

**Swinburne University Of Technology***Faculty of Science, Engineering and Technology***LABORATORY COVER SHEET**

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<b>Subject Code:</b>	COS30008
<b>Subject Title:</b>	Data Structures and Patterns
<b>Lab number and title:</b>	4, File I/O
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Consider the program `CharacterCounter` that we developed in Lab 2. Modify the solution so that the resulting program uses file input and output streams.

Be sure to include `<fstream>` and `<string>` (if you need it) in your `main.cpp`.

[Note: Only the `main.cpp` is edited for this lab. `CharacterCounter.h` and `CharacterCounter.cpp` should remain the same.]

You may refer to this on how to use `cin` and `cout` with files:

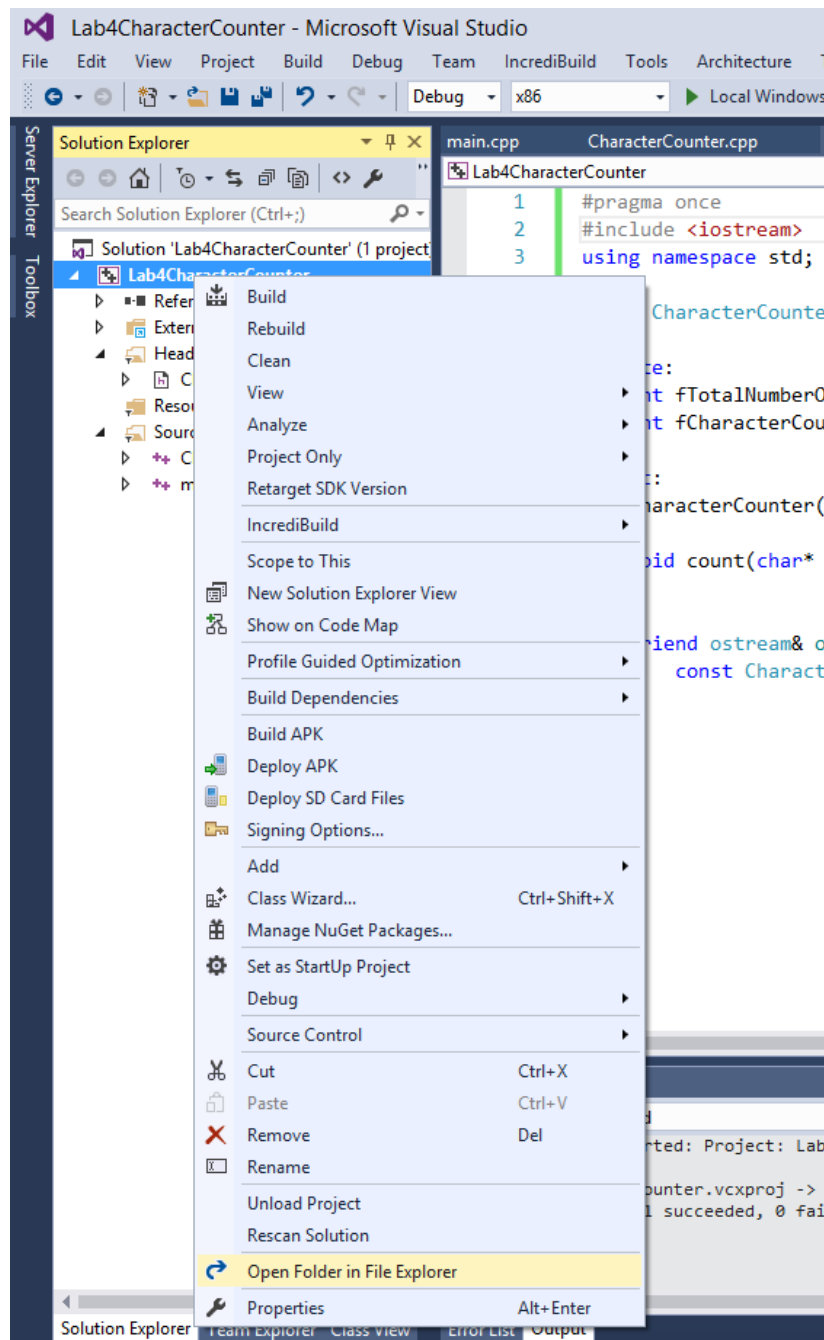
<https://stackoverflow.com/questions/10150468/how-to-redirect-cin-and-cout-to-files>

