

Exercise 1: Processing a string using a loop and if-statement

1. Launch the terminal
2. Create a new directory with the name "Lab03" inside "CSC215"
3. Write the program "ex1.c" that:
 - a. reads a string from the keyboard
 - b. changes the capitalization of the string to Start Case (i.e capitalize the first letter of each word, and keep the rest in small case)
 - c. prints the modified string on the screen.
4. Compile and run your program. 2 points

Tips: ■ Capital letters are in the range ['A' , 'Z'] and small letters are in the range ['a' , 'z']
■ The difference between the capital case of a letter and the small case is fixed for all letters

Exercise 2: Evaluating mathematical series using loops

1. Write the program "ex2.c" that:
 - a. computes and prints the sum of the first one thousand terms of the series:
$$\sum_{i=1}^n \frac{(-1)^{i+1} \cdot i^2}{(i+5)^2} \cdot$$
 - b. computes the sum of terms that is immediately less than 0.5
 - c. prints the number of terms that reaches this sum.
2. Compile and run your program. 2 points

Tips: ■ For each term compute the parts: $-i^{i+1}$, i^2 and $(i + 5)^2$ separately, then compute the term

Exercise 3: Nested loops

1. Write the program "ex3.c" that:
 - a. reads an integer n from the keyboard
 - b. prints stars in the arrangement shown aside, where the first line and the last line contain n stars each (the drawing shows an example when n = 7).
2. Compile and run the program. 2 points

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Lab assignment:

4 points

Write a C program assignment.c that reads a string from the keyboard and prints the frequency (number of occurrences) of each of the vowels (a, e, i, o and u) in it.

Sample run:

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> Enter a sentence:
You don't know about me without you have read a book by the
name of The Adventures of Tom Sawyer; but that ain't no matter
A/a:10      E/e:10      I/i:2      O/o:12      U/u:6
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