

Assignment 8 (bonus)

Exercise 1

Implement the `Triangle` class. The constructor should take 3 arguments, corresponding to the length of the sides. In a triangle, the sum of any two sides is greater than the other side.

Create the `IllegalTriangleException` class and make the constructor of the `Triangle` class throw such exception if the object violates the rule.

Example:

```
new Triangle(10, 1, 1), violates the rule since  $1 + 1 < 10$ 
```

Exercise 2

Write a java program that counts the number of characters (with and without spaces), words, and lines in a file. The filename should be passed as a command-line argument.

Example of call:

```
> java FileCounter file.txt
```

Output

```
1234 characters
1001 characters ignoring spaces
150 words
30 lines
```

Exercise 3

Modify the code of Exercise 2 to read from an url. For instance count the number of characters (with and without spaces), words, and lines in the “Paradise Lost” by Milton

<http://www.gutenberg.org/files/20/20-0.txt>

Note: skip the counting until the book starts, the title, and stop at the line the end.

Exercise 4

Write a Java program that reads the data from

<http://ww2.amstat.org/publications/jse/datasets/usnews.dat.txt>

and computes the average Math, Verbal, and Combined SAT score (columns 5, 6, and 7).

Find also the ranking of NYU with respect to the 3 SAT scores.

Here you can find detailed description of the data

<http://ww2.amstat.org/publications/jse/datasets/usnews.txt>

Instructions

The solution of the exercises must be provided as a **java**. The **files must be zipped** together before upload.

Assignments not respecting these instructions will be ignored.