Lab6: Files

General Instructions:

1- Create a C project in eclipse called Lab6

2- Download Lab6.zip files and extract it to a folder in your machine. Drag and drop the files to the Lab6 project.

3- Rename: "Lab6_template.txt" to "Lab6.c".

4- Add your credentials on top of the file "Lab6.c".

5- There is no testing file for this lab. You can test your results by running the main function in the "Lab6.c" file.

6- Your output will be available in "text2.txt" file. Compare the results with those of "Lab6_output.txt". You can run the validator on "text2.txt" and "Lab6_output.txt".

Instructions:

Implement the function:

```
void count_letters(const char *filename, int counters[26]);
```

The function receives a filename as a string (const char*), which will be opened for reading.

The function counts all alphabetical characters in the file. The counting is done for both uppercase and lowercase characters. The frequency of the letter 'a' (and 'A') is stored in counters[0], and the frequency of the letter 'b' (and 'B') is stored in counters[1] and so forth.

Then implement the function:

```
void write_results(const char *filename, int counters[26]);
```

The above function writes the results of the counters in the given file, in the following format, each appearing in a separate line.

```
count(<letter>) = <letter_frequency>
```

Finally, implement the following function:

```
void append_sum(const char *filename, int counters[26]);
```

The above function, sums the numbers in the given counters array and append it to the last line of the given file.

In all of the three functions, if the function fails to open the file, it should print an error message:

```
"Error(<function_name>): Could not open file <file_name>
```

Running the main function will execute the above three functions and produce the following results in "text2.txt" file:

```
count(a) = 24
count(b) = 6
count(c) = 12
count(d) = 6
count(e) = 41
count(f) = 7
count(g) = 4
count(h) = 13
count(i) = 21
count(j) = 1
count(k) = 2
count(l) = 16
count(m) = 15
count(n) = 17
count(o) = 25
count(p) = 5
count(q) = 1
count(r) = 15
count(s) = 19
count(t) = 17
count(u) = 11
count(v) = 3
count(w) = 10
count(x) = 5
count(y) = 7
count(z) = 0
Total = 303
```