OOP Project Spec

Description:

You need to make a program named “compress.cpp” to compress a text file by using “Huffman Coding”. Then you need to make another program named “decompress.cpp” to decompress the compressed file.

When you are compressing the file, you need to print the size of the file before compressed, and print the frequency of lowercase vowels (小寫母音) of the whole text file.

Input:

A text file as input.
Your program should use should use the filename as the argument value and compress the file. There is only one argument value only need to handle one file. The maximum input size won’t exceed 10MB.

The command will be >> **./compress xxxxx.txt**

Output:

Print the following message in the console:
The first line is the size of file, and the unit of size is “Byte”
The second line is frequency of “a” in the whole text file.
The third line is frequency of “e” in the whole text file.
The fourth line is frequency of “i” in the whole text file.
The fifth line is frequency of “o” in the whole text file.
The sixth line is frequency of “u” in the whole text file.

Save the compressed file named xxxxx.compress (the original file is xxxxx.txt). The storage location of the compressed file is same as your program.

Output message example:
62
5
6
7
8
9

Example:

When you compress a text file
Example:

Input command	Output message
./compress filename.txt	62 5 6 7 8 9
	Output file
	filename.compress

When you decompress a compressed file

Input command	Output file
./decompress filename.compress	filename_decompressed.txt

The file's content before compression and the file's content after decompression are exactly the same.

Grading:

Print the size of the original file: **10%**
Print the frequency of lowercase vowels of the whole text file: **20%**
Compression by Huffman Coding: **45%**
Decompression: **25%**

Plagiarism: **-100%**
Late: **-100%**
Wrong file name: **-20%**

Your file name should be StudentID.zip (e.g. 0756704.zip)
Place your main cpp file in the root directory of the compressed file.

(不要把程式碼放在其他資料夾內)

Testing Environment: NCTU CS Workstation