

1. Modify exercise 2 (above) so that instead of using C style strings, the string class from `#include <string>` is used (`std::string`). See lecture notes *Lec-08.ppt* and *Lec-09.ppt* for differences between the C style string and `std::string` types. You are changing over from the C string to the Object Oriented string `std::string`.

In the previous lab exercise, the unit name had “_” between words to simplify the reading of the unit name from the data file. Normally, names like “Data Structures And Abstractions” have spaces between the words. You may want to restructure the data file to reflect this but this might create a problem if you try to read in a `std::string` using the “>>” operator as only one word is read in each time.

One way around this is to have the unit name on a line by itself in the data file and use the `getline(...)` to read the entire line, composed of a number of words into one `std::string` object. Alternatively, you may want to read the unit name in with the “_” between words and replace the “_” with a space character when storing the values in your data structure. A better way is to have the data related to one record on one line separated by a delimiter (usually a comma) and use the `getline(...)` with the delimiter parameter to read the data in (see lecture notes for topic 3, *Lec-09.ppt*, first and then more details if necessary at http://en.cppreference.com/w/cpp/string/basic_string/getline). For now, use any approach that you like, but you will have to eventually (**very soon**) use the comma delimiter in CSV files as CSV files are needed for the assignment. Web search “csv format”.