class Node:

def \_\_init\_\_(self, data):

self.data = data

self.next = None

head = None

def insert\_begin(data):

global head

newnode = Node(data)

newnode.next = head

head = newnode

def insert\_end(data):

global head

newnode = Node(data)

if head is None:

head = newnode

else:

tmp = head

while tmp.next is not None:

tmp = tmp.next

tmp.next = newnode

def insert\_middle(x, data): # insert after x

global head

tmp = head

while tmp is not None and tmp.data != x:

tmp = tmp.next

if tmp is not None:

newnode = Node(data)

newnode.next = tmp.next

tmp.next = newnode

def delete\_begin():

global head

if head is not None:

tmp = head

head = head.next

tmp = None

def delete\_end():

global head

if head is not None:

tmp = head

if tmp.next is None:

head = None

else:

while tmp.next.next is not None:

tmp = tmp.next

tmp.next = None

def delete\_middle(x): # delete node with data x

global head

tmp = head

prev = None

while tmp is not None and tmp.data != x:

prev = tmp

tmp = tmp.next

if tmp is not None:

if prev is not None:

prev.next = tmp.next

else:

head = tmp.next

del tmp

def search(x):

global head

tmp = head

pos = 1

while tmp is not None:

if tmp.data == x:

print(f"{x} found at position {pos}")

return

tmp = tmp.next

pos += 1

print(f"{x} not found")

def display():

global head

tmp = head

while tmp is not None:

print(tmp.data, end=" -> ")

tmp = tmp.next

print("NULL")

while True:

print("\n1.Insert Begin\n2.Insert End\n3.Insert Middle")

print("4.Delete Begin\n5.Delete End\n6.Delete Middle")

print("7.Search\n8.Display\n9.Exit")

ch = input("Enter your choice: ")

if ch == '1':

insert\_begin(input("Enter song: "))

elif ch == '2':

insert\_end(input("Enter song: "))

elif ch == '3':

x = input("Insert after which song? ")

data = input("Enter song to insert: ")

insert\_middle(x, data)

elif ch == '4':

delete\_begin()

elif ch == '5':

delete\_end()

elif ch == '6':

x = input("Enter song to delete: ")

delete\_middle(x)

elif ch == '7':

x = input("Enter song to search: ")

search(x)

elif ch == '8':

display()

elif ch == '9':

break