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CSE-AI

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BUBBLE SORT:

```
#include <stdio.h>
void bubbleSort(int arr[], int n) {
    for (int i = 0; i < n - 1; i++) {
        for (int j = 0; j < n - i - 1; j++) {
            if (arr[j] > arr[j + 1]) {
                // Swap arr[j] and arr[j + 1]
                int temp = arr[j];
                arr[j] = arr[j + 1];
                arr[j + 1] = temp;
            }
        }
    }
}

void printArray(int arr[], int n) {
    for (int i = 0; i < n; i++) {
        printf("%d ", arr[i]);
    }
    printf("\n");
```

```
}

int main() {
    int arr[] = {64, 34, 25, 12, 22, 11, 90};
    int n = sizeof(arr) / sizeof(arr[0]);

    printf("Original array: ");
    printArray(arr, n);

    bubbleSort(arr, n);

    printf("Sorted array: ");
    printArray(arr, n);

    return 0;
}
```

Output:

Original array: 64 34 25 12 22 11 90

Sorted array: 11 12 22 25 34 64 90

SELECTION SORT:

```
#include <stdio.h>
```

```
void selectionSort(int arr[], int n) {
    for (int i = 0; i < n - 1; i++) {
        int minIndex = i;

        // Find the minimum element in the unsorted part of the array
        for (int j = i + 1; j < n; j++) {
            if (arr[j] < arr[minIndex]) {
                minIndex = j;
            }
        }

        // Swap the found minimum element with the first element of the unsorted part
        int temp = arr[minIndex];
        arr[minIndex] = arr[i];
        arr[i] = temp;
    }
}

void printArray(int arr[], int n) {
    for (int i = 0; i < n; i++) {
        printf("%d ", arr[i]);
    }
    printf("\n");
}

int main() {
```

```
    int arr[] = {64, 34, 25, 12, 22, 11, 90};
    int n = sizeof(arr) / sizeof(arr[0]);

    printf("Original array: ");
    printArray(arr, n);

    selectionSort(arr, n);

    printf("Sorted array: ");
    printArray(arr, n);

    return 0;
}
```

Output:

Original array: 64 34 25 12 22 11 90

Sorted array: 11 12 22 25 34 64 90