**Programming Challenges 4B November 27h, 2018 - Due on or before 10:10pm**

**Objective:** C++ string class

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| --- |
| **Important instructions:**   * *All programs must include comments at the top of your program: your name, course name-section number (e.g. CSIT 839 -26953), program name and the program description in brief.* * *Copy and paste your program code and outputs in Part B of each program.* * *Once it is done, save and submit this word file via Canvas.* |

To receive full credit, your program must:

- Include simple, clear comments explaining your program logic

- Indent your code and line up your braces

- Give descriptive variable names

- Use name constants wherever possible. Name constant must declare with CAPITAL.

- The data of your output should be the same as the given sample output.

1. **WordSeparator.cpp (10 pts)**

Write a program that accepts an input as a sentence in which all of the words are run together (no space), but the first character of each word is uppercase. Convert the sentence to a string in which the words are separated by spaces and only the first word starts with an uppercase letter.

Make sure to submit two outputs and use the following function prototype:

**string split(string);**

**Sample output 1:**

Enter a sentence: SheSellsSeaShellsOnTheSeaShore

The new sentence: She sells sea shells on the sea shore

**Sample output 2:**

Enter a sentence: TheButterSheBoughtWasABitBitterAndMadeHerBatterBitter

The new sentence: The butter she bought was a bit bitter and made her batter bitter

**Copy and paste your program (source) code and the outputs after this line**

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/\*

Inola Cohen

WordSeparater.cpp

Co Sci 839 - 26953

Purpose: to write a program that accepts an

input as a sentence in which all of the words are

run together (no spaces), but the first character of

each word is uppercase. Convert the sentence to a string

in which the words are separated by spaces and only the first

word starts with an uppercase letter.

\*/

#include <iostream>

#include <string>

#include <cctype>

#include <cstring>

using namespace std;

string split(string);

int main()

{

string stringInput;

cout << "Enter a sentence: "; // Ask for user input

cin >> stringInput; // Recieve user input

cout << split(stringInput) << endl; // Function call to split sentence and

// display new sentence

return 0;

}

string split(string finalString)

{

/\* Loop starts at index 1 not 0 because we don't need to add space before the first letter

of the sentence, also we do not need to turn first letter of sentence into lower case \*/

for (int i = 1; i < finalString.length(); i++) // Loop through entire string

{

if (isupper(finalString[i])) // Search for any capital letters

{

/\* Because we are adding space characters for every capital letter (except the first) we are adding

more characters to the string = meaning we need to increment index to accomodate index for space characters \*/

i++;

finalString.insert(i - 1, " "); // Add space character to the left of every capital letter

finalString[i] = tolower(finalString[i]); // Convert all capital letters (except first, why loop starts at

// index 1 not 0) to lower case

}

}

return finalString;

}

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