5.Write a python program to implement List operations (Nested List, Length, Concatenation, Membership, Iteration, Indexing and Slicing)?

Program:

```
print(" 1:Nested list \n 2.lenght \n 3.concatenation \n 4.membership \n 5.indexing \n 6.slicing")
x=int(input("Enter the choice to perform from above operations"))
if x==1:
    Nested_List = [10, 20, 30,['a', 'b', 'c'], 50]
    Sub_List = Nested_List[3]
    data = Nested_List[3][1]
    print("List inside the nested list: ", Sub_List)
    print("Second element of the sublist: ", data)
elif x==2:
    list=[10,20,30,40,50,60]
    l=len(list)
    print(l)
elif x==3:
    a="ROCKSATR"
    b="ROHITH"
    c=a+b
    print(c)
elif x==4:
    a=[1,2,3,4,5,6]
    p= 2 in a
    q= 4 not in a
    r= 10 in a
    print("p statement is:",p)
    print("q statement is:",q)
    print("r statement is:",r)
elif x==5:
    l=[5,10,15,20,25]
    print("indexing 1st element",l[0])
    print("indexing 3rd element",l[2])
elif x==6:
    a=[10,20,30,40,50]
    print("first four elements are:",a[0:3])
    print("last element is:",a[-1])
else:
    print("Invalid input")
```

OUTPUT:

IDLE Shell 3.10.4

File Edit Shell Debug Options Window Help

```
Python 3.10.4 (tags/v3.10.4:9d38120, Mar 23 2022, 23:13:41) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========= RESTART: C:\Users\Rohith kumar\OneDrive\Desktop\AI LAB\5..py =========
 1:Nested list
 2.lenght
 3.concatenation
 4.membership
 5.indexing
 6.slicing
Enter the choice to perform from above operations1
List inside the nested list:  ['a', 'b', 'c']
Second element of the sublist:  b
>>>
========= RESTART: C:\Users\Rohith kumar\OneDrive\Desktop\AI LAB\5..py =========
 1:Nested list
 2.lenght
 3.concatenation
 4.membership
 5.indexing
 6.slicing
Enter the choice to perform from above operations2
6
>>>
========= RESTART: C:\Users\Rohith kumar\OneDrive\Desktop\AI LAB\5..py =========
 1:Nested list
 2.lenght
 3.concatenation
 4.membership
 5.indexing
 6.slicing
Enter the choice to perform from above operations3
ROCKSATRROHITH
>>>
========= RESTART: C:\Users\Rohith kumar\OneDrive\Desktop\AI LAB\5..py =========
 1:Nested list
 2.lenght
 3.concatenation
 4.membership
 5.indexing
 6.slicing
Enter the choice to perform from above operations4
p statement is: True
q statement is: False
r statement is: False
>>>
```

```
 1:Nested list
 2.lenght
 3.concatenation
 4.membership
 5.indexing
 6.slicing
Enter the choice to perform from above operations5
indexing 1st element 5
indexing 3rd element 15

========= RESTART: C:\Users\Rohith kumar\OneDrive\Desktop\AI LAB\5..py =========
 1:Nested list
 2.lenght
 3.concatenation
 4.membership
 5.indexing
 6.slicing
Enter the choice to perform from above operations6
first four elements are: [10, 20, 30]
last element is: 50
```