```
1 // Justin Dang Student ID: 1148267
 2 /*
 3 Sorts char arrays and int arrays
 5 known to work with the hard coded data and may not work with different arrays and >
      different sizes
 7 when sorting strings, null char will remain when sorting
 8 */
 9 #include <iostream>
10 using namespace std;
11
12 template<typename T>
13 void Sort(T a[], int arrSize) {
14
       T temp;
        if (a[0] >= 'A' && a[0] <= 'a') {
                                                       // tests if the array is not
15
          an int array by checking if the first index is between a range of ascii
          values
16
            for (int i = 0; i < arrSize - 1; i++) {</pre>
                                                       // sorts char array
                for (int x = 0; x < arrSize - 1; x++) {
17
                    if (a[x] > a[x + 1]) {
18
19
                        temp = a[x];
20
                        a[x] = a[x + 1];
21
                        a[x + 1] = temp;
22
                    }
23
                }
24
            }
25
        }
26
        else {
27
            for (int i = 0; i < arrSize - 1; i++) {
                                                       // sorts int array
                for (int x = 0; x < arrSize - 1; x++) {</pre>
28
29
                    if (a[x] > a[x + 1]) {
30
                        temp = a[x];
31
                        a[x] = a[x + 1];
32
                        a[x + 1] = temp;
33
                    }
34
                }
35
            }
36
        }
37 }
38 template<typename T>
39 void Print(T a[], int arrSize) {
40
        for (int i = 0; i < arrSize; i++)</pre>
41
            cout << a[i] << ' ';
42 }
43
44 int main()
45 {
46
        const int arr1Size = 10, arr2Size = 7;
                                                                 // array sizes
47
        int arr1[arr1Size] = {10, 4, 9, 1, 2, 5, 6, 8, 7, 3}; // int array
        char arr2[arr2Size] = { 'J', 'u', 's', 't', 'i', 'n' }; // char array
48
49
```

```
C:\Users\Justin Dang\Desktop\Data Structures\Sort.cpp
```

```
2
```

```
cout << "After sorting:\n\narr1: ";</pre>
51
      Print(arr1, arr1Size);
      cout << "\n\narr2: ";</pre>
52
53
      Print(arr2, arr2Size);
54
55
      cout << "\n\n";</pre>
56
57
      Sort(arr1, arr1Size);
58
      Sort(arr2, arr2Size);
59
60
      cout << "After sorting:\n\narr1: ";</pre>
      Print(arr1, arr1Size);
61
62
      cout << "\n\narr2: ";</pre>
      Print(arr2, arr2Size);
63
64 }
65 /*//-----case 1:
66 After sorting:
68 arr1: 10 4 9 1 2 5 6 8 7 3
69
70 arr2: Justin
71
72 After sorting:
73
74 arr1: 1 2 3 4 5 6 7 8 9 10
75
76 arr2: Jinstu
77 *///-----
```