Bubble Sort is the simplest sorting algorithm that works by repeatedly swapping the adjacent elements if they are in wrong order.  
**Example:**   
**First Pass:**   
( **5** **1** 4 2 8 ) –> ( **1** **5** 4 2 8 ), Here, algorithm compares the first two elements, and swaps since 5 > 1.   
( 1 **5** **4** 2 8 ) –>  ( 1 **4** **5** 2 8 ), Swap since 5 > 4   
( 1 4 **5** **2** 8 ) –>  ( 1 4 **2** **5** 8 ), Swap since 5 > 2   
( 1 4 2 **5** **8** ) –> ( 1 4 2 **5** **8** ), Now, since these elements are already in order (8 > 5), algorithm does not swap them.  
**Second Pass:**   
( **1** **4** 2 5 8 ) –> ( **1** **4** 2 5 8 )   
( 1 **4** **2** 5 8 ) –> ( 1 **2** **4** 5 8 ), Swap since 4 > 2   
( 1 2 **4** **5** 8 ) –> ( 1 2 **4** **5** 8 )   
( 1 2 4 **5** **8** ) –>  ( 1 2 4 **5** **8** )   
Now, the array is already sorted, but our algorithm does not know if it is completed. The algorithm needs one **whole** pass without **any** swap to know it is sorted.  
**Third Pass:**   
( **1** **2** 4 5 8 ) –> ( **1** **2** 4 5 8 )   
( 1 **2** **4** 5 8 ) –> ( 1 **2** **4** 5 8 )   
( 1 2 **4** **5** 8 ) –> ( 1 2 **4** **5** 8 )   
( 1 2 4 **5** **8** ) –> ( 1 2 4 **5** **8** ) 

[Recommended: Please solve it on “***PRACTICE*** ” first, before moving on to the solution.](https://practice.geeksforgeeks.org/problems/bubble-sort/1)

Following is the implementations of Bubble Sort. 

* C++
* C
* Java
* Python
* C#
* PHP
* Javascript

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| --- |
| // C++ program for implementation of Bubble sort  #include <bits/stdc++.h>  using namespace std;    void swap(int \*xp, int \*yp)  {      int temp = \*xp;      \*xp = \*yp;      \*yp = temp;  }    // A function to implement bubble sort  void bubbleSort(int arr[], int n)  {      int i, j;      for (i = 0; i < n-1; i++)        // Last i elements are already in place      for (j = 0; j < n-i-1; j++)          if (arr[j] > arr[j+1])              swap(&arr[j], &arr[j+1]);  }    /\* Function to print an array \*/  void printArray(int arr[], int size)  {      int i;      for (i = 0; i < size; i++)          cout << arr[i] << " ";      cout << endl;  }    // Driver code  int main()  {      int arr[] = {64, 34, 25, 12, 22, 11, 90};      int n = sizeof(arr)/sizeof(arr[0]);      bubbleSort(arr, n);      cout<<"Sorted array: \n";      printArray(arr, n);      return 0;  }    // This code is contributed by rathbhupendra |