

Assignment 7

1. (70 points) Write a program that will display various information about a string when you input a string. You must use the observer design pattern to do this. You must have both the class diagram and java code for this. Submit the source code and a picture of your output. You will input 3 different strings: "This is a sentence", "abcDeFGhiJKL", "are you kidding?"

The information to display is:

- a) Number of words in the string
- b) Number of characters in the string (including spaces and special characters) (which is the length of the string)
- c) Number of vowels in the string
- d) Number of lowercase and uppercase characters in the string

My output:

```
$ java StringTest
Enter a string: This is a sentence
Number of words in string: 4
Length of string: 18
Number of vowels in string: 6
Number of lowercase letters in string: 14
Number of uppercase letters in string: 1

Enter a string: abcDeFGhiJKL
Number of words in string: 1
Length of string: 12
Number of vowels in string: 3
Number of lowercase letters in string: 6
Number of uppercase letters in string: 6

Enter a string: are you kidding?
Number of words in string: 3
Length of string: 16
Number of vowels in string: 6
Number of lowercase letters in string: 13
Number of uppercase letters in string: 0

Enter a string: quit
```

2. (30 points) Ivar Jacobson developed the use case concept. He and 2 others designed UML. Recently he and his company (Ivar Jacobson International) have create a new standard called Essence. Find out what this is and answer these questions:
 - a) What is Essence?
 - b) How does this relate to Software Engineering?
 - c) Do you think this will become an industry standard? Why or why not?
 - d) Give references for where you got your information

Due Date: Sunday, 4/9 at 11pm in d2l – assignment 7 folder

Each student will complete and submit this assignment individually. The TA will check for plagiarism. No late assignments will be accepted.

Rubric

- For 1:
 - 20 pts – provided class diagram with enough classes to properly implement the observer design pattern
 - 30 pts – provided code that matches class diagram
 - 20 pts – provided screenshot of code successfully running once with the three strings listed above
- For 2: Submit as a separate file
 - 25 pts – you answered all the questions in a thoughtful way, showing that you understand what Essence is. You can use bullets, a paragraph, etc to answer these questions. There are no rules on the format for answering.
 - 5 pts - Provided references for where you got your information