

**NATIONAL PUBLIC SCHOOL HSR, BANGALORE**  
**COMPUTER SCIENCE ASSIGNMENT -3- 2023-24**

**LIST**

Q1 Write a menu driven program in PYTHON which accepts an integer list A from user and sort the list in ascending order using bubble sort. Also shuffle the list as per the given criteria:-  
Generate randomly the index no.(as per the size of the list) and swap first element with generated index no, keep doing it till you reach the end of the list.

Menu should be:-

- i) Sorting
  - a) Bubble Sort (Ask if ascending and descending order)
  - b) Insertion Sort
- ii) Display
- iii) Shuffle
- iv) exit

Q2 Write a Menu Driven program to store a matrix in list of size specified by the user(r x c)  
Perform the following operations.

- a) Swap the first and the last row elements
- b) Swap the first and the last column elements
- c) Find the sum of middle row elements and middle column elements (if any)
- d) Sum the alternate elements of the list.(Move Row wise)
- e) Transpose of the matrix
- f) Display of the matrix

(Note: Don't use another list for the list manipulation)

Q3. Write a menu driven program to read a list of integer type and perform the following operation :

- Reverse each element of the list and display it.
- Swap the consequent elements of the list and display it.

Note: (don't use list functions/ statements like reverse. Also don't use a new list

Example: If the list is [345,234,765,564,376]

The output list should be [432,543,465,567,673] (if number of elements is odd the last element will not be swapped)