" Kishan patel - 17012021036 ")
print("*** ***")
n=int(input("enter no of elements in list:"))
lst=[]
for i in range(n):
   lst.append(int(input("enter %d element:" %(i+1))))
print(lst)
print(" ***   sorted  ***")
lst.sort()
print(lst)
```

➢ **Output :**

```
 Kishan patel - 17012021036
*** count method ***
enter no of elements in list:5
enter 1 element:33
enter 2 element:234
enter 3 element:45
enter 4 element:23
enter 5 element:45
[33, 234, 45, 23, 45]
 ***   sorted   ***
[23, 33, 45, 45, 234]
```

➢ **Python idle :**

```
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
*** count method ***
enter no of elements in list:3
enter 1 element:2
enter 2 element:88
enter 3 element:4
[2, 88, 4]
 ***   sorted   ***
[2, 4, 88]
>>> |
```

3.7 WAP to reverse elements of list

➢ **Code:**

```
print(" Kishan patel - 17012021036 ")
n=int(input("enter no of elements in list:"))
lst=[]
for i in range(n):
    lst.append(int(input("enter %d element:" %(i+1))))
lst.reverse()
print(lst)
```

➢ **Output :**

```
 Kishan patel - 17012021036
enter no of elements in list:5
enter 1 element:32
enter 2 element:23
enter 3 element:43
enter 4 element:23
enter 5 element:44
[44, 23, 43, 23, 32]
```

➢ **Python idle :**

```
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
*** count method ***
enter no of elements in list:3
enter 1 element:2
enter 2 element:3
enter 3 element:4
[4, 3, 2]
>>> |
```

3.8 WAP which take one string as input convert it in list , reverse it & check for palindrome using list functions.

➢ **Code:**

```
print(" Kishan patel - 17012021036 ")
str1 =input("Enter any String :")
l1=list(str1)
l2=l1[::-1]
if(l1==l2):
   print("palindrome string")
else:
   print("not palindrome")
```

➢ **Output :**

```
 Kishan patel - 17012021036
Enter any String :kishan_nahsik
palindrome string
```

➢ **Python idle :**

```
>>>
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
Enter any String :121
palindrome string
>>> |
```

3.9 WAP which insert element in a list at given position.

➢ **Code:**

```
print(" Kishan patel - 17012021036 ")
n=int(input("enter no of elements in list:"))
lst=[]
for i in range(n):
    lst.append(int(input("enter %d element:" %(i+1))))
v=int(input("enter elements you want to insert :"))
e=int(input("enter position : "))
lst.insert(e-1,v)
print(lst)
```

➢ **Output :**

```
     Kishan patel - 17012021036
enter no of elements in list:5
enter 1 element:10
enter 2 element:15
enter 3 element:20
enter 4 element:25
enter 5 element:30
enter elements you want to insert :35
enter position : 4
[10, 15, 20, 35, 25, 30]
```

➢ **Python idle :**

```
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
enter no of elements in list:3
enter 1 element:1
enter 2 element:2
enter 3 element:3
enter elements you want to insert :5
enter position : 1
[5, 1, 2, 3]
>>> |
```

3.10 WAP which Squaring every number in a list & display it.

➢ **Code:**

```
print(" Kishan patel - 17012021036 ")
n=int(input("enter no of elements in list:"))
lst=[]
for i in range(n):
    lst.append(int(input("enter %d element:" %(i+1))))
```

```
    lst[i]=lst[i]**2
print(lst)
```

➢ **Output :**

```
 Kishan patel - 17012021036
enter no of elements in list:3
enter 1 element:1
enter 2 element:2
enter 3 element:3
[1, 4, 9]
```

➢ **Python idle :**

```
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
enter no of elements in list:3
enter 1 element:2
enter 2 element:3
enter 3 element:4
[4, 9, 16]
>>>
```

3.11 WAP which create two blank list, ask user to enter five value for each list, perform addition of same index elements & store answer in third list, display third list on screen.

➢ **Code:**

```
print(" Kishan patel - 17012021036 ")
n=int(input("enter no of elements in list1 and list2 :"))
lst1=[]
lst2=[]
lst3=[]
for i in range(n):
    lst1.append(int(input("enter %d element:" %(i+1))))
print("enter element for list2 : ")

for i in range(n):
    lst2.append(int(input("enter %d element:" %(i+1))))
    x=lst1[i]+lst2[i]
    lst3.append(x)

print("list-1:=",lst1)
print("list-2:=",lst2)
print("list-3:=",lst3)
```

➢ **Output :**

