**# Program for Data structure algorithms using python - searching and sorting**

def Lsearch(list, n, b):

c = 0

for c in range(n):

if list[c] == b:

print("The number",b," is found !!!")

return

print("The number ",b," is not found !!!")

def Bsearch(list, n, num):

f = 0

l = len(list) - 1

while(f <= l):

m = (f + l) // 2

if(list[m] < num):

f = m+1

elif(list[m] == num):

print("The number ",num," found!!")

break

elif(list[m] > num):

l = m-1

m = (f + l) // 2

if(f>l):

print("The number ",num," is not found !!")

def Bsort(list, n):

i = j = 0

for i in range(n - 1):

for j in range(n - 1 - i):

if(list[j] > list[j+1]):

t = list[j]

list[j] = list[j+1]

list[j+1] = t

list = []

i = 0

ch = 0

n = int(input("Enter how many numbers you want to insert : "))

print()

print("Enter the numbers you want to perform operation on :-")

for i in range(n):

num = int(input())

list.append(num)

print('You entered the following numbers')

for i in range(n):

print(list[i])

while(ch < 4):

print("1. Linear Search\n2. Binary Search\n3. Bubble Sort\n4. Exit....")

ch = int(input("Enter your choice : "))

if ch == 1:

b = int(input("Enter the number you Want to search :"))

Lsearch(list, n, b)

elif ch == 2:

num = int(input("Enter the number you Want to search :"))

Bsearch(list, n, num)

elif ch == 3:

Bsort(list,n)

print("The numbers sorted by Bubble sort :-")

for i in range(n):

print(list[i])

elif ch == 4:

print('Thank you for visiting !!!')

break

else:

print("You Entered the Wrong choice !!!")

**#Output :-**

Python 3.9.5 (tags/v3.9.5:0a7dcbd, May 3 2021, 17:27:52) [MSC v.1928 64 bit (AMD64)] on win32

Type "help", "copyright", "credits" or "license()" for more information.

>>>

= RESTART: C:/Users/Chetana Mahajan/AppData/Local/Programs/Python/Python39/asi5.py

Enter how many numbers you want to insert : 10

Enter the numbers you want to perform operation on :-

16

37

59

71

94

29

41

66

83

0

You entered the following numbers

16

37

59

71

94

29

41

66

83

0

1. Linear Search

2. Binary Search

3. Bubble Sort

4. Exit....

Enter your choice : 1

Enter the number you Want to search :71

The number 71 is found !!!

1. Linear Search

2. Binary Search

3. Bubble Sort

4. Exit....

Enter your choice : 1

Enter the number you Want to search :22

The number 22 is not found !!!

1. Linear Search

2. Binary Search

3. Bubble Sort

4. Exit....

Enter your choice : 2

Enter the number you Want to search :94

The number 94 found!!

1. Linear Search

2. Binary Search

3. Bubble Sort

4. Exit....

Enter your choice : 2

Enter the number you Want to search :33

The number 33 is not found !!

1. Linear Search

2. Binary Search

3. Bubble Sort

4. Exit....

Enter your choice : 3

The numbers sorted by Bubble sort :-

0

16

29

37

41

59

66

71

83

94

1. Linear Search

2. Binary Search

3. Bubble Sort

4. Exit....

Enter your choice : 4

Thank you for visiting !!!