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Compulsory assignment 1 - INF 102 - Autumn 2017

Tasks:

1) Comment on task 1: changed how the code works. Now i assume the text strings are separated with whitespace. Now it works with more-digit numbers rather than one digit.
2) Comment on task 2: I added the functionality that it gives a warning when we tries to *back* before the first page.
3) In task 3, I have implemented first Collections.sort. Which is a modified version of merge sort. This guarantees a linearithmic order of growth of the algorithm. (also it is told in the API, that it is Nlog(N)). But i changed it to Arrays.Sort, which guarantees the same order of growth. To search through the list i used a search algorithm to find number of occurrences of word **i** at position **j.** In a double for loop the complexity is O(n^2).
4) When is sorting profitable:
    a) In the task, it is asked when the break even is at S. I tested with the lower values first, like s = 5, 10, 50 etc. But in all of those binary search and sort was slower than linear, which does not make sense. In my code the break is around 1170. Which is very unstable.
    b) Every time i run the code, it differs from 10+- . So how could i get a more accurate result? To fix this, I should make another listGenerator method that can also generate values outside of the initial range of values. Then I should be able to see the runtime differences more clearly.

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