* Data Structure Lab (DSL) - Practical Number - 6 (Group - B)

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Title :-
Write a python program to demonstrate quick sort.

Aim :-
Write a python program to store first year percentage of student in array. Write function for sorting array of floating point numbers in ascending order using quick sort and display top five scores.

Objective :-
To learn and implement quick sort on array of floating numbers.

Theory :-
Quick Sort :-
Quick Sort is an algorithm based on divide and conquer approach in which the array is split into subarrays and these subarrays are recursively called to sort elements.

Algorithm :-

Step 1 - Start

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

Step 3 - If user enter 1, then accept the percentage and store them in an array for N students.

Step 4 - If user enter 2, then print the percentage for all the students.

Step 5 - If user enter 3, then sort the percentage using quick sort technique is ascending order.

Step 6 - Store the sorted percentage in another array.

Step 7 - Display the sorted percentage.

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

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

Step 10 - Stop.

Analysis :-

The worst case time complexity of quick sort is $O(n^2)$ and average case is $O(n \log n)$.

Conclusion :-

Hence we have demonstrated quick sort on an array.