Assignment 7 Intro to C++
Value: 10pts
Due at the beginning of the next session.

This assignment is to use data stream classes. Hand in the files you write, and console output to demonstrate correct operation of your program. This assignment is about stream data, you may not use the "read file as string" type solutions that were used in earlier assignments for this one. Use stream techniques to process the data.

Some data is known completely in advance, most files are of known size and content. However other data is like broadcast television, it has no logical beginning or end. Its just a continuous stream of information. You start reading it in the middle and use the information as long as it is useful. Stock ticker data is a stream, satellite telemetry is a stream, and there are many data streams available on the internet.

A file can be read as a stream instead of a block of data, this allows testing of stream handling with known data. For this assignment, read the Gettysburg address as a stream getting one character at a time from the input stream.

Split the stream into words, each time a word is found add it to a list of words, but ONLY if its not in the list already. When the file ends, print the list of unique words. Note that "The" and "the" are the same word. Ignore the case of letters. Punctuation and spaces are not part of a word and must not be entered into the list.

Do the work in a "unique words" class of your own design; don't do the work in main. Write member functions to access the results. In main, open the file stream and pass the class one character at a time. At any time you can call the member function to get the current list of unique words and it must work correctly. Access the results through a member function, do not just declare a public list in the class and access it directly, return a COPY of the list so main can modify it as needed without changing the original data.

You will find the template list class we used in the last assignment is useful for aggregating characters into words, as well as creating lists of unique words.

Sorting the list of unique words is nice but not required.