```
 Kishan patel - 17012021036
enter no of elements in list1 and list2 :5
enter 1 element:1
enter 2 element:2
enter 3 element:3
enter 4 element:4
enter 5 element:5
enter element for list2 :
enter 1 element:5
enter 2 element:4
enter 3 element:3
enter 4 element:2
enter 5 element:1
list-1:= [1, 2, 3, 4, 5]
list-2:= [5, 4, 3, 2, 1]
list-3:= [6, 6, 6, 6, 6]
```

➢ **Python idle :**

```
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
enter no of elements in list1 and list2 :3
enter 1 element:2
enter 2 element:3
enter 3 element:4
enter element for list2 :
enter 1 element:4
enter 2 element:3
enter 3 element:2
list-1:= [2, 3, 4]
list-2:= [4, 3, 2]
list-3:= [6, 6, 6]
>>> |
```

3.12 WAP which takes comma separated string from user & store each string which separated by comma in list & display list.

➢ **Code:**

```
print(" Kishan patel - 17012021036 ")
str=input("Enter any string which saparated by comma :")
lst=str.split(",")
print(lst)
```

➢ **Output :**

```
  Kishan patel - 17012021036
 Enter any string which saparated by comma :kishan,patel,36
 ['kishan', 'patel', '36']
```

➢ **Python idle :**

```
>>>
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
Enter any string which saparated by comma :kishan,patel,36
['kishan', 'patel', '36']
>>> |
```

3.13 WAP which show use of iter( ) function.

➢ **Code:**
```
print(" Kishan patel - 17012021036 ")
n=int(input("enter no of elements in list:"))
lst=[]
for i in range(n):
   lst.append(int(input("enter %d even number :" %(i+1))))

lst1 = iter(lst)
for i in range(n):
 print(next(lst1))
```

➢ **Output :**

```
 Kishan patel - 17012021036
enter no of elements in list:3
enter 1 even number :2
enter 2 even number :4
enter 3 even number :6
2
4
6
```

➢ **Python idle :**

```
>>>
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
enter no of elements in list:3
enter 1 even number :4
enter 2 even number :6
enter 3 even number :8
4
6
8
```

3.14 WAP to for addition of two 3X3 matrix & display resultant matrix on screen.

➢ **Code:**

```
print(" Kishan patel - 17012021036 ")
r=int(input("enter number of row : "))
c=int(input("enter number of column : "))
a=[]
b=[]
d=[]

print("enter element for 1st matrix:")
for i in range(0,r):
    l=[]
    for j in range(0,c):
        l.append(int(input()))
    a.append(l)

print("1st matrix:")

for i in range(0,r):
    for j in range(0,c):
        print(a[i][j],end="")
    print("")

print("enter element for 2nd matrix:")
for i in range(0,r):
    l=[]
    for j in range(0,c):
        l.append(int(input()))
    b.append(l)

print("2nd matrix:")

for i in range(0,r):
    for j in range(0,c):
        print(b[i][j],end="")
    print("")


for i in range(0,r):
    l=[]
    for j in range(0,c):
        x=int(a[i][j]+b[i][j])
```

```
        l.append(x)
    d.append(l)

print("addition is:")
for i in range(r) :
    for j in range(c) :
        print(d[i][j],end="")
    print("")
```

➢ **Output :**

```
 Kishan patel - 17012021036
enter number of row : 3
enter number of column : 3
enter element for 1st matrix:
1
1
1
1
1
1
1
1
1
1st matrix:
111
111
111
enter element for 2nd matrix:
2
2
2
2
2
2
2
2
2
2nd matrix:
222
222
222
addition is:
333
333
333
```

➢ **Python idle :**

```
>>>
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
enter number of row : 3
enter number of column : 3
enter element for 1st matrix:
1
1
1
1
1
1
1
1
1
1st matrix:
111
111
111
enter element for 2nd matrix:
1
1
1
1
1
1
1
1
1
2nd matrix:
111
111
111
addition is:
222
222
222
```

3.15 Explain slices. Give output of following program:

list1 = [14, 26, 4, 3, 7, 6, 9, 4, 65, 3, 8, 6, 30, 2]
list2 = list1[3:12:3]
list2[2] += list1[4]
list1[0] = list2[1]
print(list2)

➢ **Output :**

```python
print(" Kishan patel - 17012021036 ")
list1 = [14, 26, 4, 3, 7, 6, 9, 4, 65, 3, 8, 6, 30, 2]
list2 = list1[3:12:3]
list2[2] += list1[4]
list1[0] = list2[1]
print(list2)
```

```
 Kishan patel - 17012021036
[3, 9, 10]
```

➢ **Python idle :**

```
 RESTART: C:/Users/Dell Store/AppData/Local/Programs/Python/Python37/tett.py
 Kishan patel - 17012021036
[3, 9, 10]
>>>
```