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.

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 any letter and its small case is fixed
- `scanf()` stops reading when white space is encountered, while `gets()` reads until end of input or new line character is encountered.

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:

$$\sum_{i=1}^{n} \frac{(-1)^{i+1} . i^2}{(i+5)^2}$$

   b. computes the sum of terms for which the absolute value is immediately less than 0.5
   c. prints the number of terms that reaches this sum.
2. Compile and run your program.

Tips:
- For each term, compute the parts: -1^{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.

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:

```
> 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
```