CodeStepByStep

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< hoursWorked

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leetSpeak >

inputStats

Language/Type: C++ basics streams file input
Related Links: string istream

Write a function named **`inputStats`** that accepts a string parameter representing a file name, then opens/reads that file's contents and prints information to the console about the file's lines. Report the length of each line, the number of lines in the file, the length of the longest line, and the average characters per line, in exactly the format shown below. You may assume that the input file contains at least one line of input. For example, if the input file `carroll.txt` contains the following data:

```
Beware the Jabberwock, my son,
the jaws that bite, the claws that catch,

Beware the JubJub bird and shun
the frumious bandersnatch.
```

Then the call of `inputStats(”carroll.txt”);` should produce the following console output:

```
Line 1 has 30 chars
Line 2 has 41 chars
Line 3 has 0 chars
Line 4 has 31 chars
Line 5 has 26 chars
5 lines; longest = 41, average = 25.6
```

If the input file does not exist or is not readable, your function should print no output. If the file does exist, you may assume that the file contains at least 1 line of input.

Constraints: Your solution should read the file only once, not make multiple passes over the file data.

.
.
.

```
void inputStats( string filename ) {

        ifstream istrm( filename );
        string line;

        if ( !istrm.is_open() ) {

        } else {
            int i = 0;
            int longest = 0;
            double totalLengths = 0;

            for ( i = 1; getline( istrm, line); i++ ) {
                int len = line.length();
                totalLengths += len;
                cout << ”Line ” << i << ” has ” << len << ” chars” << endl;
                if ( len > longest )
                    longest = len;
            }
            cout << --i << ” lines;”;
            cout << ” longest = ” << longest << ”, average = ” << totalLengths / i << endl;
        }
        istrm.close();
    }
```

Function: Write a C++ function as described, not a complete program.

Submit

✓ You passed 4 of 4 tests.

test #1: `inputStats(”inputStats-test1-data.txt”);`

file input: inputStats-test1-data.txt:

```
Beware the Jabberwock, my son,
the jaws that bite, the claws that catch,

Beware the JubJub bird and shun
the frumious bandersnatch.
```

console output:

```
Line 1 has 30 chars
Line 2 has 41 chars
Line 3 has 0 chars
Line 4 has 31 chars
Line 5 has 26 chars
5 lines; longest = 41, average = 25.6
```

result: ✓ pass

test #2: `inputStats(”inputStats-test2-data.txt”);`

file input: inputStats-test2-data.txt:

```
Teenage Mutant Ninja Turtles,
Teenage Mutant Ninja Turtles,
Teenage Mutant Ninja Turtles,
Heroes in a half shell: turtle power!
END
```

console output:

```
Line 1 has 29 chars
Line 2 has 29 chars
Line 3 has 29 chars
Line 4 has 37 chars
Line 5 has 3 chars
5 lines; longest = 37, average = 25.4
```

result: ✓ pass

test #3: `inputStats(”inputStats-test3-data.txt”);`

file input: inputStats-test3-data.txt:

```
yo
```

console output:

```
Line 1 has 2 chars
1 lines; longest = 2, average = 2
```

result: ✓ pass

test #4: `inputStats("bogus-data.txt");`

console output:

result: ✓ pass

Need help?

Stuck on an exercise? Contact your TA or instructor.

If something seems wrong with our site, please contact us.