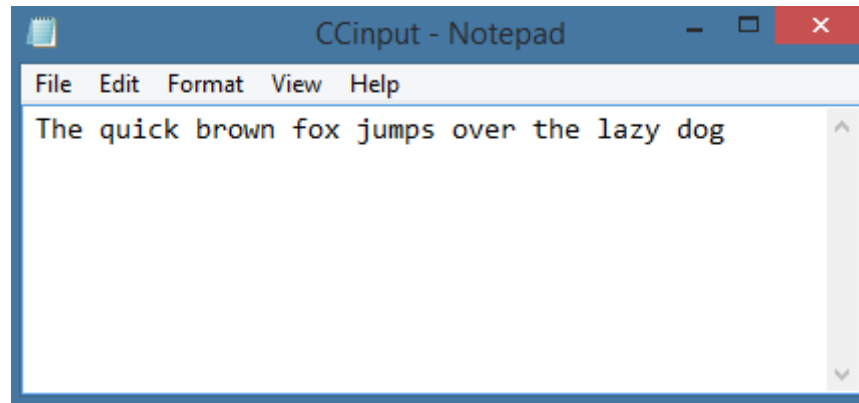
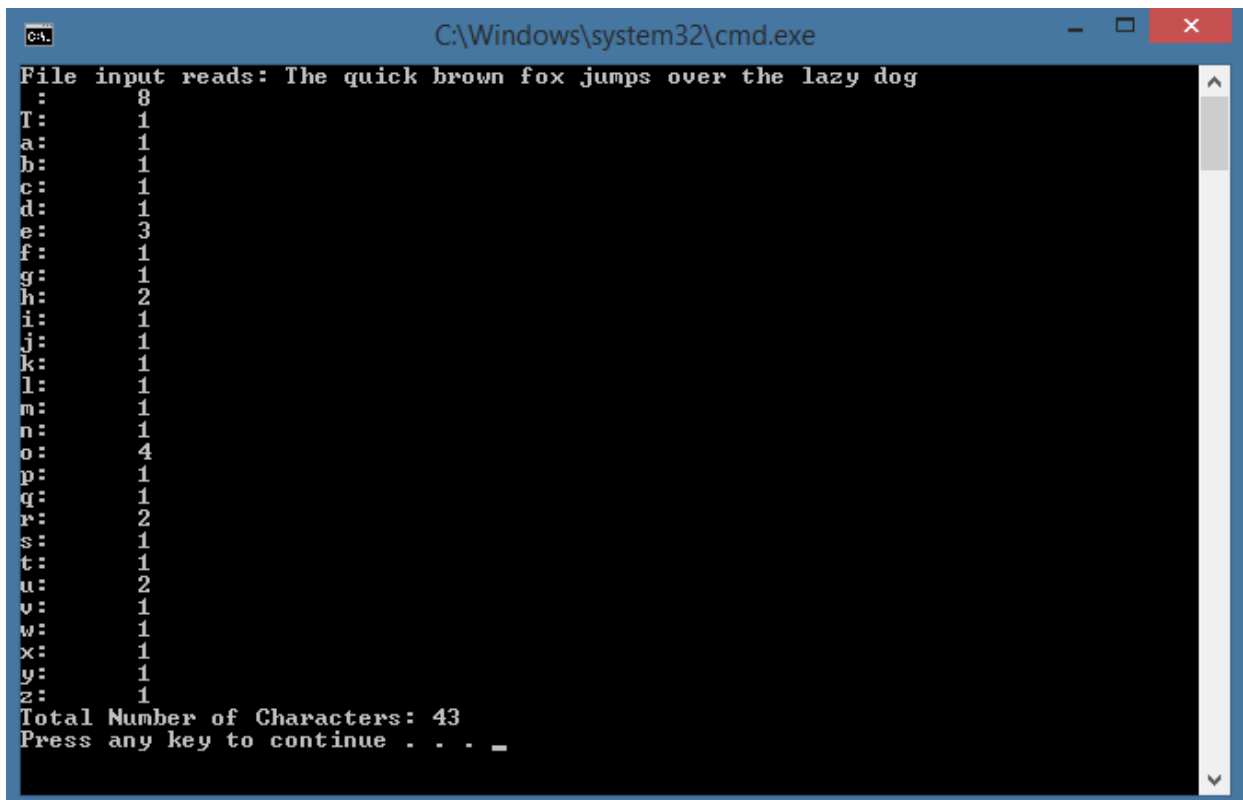
Reference for files in C++: <http://www.cplusplus.com/doc/tutorial/files/>

