Lab Assignment: Selection Sort

Problem Statement

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Given an unsorted array of integers, write a C function to sort the array in ascending order using the Selection Sort algorithm.

Example:

Input:  arr = [64, 25, 12, 22, 11]

Output: arr = [11, 12, 22, 25, 64]

Explanation:

Selection Sort works by repeatedly finding the minimum element from the unsorted portion and placing it at the beginning.

Logic: Selection Sort

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Selection Sort divides the array into two parts:

- The subarray of items already sorted.

- The remaining subarray of items to be sorted.

For each position in the array:

1. Find the minimum element in the unsorted portion.

2. Swap it with the element at the current position.

This algorithm performs well for small datasets and is easy to implement, although its time

complexity is not efficient for large datasets.

Time Complexity: O(n^2)

Space Complexity: O(1)

Function Signature (C Language)

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void selectionSort(int arr[], int size);

- arr[]: the input array of integers
- size: the number of elements in the array
- The function modifies the array in-place to sort it in ascending order.

Task

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- Implement the selectionSort function in C.
- Your function should sort the array in ascending order using the selection sort algorithm.
- Do not use any built-in sorting functions.