

# Fall 2017 OOP345 Project

## Milestone 1.

Write a CSV file reader program. Name the file csvreader.cpp.

CSV files are commonly used a data exchange format to import and export data from database program or spreadsheets.

See [en.wikipedia.org/wiki/Comma-separated\\_values](http://en.wikipedia.org/wiki/Comma-separated_values). The file name will be a command line parameter. Make the delimiter character a command line parameter. The delmiter may vary between different CSV files. Store the CSV file data in a 2D vector-vector structure declared as

```
'vector< vector<string> > data'.
```

Test printing the data three ways

Method 1 - range-based for loop:

```
for(auto line : data) {  
    for(auto field : line)  
        cout << field << " ";  
    cout << "\n";  
}
```

Method 2 - conventional for loop

```
for(int line = 0; line < data.size(); line++) {  
    for(int field = 0; field < data[line].size(); field++)  
        cout << data[line][field] << " ";  
    cout << "\n";  
}
```

Method 3 - iterator for loop (can also use iterators with STL for\_each method)

```
for(auto line = data.begin(); line < data.end(); line++) {  
    for(auto field = line->begin(); field < line->end(); field++)  
        cout << *field << " ";  
    cout << "\n";  
}
```

Test your CSV reader on all of the project website data files.

( See <https://scs.senecac.on.ca/~oop345/pages/assignments/index.html> )

Try loading the data files into your favourite spreadsheet program.

For a teaser, write a csv reader using the `std::accumulate` function from the STL `<numeric>` library. Pass a lambda function to accumulate.

HINT: Pass an empty vector as the intial value. The lambda either appends the character to the back of the vector or pushes a empty string if the separator is encountered.

