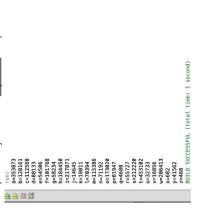
## Lab 11 - Functional Programming and Stream API

## Objectives:

- Learn to create stream from a file or collection
- Learn to transform stream elements using Lambda function or Method Reference
  - Learn to collect elements from stream
- The file MarkTwain.utf8.txt contains a collection of works by Mark Twain, a famous American writer. You are
  asked to do text mining using Java Stream API. All tasks described below must be done with one single
  processing pipeline.
- a. Print out the top 10 most frequently used words in descending order.



b. Group words by their initial in parallel and print out the frequent count of words from a to z.



c. Find the top 10 most frequently used pair of words in descending order and save the result to a file.

1 of the=18241
3 in the=13466
3 it was=7337
4 to the=7121
5 and the=7831
7 he was=4553
8 on the=4467
9 on a=4367
10 was a=4271

Note that, when processing the words, they are treated **case-insensitively**. Also, all punctuations must be removed. For example, **after-dinner** is considered as two words **after** and **dinner**. Similarly, **you're** is treated as **you** and **re**.

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