Name- Akash Kinkar Pandey
Department-CSE
Roll-40
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Assignment on Lists

Program 1

```
players = ['virat']
#using append 5 times
players.append('venkatesh')
players.append('manish pandey')
players.append('dhoni')
players.append('dhawan')
players.append('rohit')

print(players)
```

Output

['virat', 'venkatesh', 'manish pandey', 'dhoni', 'dhawan', 'rohit']

Program 2

```
list=[]
while True:
    x=int(input("Enter integer element of list ,press -1 to exit "))
    if(x==-1):
        break
    list.append(x)
x=int(input("Enter a number whose frequency is to be found "))
count = list.count(x)
print('Count of',x,'is', count)
```

Output

Enter integer element of list ,press -1 to exit 5
Enter integer element of list ,press -1 to exit 6
Enter integer element of list ,press -1 to exit 6
Enter integer element of list ,press -1 to exit 6
Enter integer element of list ,press -1 to exit 7
Enter integer element of list ,press -1 to exit 6
Enter integer element of list ,press -1 to exit -1
Enter a number whose frequency is to be found 6
Count of 6 is 4

Program 3

```
list=[]
while True:
    x=int(input("Enter integer element of list ,press -1 to exit "))
    if(x==-1):
        break
    list.append(x)
list.sort()
print(list)
```

Output

Enter integer element of list ,press -1 to exit -2
Enter integer element of list ,press -1 to exit -3
Enter integer element of list ,press -1 to exit 99
Enter integer element of list ,press -1 to exit 87
Enter integer element of list ,press -1 to exit 100
Enter integer element of list ,press -1 to exit 5
Enter integer element of list ,press -1 to exit 6
Enter integer element of list ,press -1 to exit -1
[-3, -2, 5, 6, 87, 99, 100]

Program 4

```
list=[]
while True:
    x=int(input("Enter integer element of list ,press -1 to exit "))
    if(x==-1):
        break
    list.append(x)
y=int(input("Enter index of element you want to find "))
try:
    print("Index is",list.index(y))
except:
    print("Index not found")
```

Output

Enter integer element of list ,press -1 to exit 5
Enter integer element of list ,press -1 to exit 6
Enter integer element of list ,press -1 to exit 6
Enter integer element of list ,press -1 to exit 7
Enter integer element of list ,press -1 to exit 8
Enter integer element of list ,press -1 to exit -1
Enter index of element you want to find 7

Index is 3

Program 5

```
list=[]
list1=[1,2,3]
list2=[-1,-3,-2]
list.append(list1)
list.append(list2)
print(list)

a=[]
while(1):
    b=[]
    choice=input("enter choice yes or no ")
    if(choice=="no"):
        break
    while(1):
        x=int(input("enter a number,enter -1 to exit "))
        if(x==-1):
            break
        b.append(x)
    a.append(b)

print(a)
```

Output

```
[[1, 2, 3], [-1, -3, -2]]
enter choice yes or no yes
enter a number,enter -1 to exit 4
enter a number,enter -1 to exit 5
enter a number,enter -1 to exit 6
enter a number,enter -1 to exit -1
enter choice yes or no yes
enter a number,enter -1 to exit 7
enter a number,enter -1 to exit 8
enter a number,enter -1 to exit 9
enter a number,enter -1 to exit -1
enter choice yes or no no
[[4, 5, 6], [7, 8, 9]]
```

Program 6

```
l1=[]
```

```
l2=[]
while True:
    x=input("Enter element of list 1 1,press -1 to exit ")
    if(x=="-1"):
        break
    l1.append(x)

while True:
    x=input("Enter element of list 2,press -1 to exit ")
    if(x=="-1"):
        break
    l2.append(x)
fl=0
if(len(l1)!=len(l2)):
    print("Not same list")
    fl=-1
else:
    for i in range(len(l1)):
        if(l1[i]!=l2[i]):
            fl=1
            break
if fl==0:
    print("Same List")
elif fl==1:
     print("Not same list")
```

Output

Enter element of list 1 1,press -1 to exit 5
Enter element of list 1 1,press -1 to exit 6
Enter element of list 1 1,press -1 to exit 8
Enter element of list 1 1,press -1 to exit -1
Enter element of list 2,press -1 to exit 5
Enter element of list 2,press -1 to exit 6
Enter element of list 2,press -1 to exit 8
Enter element of list 2,press -1 to exit -1
Same List

Questionnaires:

1) Why lists are called mutable?

Ans. lists are mutable in python because elements of list can be modified, individual elements can be replaced, and order of elements can be changed even after list has been created.

Example
```
list = [ ]  # Here list is empty
list.append(1)  # New size of list changes to 1
list.remove(1)  # Size of list changes to zero
list = [1,2,3]  # list initialized again
list[1] = 4  # Element at 1st index modified
list = [1, "array"]  # Heterogenous elements can be stored
```

2) What are advantages of list compared to array in C.

Ans:

Advantages of list in Python

- length of list can be increased decreased during program.
- list can have heterogenous data.
- Entire list without loop can be printed without looping
- list can be initially of size zero.

Disadvantage of array in C

- When an array is created a particular length is assigned to it, which cannot be changed throughout program.
- Array can only have homogenous data.
- Array can be printed with help of loop.
- Array cannot be initially of size 0.