Name : Shruti Mohan Baravkar

Exam seat no:

Roll no: SE 265

Batch no: B1

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**ASSIGNMENT NO : 05**

Write a python program to store first year percentage of students in an array. Write function for sorting array of floating point numbers in ascending order using:

a) Selection Sort

b) Bubble Sort and display top five scores

# Function for Selection Sort of elements

def Selection\_Sort(marks):

for i in range(len(marks)):

# Find the minimum element in remaining unsorted array

min\_idx = i

for j in range(i + 1, len(marks)):

if marks[min\_idx] > marks[j]:

min\_idx = j

# Swap the minimum element with the first element

marks[i], marks[min\_idx] = marks[min\_idx], marks[i]

print("Marks of students after performing Selection Sort on the list : ")

for i in range(len(marks)):

print(marks[i])

# Function for Bubble Sort of elements

def Bubble\_Sort(marks):

n = len(marks)

# Traverse through all array elements

for i in range(n - 1):

# Last i elements are already in place

for j in range(0, n - i - 1):

# Traverse the array from 0 to n-i-1

# Swap if the element found is greater than the next element

if marks[j] > marks[j + 1]:

marks[j], marks[j + 1] = marks[j + 1], marks[j]

print("Marks of students after performing Bubble Sort on the list :")

for i in range(len(marks)):

print(marks[i])

# Function for displaying top five marks

def top\_five\_marks(marks):

print("Top",len(marks),"Marks are : ")

print(\*marks[::-1], sep="\n")

# Main

marks=[]

n = int(input("Enter number of students whose marks are to be displayed : "))

print("Enter marks for",n,"students (Press ENTER after every students marks): ")

for i in range(0, n):

ele = int(input())

marks.append(ele) # adding the element

print("The marks of",n,"students are : ")

print(marks)

flag=1;

while flag==1:

print("\n---------------MENU---------------")

print("1. Selection Sort of the marks")

print("2. Bubble Sort of the marks")

print("3. Exit")

ch=int(input("\n\nEnter your choice (from 1 to 3) : "))

if ch==1:

Selection\_Sort(marks)

a=input("\nDo you want to display top marks from the list (yes/no) : ")

if a=='yes':

top\_five\_marks(marks)

else:

print("\nThanks for using this program!")

flag=0

elif ch==2:

Bubble\_Sort(marks)

a = input("\nDo you want to display top five marks from the list (yes/no) : ")

if a == 'yes':

top\_five\_marks(marks)

else:

print("\nThanks for using this program!")

flag = 0

elif ch==3:

print("\nThanks for using this program!!")

flag=0

else:

print("\nEnter a valid choice!!")

print("\nThanks for using this program!!")

flag=0

**Output:**

Enter number of students whose marks are to be displayed : 5

Enter marks for 5 students (Press ENTER after every students marks):

80

95

68

45

78

The marks of 5 students are :

[80, 95, 68, 45, 78]

---------------MENU---------------

1. Selection Sort of the marks

2. Bubble Sort of the marks

3. Exit

Enter your choice (from 1 to 3) : 1

Marks of students after performing Selection Sort on the list :

45

68

78

80

95

Do you want to display top marks from the list (yes/no) : yes

Top 5 Marks are :

95

80

78

68

45

---------------MENU---------------

1. Selection Sort of the marks

2. Bubble Sort of the marks

3. Exit

Enter your choice (from 1 to 3) : 2

Marks of students after performing Bubble Sort on the list :

45

68

78

80

95

Do you want to display top five marks from the list (yes/no) : yes

Top 5 Marks are :

95

80

78

68

45

---------------MENU---------------

1. Selection Sort of the marks

2. Bubble Sort of the marks

3. Exit

Enter your choice (from 1 to 3) : 3

Thanks for using this program!