**Task 1 – Heavy weight championship**

Weightlifters are usually competing within particular weight categories in order to insure fairness of the competition. However, to determine an absolute champion (the best athlete across all weigh categories) a special method called “Glossbrenner formula” is used in order to adjust the weight lifted with athlete’s own weight.

The formula is quite simple: Adjusted weight = actual weight \* coefficient

where coefficient is calculated according to the following rules (simplified):

* If athlete’s own weight is less then or equal to 50 kg – coefficient is 1.32435
* If athlete’s own weight is more then 50 kg and less then or equal to 60 kg – coefficient is 1.00990
* If athlete’s own weight is more then 60 kg and less then or equal to 70 kg – coefficient is 0.83285
* If athlete’s own weight is more then 70 kg and less then or equal to 80 kg – coefficient is 0.72625
* If athlete’s own weight is more then 80 kg – coefficient is 0.657800

Example: an athlete with own weight of 67.4 kg managed to lift 155 kg. The coefficient is 0.83285 (as own weight is between 60 and 70 kg), thus the adjusted weight is

155 \* 0.83285 = 129.09 kg

Your task is to write a program that will calculate adjusted weight using Glossbrenner formula.

The program should accept weight lifted and own weight of the athlete via two TextBox controls, and then calculate and display adjusted weigh via message box.

Be sure to check if the parameters supplied are valid. If user input is invalid your program should notify the user by showing friendly message describing the error and then terminate.

**40 marks**

**Task 2 – Text analysis**

Your task is to write a C# program producing various kinds of statistics for a given text. You should analyse the text entered by user and calculate the following:

1. Number of words (word is a piece of text separated by space)
2. Number of vowels (any of ‘A’,‘E’,‘I’,‘O’,‘U’. Do not consider ‘Y’ as vowel)
3. Number of consonants (any of ‘B’, ‘C’, ‘D’, ‘F’, ‘G’, ‘H’, ‘J’, ‘K’, ‘L’, ‘M’, ‘N’, ‘P’, ‘Q’, ‘R’, ‘S’, ‘T’, ‘V’, ‘W’, ‘X’, ‘Y’, ‘Z’)
4. Average number of characters per word (again, word is anything separated by space, even if it’s a set of numbers and punctuation)

HINT 1: Words could be separated by single space, multiple spaces new line and Tab characters.

HINT 2: Your application should properly work for both upper case and lower-case characters.

The program should accept the text to analyse via a TextBox control and produce result via MessageBox in the following format:

*Number of words: #*

*Number of vowels: #*

*Number of consonants: #*

*Letters per word: #*

After showing the statistics your program should terminate.

Input should be validated – in case of empty input you should show a friendly error message.

**60 marks**