* Data Structure Lab (DSL) - Parbetical Number - 5 (Group - B)

Name :- Kaustubh Shrikant Kabra
Class :- Second Year Engineering
Div :- A Roll Number :-
Batch :-
Department :- Computer Department
College :- AISSMS's IOIT.

Title :-
Write a python program to perform selection and bubble sort.

Aim :-
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.
1) Selection Sort
2) Bubble sort and display top five scores.

Objective :-
1) To study the concept of array in python.
2) To learn and understand selection sort.
3) To learn and understand bubble sort.

Theory :-
Bubble Sort :-
This is the simplest kind of sorting method. It is performed in several iterations which are called passes. In this

algorithm, the adjacent elements are compared and their positions are swapped if they are not in intended order.

Selection Sort :-

Selection sort is an algorithm that selects the smallest element from an unsorted array in each interation and places that element at the begining of the unsorted list.

Algorithm :-

Step 1 - Start

Step 2 - Display menu to user and accept his choice.

Step 3 - If user enter 1, then accept the total number of students and their percentage. Store their percentage in an array.

Step 4 - If user enter 2, then display the percentage.

Step 5 - If user enter 3, then sort the array using bubble sort technique.

Step 6 - Display the sorted array and the top five scores.

Step 7 - If user enters 4, then sort the array using selection sort technique

Step 8 - Display the sorted array and the top five scores.

Step 9 - Go to step 2, if user wants to continue.

Step 10 - Stop

Analysis :-
The time complexity of bubble sort is $O(n \log n)$ and the time complexity of selection sort is $O(n^2)$.

Conclusion:-
Hence, we have performed selection sort and bubble sort on an array.