"""

Group B - Assignment 16

Write a python program to store first year percentage of students in array.

Write function for sorting array of floating point numbers in ascending order

using quick sort and display top five scores..

"""

def accept\_array(A):

n = int(input("Enter the total no. of student : "))

for i in range(n):

x = float(input("Enter the first year percentage of student %d : "%(i+1)))

A.append(x)

print("Array accepted successfully\n\n");

def display\_array(A):

n = len(A)

if(n == 0) :

print("\nNo records in the database")

else :

print("Array of FE Marks : ",end=' ')

for i in range(n) :

print("%.2f "%A[i],end=' ')

print("\n");

def partition(A,s,l) :

b=s+1

e=l

while(e>=b) :

while(b<=l and A[s] >= A[b]) :

b = b + 1

while(A[s] <A[e]) :

e = e - 1

if(e>b) :

temp = A[e]

A[e] = A[b]

A[b] = temp

temp = A[s]

A[s] = A[e]

A[e] = temp

return e

def Quicksort(A,s,l) :

if(s<l) :

mid = partition(A,s,l)

Quicksort(A,s,mid-1)

Quicksort(A,mid+1,l)

def Main() :

A = []

while True :

print ("\t1 : Accept & Display the FE Marks")

print ("\t2 : Quick sort ascending order and display top five scores")

print ("\t3 : Exit")

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

if (ch == 3):

print ("End of Program")

quit()

elif (ch==1):

A = []

accept\_array(A)

display\_array(A)

elif (ch==2):

print("Marks before sorting")

display\_array(A)

n =len(A)

Quicksort(A,0,n-1)

print("Marks after sorting")

display\_array(A)

if(n >= 5) :

print("Top Five Scores : ")

for i in range(n-1,n-6,-1) :

print("\t%.2f"%A[i])

else :

print("Top Scorers : ")

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

print("\t%.2f"%A[i])

else :

print ("Wrong choice entered !! Try again")

Main()