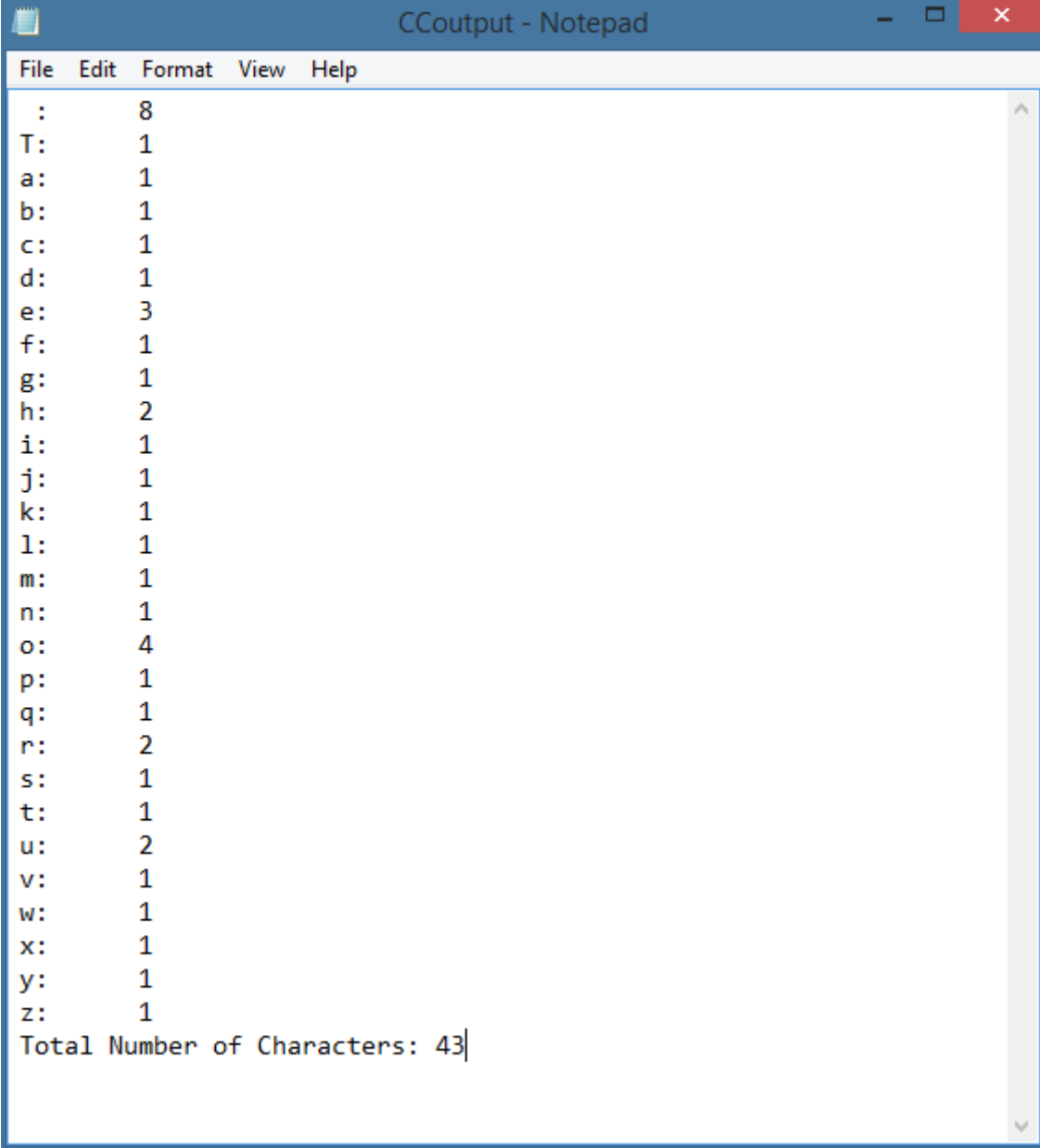
**Main.cpp should do the following:**

1. Define the `ifstream` and its filename.
2. Open the input file.
3. Store current `cin` setting, and redirect `cin` to input file.
4. Check if input file is open, else `cerr` an error and return 2.
5. If the input file is open, get input line. `Cout` this input for viewing purposes. Reset `cin` to the standard output. Close input file stream.
6. Call `CharacterCounter.count()` with the input obtained. `Cout` the `CharacterCounter` object for viewing purposes.
7. Define the `ofstream` and its filename.
8. Open the output file.
9. Store current `cout` setting, and redirect `cout` to input file.
10. Check if output file is open, else `cerr` an error and return 3.
11. If the output file is open, `cout` `CharacterCounter` object into the file. Reset `cin` to the standard output. Close output file stream.

Be sure to create an input file (CCinput.txt) containing the line of text you would like to read in your project directory. You can access the directory by right clicking your project and selecting “Open Folder in File Explorer”.



**File Input:****Console Output:**

**File Output:**

```
File Edit Format View Help
:      8
T:      1
a:      1
b:      1
c:      1
d:      1
e:      3
f:      1
g:      1
h:      2
i:      1
j:      1
k:      1
l:      1
m:      1
n:      1
o:      4
p:      1
q:      1
r:      2
s:      1
t:      1
u:      2
v:      1
w:      1
x:      1
y:      1
z:      1
Total Number of Characters: 43
```