

CP2L2 Script and Output

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Listing 1: CP2L2 Script

```
1  /*
2  * =====
3  *
4  *      Filename:  CP2L2MBROD.cpp
5  *      Assignment: C++ Lab #2 Lesson 2
6  *      Title: File Input Sorter
7  *
8  *      Description: Takes in a file as an array of characters
9  *                  and sorts by ASCII values
10 *
11 *      Version:   1.0
12 *      Created:   11/08/2022
13 *      Revision:  none
14 *      Compiler:  GCC
15 *
16 *      Author:    M. Brodskiy
17 *
18 * =====
19 */
20
21 // — Libraries & Directives —
22 #include <iostream> // Needed for normal cin & cout
23 #include <fstream> // Needed to read or write files on disk
24 using namespace std;
25
26 // PROGRAM CharacterSorter
27 int main() {
28     // — Declare Variables —
29     ifstream infile;
30     // An input stream object for the text file data
```

```

31
32 char arr[100]; // An oversized array for the text characters
33
34
35 int charCount = 0; // Keep track of number of characters
36
37
38
39
40 // — Main Program —
41 // Introduce Program to user
42 cout << " — Character Sorter — " << endl;
43 cout << " Loads a text file and then sorts " << endl;
44 cout << " sorts its characters by ASCII value. "
<< endl << endl;
45
46 // Open text file as an input stream
47 infile.open("CP2L2MBROD.txt");
48
49
50 // Check the file stream
51 if (!infile) {
52     // Provide user warning
53     cout << "Warning: Unable to open file" << endl;
54     // end program with error
55     cout << "Exiting with Error" << endl;
56     return 1;
57 }
58
59 // FOR each element in the array
60 for (int i = 0; i < 100; i++) {
61
62     // load character from file stream into array element
63     infile >> arr[i];
64     // Print array element to console
65     cout << arr[i];
66
67     if (infile.eof()) break;
68
69     charCount++;
70
71 }
72 cout << endl;
73
74 cout << "Completed import of " << charCount <<

```

```

75  " characters." << endl;
76  // Sort array data using a common sorting method
77  // Use Bubblesort
78  // FOR j from 0 to
79  for (int j = 0; j < charCount; j++) {
80      // Last j elements are already in place so
81      // FOR k from
82      for (int k = 0; k < charCount - j; k++) {
83          // If element is greater than the next
84          if (arr[k] > arr[k + 1]) {
85              // Switch their positions
86              char temp = arr[k];
87              arr[k] = arr[k + 1];
88              arr[k + 1] = temp;
89          } // ENDIF
90      } // ENDFOR
91  } // ENDFOR
92
93  // Print sorted array
94  // For each used element in the array (from 0 to n)
95  for (int i = 0; i <= charCount; i++) {
96      // Print array element to console
97      cout << arr[i];
98  } // ENDFOR
99  } // ENDPROGRAM

```

Listing 2: CP2L2 Output

```

1  167Fhjil05x3cvBnMS.–DerPzXiD02JkEmVbKlaDcerSdIoUP342s8C29sAdjaMNwE
2  Completed import of 66 characters.
3  –.00122233456789ABCDDDEEFIJKMMNPPSSUVXaabccddeehijjklmnorrssvwxyz

```