EXPERIMENT 3

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B/B1

* Aim

Write a menu driven program to demonstrate
use of list in Python
a. Put even and odd elements into different
   lists.
b. Merge and sort the two list
c. Update first element with X value and
   delete the middle element of list
d. Find max and min element from list.
e. Add N names into the existing number
   list and check if word Python is
   present in list.

* Theory:

A list in Python represents a group of
comma-separated values of any datatype
between square brackets.
eq. [1, 2, 3, 4]
    ['Python', 102, 5, 10]

The values are internally are numbered from
0. First item of list is indexed as 0,
second as 1 and so on.
Values of type list are mutable i.e.
changeable - one can change/add/delete a list
elements list can contain different data types.

Python has a set of built-in methods that
can be used on lists.

append ()   adds an element at the end of
                  the list

insert ()   adds an element at the specified
                  position.

reverse ()   reverses the order of the list

sort ()   sorts the list

pop ()   removes the element at specified
                  position.

remove ()   removes the item with specified
                  value.

We can join or concatenate list in python
Easiest way is to using + operator
l3 = l1 + l2
Other ways are using append () and
extend ().

* Conclusion :

We learnt about list ~~in~~ ~~nyth~~ datatype,
implementation of list and ~~performs~~ performing
different operations on it such as deleting,
adding items to list. We also learnt
about different methods that are used
on lists.

Program:

```python
7
8 def menu():
9      print("1. even odd")
10     print("2. Merge and sort")
11     print("3. update first element and delete middle element")
12     print("4. minimum and maximum")
13     print("5. add names")
14     print("6. exit")
15     a= int(input("enter choice "))
16     return(a)
17
18 def evenodd():
19     for z in l1:
20         if z%2==0 :
21             l2.append(z)
22         else:
23             l3.append(z)
24     print("even list: ",l2)
25     print("odd list: ",l3)
26
27 def mergesort():
28     l4=l2+l3
29     l4.sort()
30     print("sorted in ascending order",l4)
31
32 def updatedelete():
33     x=int(input("enter element to place at first position"))
34     l1[0]=x
35     print("updated list: ",l1)
36     l1.pop(num//2)
37     print("after deleting: ",l1)
38
39 def minmax():
40     print("minimum element in list is: ",min(l1))
41     print("maximum element in list is: ",max(l1))
42
43 def addname():
44     n1=int(input("enter number of string to be added: "))
45     print("enter string: ")
46     for i in range(0,n1):
47         str=input()
```

```python
48          l1.append(str)
49      print("list is: ",l1)
50      if 'python' in l1:
51          print("python is present in list")
52      else:
53          print("python is not present")
54
55
56 l1=[]
57 l2=[]
58 l3=[]
59 num=int(input("enter number of elements to add in list: "))
60 print("enter the numbers: ")
61 for i in range(0,num):
62      x=int(input())
63      l1.append(x)
64 print("list is: ",l1)
65 a=0
66 while(a!=6):
67      a=menu()
68      if a==1:
69          evenodd()
70      elif a==2:
71          mergesort()
72      elif a==3:
73          updatedelete()
74      elif a==4:
75          minmax()
76      elif a==5:
77          addname()
78
79
```

Output:

```
In [16]: runfile('C:/Users/sai/Documents/Python Scripts/exp3.py', w
Documents/Python Scripts')

enter number of elements to add in list: 4
enter the numbers:

6

3

8

2
list is:  [6, 3, 8, 2]
1. even odd
2. Merge and sort
3. update first element and delete middle element
4. minimum and maximum
5. add names
6. exit

enter choice 1
even list:  [6, 8, 2]
odd list:  [3]
1. even odd
2. Merge and sort
3. update first element and delete middle element
4. minimum and maximum
5. add names
6. exit

enter choice 2
sorted in ascending order [2, 3, 6, 8]
1. even odd
2. Merge and sort
3. update first element and delete middle element
4. minimum and maximum
5. add names
6. exit
```

```
enter choice 3

enter element to place at first position15
updated list:  [15, 3, 8, 2]
after deleting:  [15, 3, 2]
1. even odd
2. Merge and sort
3. update first element and delete middle element
4. minimum and maximum
5. add names
6. exit

enter choice 4
minimum element in list is:   2
maximum element in list is:   15
1. even odd
2. Merge and sort
3. update first element and delete middle element
4. minimum and maximum
5. add names
6. exit

enter choice 5

enter number of string to be added: 2
enter string:

java

python
list is:  [15, 3, 2, 'java', 'python']
python is present in list
1. even odd
2. Merge and sort
3. update first element and delete middle element
4. minimum and maximum
5. add names
6. exit

enter choice 6
```