

# LAB TEST 04 (G1)

time: 50min

CSE 2112

## Object Oriented Programming Lab

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### **Problem:**

In this problem you need to create an application which is capable of doing multitasking. Think it as a simple word processing application which takes input from the console. But the operations are limited. It can only count the number of vowels and the frequency of each character in the whole text. These three operations (input, counting vowels, counting character frequency) should be performed in three threads as we want to optimize our application. Suppose, while the input thread is busy taking inputs, the counting thread will keep counting the characters in parallel. If there is no input, both counting threads will wait. Whenever there are available inputs, the input thread will notify counting threads so that they can start processing. The only case when the input is terminated is by the special character '#'. In this case, the input thread will notify the counting threads to process text up to the '#' character and show the results.

### **Sample Input/ Output:**

aeiouABC

pqr

#

**Total Vowels: 6**

### **Character Frequencies:**

**a: 2 b: 1 c: 1 e: 1 i: 1 o: 1 p: 1 q: 1 r: 1 u: 1**