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**QUESTION NO 1:**

class Node:

def \_init\_(self,data):

self.data=data

self.next=None

class S\_\_List:

def \_init\_(self):

self.head=None

self.ctr=0

def Val\_President(self,data):

node=Node(data)

if self.head==None:

self.head=node

else:

node.next=self.head

self.head=node

self.ctr+=1

def Val\_member(self,pos,data):

if pos==0:

self.Val\_President(data)

elif pos==self.ctr+1:

self.Val\_secretary(data)

else:

node=Node(data)

temp=self.head

i=0

while(i<int(pos)-1):

temp=temp.next

i+=1

node.next=temp.next

temp.next=node

self.ctr+=1

def Val\_secretary(self,data):

node=Node(data)

if self.head==Node:

self.head=node

temp=self.head

while(temp.next is not None):

temp=temp.next

temp.next=node

self.ctr+=1

def Del\_president(self):

if self.head==None:

print("Error empty list")

elif self.ctr==1:

self.head=None

self.ctr-=1

else:

self.head=self.head.next

self.ctr-=1

def Del\_secretary(self):

if self.ctr==0:

print("ERROR EMPTY LIST")

elif self.ctr==1:

self.ctr=0

self.head=None

else:

temp=self.head

prev=self.head

while(temp.next is not None):

prev = temp

temp=temp.next

prev.data=None

self.ctr-=1

def Del\_Member(self,pos):

if self.head==None:

print("Error ")

elif pos==0:

self.Del\_president()

elif pos==self.ctr:

self.Del\_secretary()

else:

temp=self.head

prev=temp

i=0

while (i<pos):

prev=temp

temp=temp.next

i+=1

prev.next=temp.next

temp.next=None

self.ctr-=1

def printe(self):

temp=self.head

lst=[]

while temp!=None:

lst.append(temp.data)

temp=temp.next

print(lst)

def Reversing\_list(self):

prev=None

current=self.head

while(current is not None):

next=current.next

current.next=prev

prev=current

current=next

self.head=prev

def print\_ctr(self):

return self.ctr

def menu(self):

print("1. Insert at beginning")

print("2. Insert at middle")

print("3. Insert at end")

print("4. Delete at beginning")

print("5. Delete at middle")

print("6. Delete at end")

print("7. Total members")

print("8. Count number of nodes")

print("9. Exit")

ch=eval(input("Enter choice:"))

return ch

l=S\_\_List()

end=''

while end!='N':

end=input("Do you want to end this crap?")

#end=end.title()

ch=l.menu()

if ch==1:

data=input("Enter data:")

l.Val\_President(data)

elif ch==2:

data=(input("Enter data:"))

pos=(input("Enter the position:"))

l.Val\_member(pos,data)

elif ch==3:

data=(input("Enter data:"))

l.Val\_secretary(data)

elif ch==4:

l.Del\_president()

elif ch==5:

pos=(input("Enter position:"))

l.Del\_Member(pos)

elif ch==6:

l.Del\_secretary()

elif ch==7:

print(l.print\_ctr())

elif ch==8:

l.Reversing\_list()

elif ch==9:

l.printe()