

## C++ Programming - Functions, File I/O

For Assignment #3, I've decided to use a program from a previous class. This will give you practice in the use of Function and File I/O. One of the guidelines is to have no function with more than 30 lines of code(not including comments), so you'll need to break the program into multiple functions. Before you start writing the code, take some time to think about the problem and how you would break it down. You might even try drawing a flow chart with inputs/outputs and the various steps.

Have fun!

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The purpose of the this program is to continue refining our programming skills in C++ and practice using **arrays of characters, the subscript operator, the cstring library, and functions with arguments**. Our goal is to create programs with a small functions where main delegates to a series of functions where the real work takes place. In this programming assignment, you are **not** allowed to use global variables. Avoid using break from an if or loop (*unless working with a switch statement*). Limit your functions to no more than 30 statements of code (not including comments, blank lines, or variable definitions). Remember to never use a "return" in the middle of a loop!

*The idea with this assignment is to write your own functions to solve this problem.*

### Programming Assignment

Implement a program that will convert a sentence that you want to send to your friend into your secret "language" and then back again (to make sure it gets through correctly!!). In our case, we will be "hiding" sentence into a paragraph of text!

Here are the rules your program will follow:

1. The user will enter in a complete sentence. This is the sentence that you want your friend to get in a secret code.
2. Then, ask the user to enter a paragraph of text. This is text that we will use to "hide" the sentence.
3. Your program will then output the paragraph of text with the following changes:
  - a. The first character of each word of the paragraph will be the next character in the original sentence, replacing the first letter of each word in the paragraph
  - b. For each space, the next character from the sentence will be a capital letter.
4. For example:
  - a. Sentence: "meet at the mall"
  - b. Paragraph: "Words and actions are the factions that make or break our day. And thoughts are the things from whence they all spring."

c. Result: "mords end ections tre Ahe tactions That hake er Mreak aur lay. Ind"

For **extra credit**, write a function that will decode the paragraph and output the original message!

For **extra, extra credit**, ask the user for the name of a text file and the name of an output file. Encode the text from the input file and write it out to the output file.

1. Make sure to prompt the user for any input requested. Make sure it is clear from your prompts what the user is expected to do.
2. Do not work with single character variables. Use arrays in this programming assignment!
3. Use the cstring library with strlen to know when to stop processing the array of characters. strlen should not be in the conditional expression. Consider using it prior to a loop and storing the results of strlen in a variable!!
4. Use the subscript operator [] to match letters, using a loop (recommend for loops)
5. Make sure to use C++'s I/O (iostream library) for your input and output.
6. FUNCTIONS are required for this assignment