Homework #8

Simple Encryption of a Variable-Sized Message

Due: November 15 by 11:59:59 PM **Assigned:** November 8, 2018

Square code is a simple transposition cipher that utilizes a square (or rectangle) arrangement of your plain text to create a ciphertext. You will write a program that allows the user to type a message of *any* length, then encode it using an appropriately sized 2D array.

Requirements:

- Name the source file for your program **program8.cpp**.
- Prompt the user to type in a message
  - You must strip all whitespace and common punctuation marks
    - Tabs, spaces, new lines, and carriage returns count as white space
    - Period, comma, apostrophe, exclamation mark, and question mark count as common punctuation
- The message will then be inserted into a dynamic 2D array.
  - The dynamic array will always have 12 columns
  - It is up to you to determine how many rows are required
- You are only expected to encode the message
- A sample run of your program shall look like:
  NOTE: The message and encoded output are both just one line, breaks were added for visibility **NOTE:** The '#' are actually in the array

```
Enter a message to be encoded: If you want to know what a man's like, take a
good look at how he treats his inferiors, not his equals. J.K. Rowling

I F Y O U W A N T T O K
N O W W H A T A M A N S
L I K E T A K E A G O O
D L O O K A T H O W H E
T R E A T S H I S I N F
E R I O R S N O T H I S
E Q U A L S J K R O W L
I N G # # # # # # # # #

INLDTEEI FOILRRQN YWKOEIUG OWEOAOA UHTKTRL WAAASSS ATKTHNJ NAEHIOK TMAOSTR
TAGWIHO ONOHNIW KSOEFSL
```

Hints:

- You will be making heavy use of the string class to parse the message and insert it into the array
  - Familiarity with some string class function will be very beneficial
  - Functions such as `find_first_of()` or `find_last_of()`, and `erase()`
- A dynamcic 2D array requires special care to set up and properly destroy
- No functions are required, but they should be used

Reminders:

- Be sure that your program includes your name, ID, description, etc. as shown in the General Homework Requirements Handout
- Use good style including indentation, comments, etc. Part of the grade will be for style and quality.
- Carefully test your program.
- You are welcome to write your program at home. If you do, be sure to compile and test it in the lab before submitting it.

How to submit your program:

- Submit the file `program3.cpp` electronically using the following terminal command:
  For the 12:30 lecture section:
  `~cs211a/bin/handin 8 program8.cpp`

  For the 5:35 lecture section:
  `~cs211b/bin/handin 8 program8.cpp`