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CPSC – 535
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Project 1: Rewriting Greeting Cards

Project Contents:

README – File containing brief project and code description
adv-alg-replace-strings.cpp - File Containing all code and the algorithm
replaceStringsInput.txt - Input text file to be read by the algorithm containing input strings and replacement pairs
Report.pdf – This file. Report containing summary, psuedocode, and screenshots.

Summary:

adv-alg-replace-strings.cpp will accomplish the following:

1. scan the contents of replaceStringsInput.txt
 1. Convert content to usable data structures
2. Use brute force algorithm to scan the input strings for the appropriate text from the replacement pairs, and replace that substring with the respective replacement substring
3. Print the new modified strings to the screen

Input file should be a .txt file of the following format:

My dear Anna, let me congratulate you on the beautiful car that you purchased today. It looks very posh. I hope you got a good deal. Cars are expensive but much needed. Best regards, Naomi.

```
{{"Anna", "Jovi and Victor"} , { "car", "house"}, {"today", "last week"}, {"posh", "well built"}, {"Cars", "Houses"}}}
```

The first line being the string to be modified, without quotation marks, the following line to be the set of replacement pairs. Following lines can have the same format alternating between string to be modified and replacement pairs as the algorithm can take multiple inputs at the same time.

Psuedocode:

Function getStrings():

- open input file
- read file line by line
 - even lines, convert to string to be stored as set of input strings (mystring)
 - odd lines, parsed to appropriately convert to sets of input strings (my replace)
- call subStrings1(string mystring, vector<string> & my replace) with the gathered data
- output vector containing all updated strings

Function `replacesubs1(string mystring, vector<string> &my replace)`
cycles through series of replacement pairs, calling `replacesubs` for each set
output is updated string

Function `replacesubs(string myString, string Find, string replace)`
brute force algorithm
iterates through `myString` looking for first character in string `Find`
if found checks to see if following characters match rest of `Find`
if they do not match, continue iterating through the string
If found, replace substring of `mystring` containing `Find` with `replace`
continues searching for any subsequent matches of `Find`
returns updated string

Function `printVector(vector<string> &myVect)`:
iterate through vector containing all the final modified strings
print each string to the screen

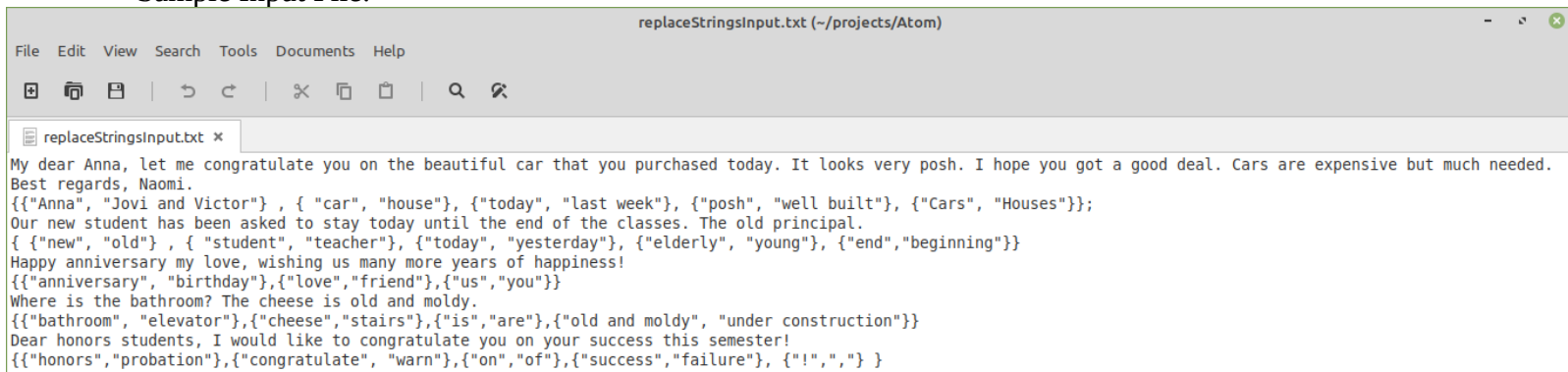
Screenshots:

Group Member:

CPSC535-SP21-Project1

Rewriting greeting cards Author: Kris Swartzbaugh (kswartzb@csu.fullerton.edu)

Sample Input File:

A screenshot of a text editor window titled "replaceStringsInput.txt (-/projects/Atom)". The window has a menu bar with "File", "Edit", "View", "Search", "Tools", "Documents", and "Help". Below the menu bar is a toolbar with icons for file operations and editing. The text area contains the following content:

```
replaceStringsInput.txt x
My dear Anna, let me congratulate you on the beautiful car that you purchased today. It looks very posh. I hope you got a good deal. Cars are expensive but much needed.
Best regards, Naomi.
{{"Anna", "Jovi and Victor"} , { "car", "house"}, {"today", "last week"}, {"posh", "well built"}, {"Cars", "Houses"}};
Our new student has been asked to stay today until the end of the classes. The old principal.
{ {"new", "old"} , { "student", "teacher"}, {"today", "yesterday"}, {"elderly", "young"}, {"end","beginning"}}
Happy anniversary my love, wishing us many more years of happiness!
{{"anniversary", "birthday"}, {"love", "friend"}, {"us", "you"}}
Where is the bathroom? The cheese is old and moldy.
{{"bathroom", "elevator"}, {"cheese", "stairs"}, {"is", "are"}, {"old and moldy", "under construction"}}
Dear honors students, I would like to congratulate you on your success this semester!
{{"honors", "probation"}, {"congratulate", "warn"}, {"on", "of"}, {"success", "failure"}, {"!", "", ""} }
```

Sample Output:

```
Here are the updated greeting cards:

My dear Jovi and Victor, let me congratulate you on the beautiful house that you purchased last week. It looks very well built. I hope you got a good deal. Houses are expensive but much needed. Best regards.

Our old teacher has been asked to stay yesterday until the beginning of the classes. The old principal.

Happy birthday my friend, wishing you many more years of happiness!

Where is the elevator? The stairs are under construction.

Dear probation students, I would like to warn you of your failure this semester!
```

Since this program was built to take an input file containing multiple strings and replacement pairs in a single file no additional screenshots are needed. The above screenshot contains 4 examples of input and output strings