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Bubble sorting with Function templates

```
dexter04 (2)
                                                                                         Jun 22, 2013 at 2:49am
hey guys i'm new to C++ i came across this bubblesort program earlier relating to class templates i was wondering how to make this
into simple function templates
   1 #include<iostream>
   2 #include<iomanip.h>
   3 #include<conio.h>
   4 #include<stdio.h>
   5 using namespace std;
   7 template <class t>
   8 class bubble
  9 {
 10 t a[25];
 11 public:
 12 void get(int);
 13 void sort(int);
 14 void display(int);
 15 };
 16
 17 template <class t>
 18 void bubble <t>::get(int n)
 19 {
 20 int i;
 21 cout<<"Enter the array elements:\n";
 22 for(i=0; i<n;i++)
 23 cin>>a[i];
 24 }
 25
 26 template <class t>
 27 void bubble <t>::display(int n)
 28 {
 29 int i;
 30 cout<<"\nThe sorted array is\n";
 31 for(i=0;i<n;i++)
 32 cout<<a[i]<<setw(10);
 33 }
```

```
34
35 template <class t>
36 void bubble <t>::sort(int n)
37 {
38 int i,j;
39 t temp;
40 for(i=0;i<n;i++)
41 {
42 for(j=i+1; j<n; j++)
43 {
44 if(a[i]>a[j])
45 {
46 temp=a[i];
47 a[i]=a[i];
48 a[j]=temp;
49 }
50 }
51 }
52 }
53
54 int main()
55 {
56 int n,ch;
57 while(1)
58 {
59 cout<<"\n\n----BUBBLE SORT TEMPLATES----\n";
60 cout<"\nEnter your choice\n1.Integer\n2.Floating Point\n3.Character\n4.Exit\n\n";
61 cin>>ch;
62
63 switch(ch)
64 {
65
            case 1:
66
67
                  cout<<"\n### Integer Sortmenu ###\n\n";</pre>
68
                  bubble<int> b1;
69
                  cout<<"Enter the size of array:\n";</pre>
70
                  cin>>n:
71
                  bl.get(n);
72
                  b1.sort(n);
73
                  b1.display(n);
74
                  break;
75
                  };
76
                  case 2:
77
78
                       cout<<"\n### Floating Point SortMenu ###\n\n";</pre>
79
                       bubble<float> b2;
80
                       cout<<"Enter the size of array:\n";</pre>
81
                       cin>>n;
82
                       b2.get(n);
83
                       b2.sort(n);
84
                       b2.display(n);
85
                       break;
86
                       };
```

```
87
                         case 3:
88
 89
                              cout<<"\n### Character SortMenu ###\n\n";</pre>
 90
                              bubble<char> b3;
91
                              cout<<"Enter the size of array:\n";</pre>
92
                              cin>>n:
93
                              b3.get(n);
 94
                              b3.sort(n);
95
                              b3.display(n);
 96
                              break;
 97
                              };
98
                              case 4:
99
100
                                    cout<<"<Pre>rogram terminating>";
101
                                    exit(0);
102
                                    };
103
                              default:
                                       cout<<"Invalid Choice try again!\n";</pre>
104
105
                                       return 0;
106
107
108
109 getch();
110 }
```

Thanks dexter

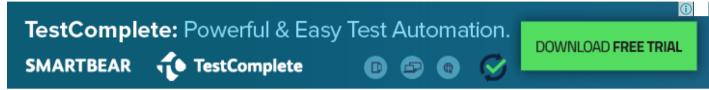
```
JLBorges (9305)
                                                                                               Jun 22, 2013 at 5:09am
Identical to your code for the member function sort().
Except that the array (pointer to first element) is an extra parameter:
  1 // template <class t>
  2 // void bubble <t>::sort(int n)
  3 template < typename T > void bubble_sort( T a[], int n )
  4 {
  5
         int i,j;
  6
         //t temp;
  7
         T temp ;
  8
         for(i=0; i<n; i++)</pre>
  9
 10
              for(j=i+1; j<n; j++)</pre>
 11
 12
                  if(a[i]>a[j])
 13
 14
                       temp=a[i];
 15
                       a[i]=a[j];
 16
                       a[j]=temp;
 17
```

```
dexter04 (2)

What would other functions be changed into then?
```

```
JLBorges (9305)
                                                                                      Jun 22, 2013 at 4:32pm
Oh. come on!
  1 #include <iostream>
  3 template< typename T > void get( T a[], int n )
        std::cout << "enter " << n << " array elements: " ;</pre>
  5
  6
        for( int i = 0 ; i < n ; ++i ) std::cin >> a[i] ;
  7 }
  8
  9 template< typename T > void sort( T a[], int n )
 10 {
 11
        for( int i=0 ; i<n ; ++i )
 12
 13
            for( int j=i+1 ; j<n ; ++j )
 14
 15
                if( a[i] < a[i] )</pre>
 16
 17
                     int temp = a[i] ;
 18
                     a[i] = a[j];
 19
                     a[j] = temp ;
 20
 21
            }
 22
 23 }
 24
 25 template< typename T > void display( const T a[], int n )
 26 {
 27
        std::cout << "the sorted array: ";</pre>
 28
        for( int i = 0 ; i < n ; ++i ) std::cout << a[i] << ' ' ;</pre>
 29
        std::cout << '\n' ;
 30 }
 31
 32 int main()
 33 {
 34
        constexpr int N = 5;
 35
        int array[N] = \{0\};
 36
        get( array, N );
```

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