

Bubble Sort Code In C++

```
#include <iostream>
using namespace std;

// Bubble Sort function
void bubbleSort(int arr[], int n) {
    for (int i = 0; i < n - 1; i++) {
        // Optimization: check if any swap happened
        bool swapped = false;

        // Last i elements are already in place
        for (int j = 0; j < n - i - 1; j++) {
            if (arr[j] > arr[j + 1]) {
                // Swap the elements
                int temp = arr[j];
                arr[j] = arr[j + 1];
                arr[j + 1] = temp;

                swapped = true;
            }
        }

        // If no swap happened, array is already sorted
        if (!swapped)
            break;
    }
}

// Function to print array
void printArray(int arr[], int n) {
    for (int i = 0; i < n; i++) {
        cout << arr[i] << " ";
    }
    cout << endl;
}
```

```
int main() {  
    int arr[] = {64, 34, 25, 12, 22, 11, 90};  
    int n = sizeof(arr) / sizeof(arr[0]);  
  
    cout << "Original array: ";  
    printArray(arr, n);  
  
    bubbleSort(arr, n);  
  
    cout << "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

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