**Assignment- B06**

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**Roll No.:08**

**Problem Statement:**

# 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.

**Program:**

#Quick Sort

def partition(A, lb, ub):

    pivot = lb

    i = lb + 1

    j = ub

    while i <= j:

        while i <= ub and A[pivot] >= A[i]:

            i = i + 1

        while A[pivot] < A[j]:

            j = j - 1

        if i < j:

            temp = A[i]

            A[i] = A[j]

            A[j] = temp

    temp = A[pivot]

    A[pivot] = A[j]

    A[j] = temp

    return j

def Quick\_Sort(A, lb, ub):

    if lb < ub:

        mid = partition(A, lb, ub)

        Quick\_Sort(A, lb, mid - 1)

        Quick\_Sort(A, mid + 1, ub)

def Accept\_Per(A):

    n = int(input("Enter the total Strength of class :"))

    for i in range(n):

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

        A.append(x)

def Display\_Per(A):

    print("Percentage of students are:")

    for i in range(len(A)):

        print("%.2f" % A[i])

def main():

    A = []

    while True:

        print("\nPress 1. to accept and display :")

        print("\n Press 2. Quick sort :")

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

        if ch == 3:

            print("End of program")

            quit()

        elif ch == 1:

            Accept\_Per(A)

            Display\_Per(A)

        elif ch == 2:

            n = len(A)

            Quick\_Sort(A, 0, n - 1)

            Display\_Per(A)

main()

**Output:**

