

(Last!) Exercise Sheet 13

Submit until Tuesday, February 11 at 4:00pm

Complete online evaluation by Sunday, February 9

Exercise 1 (20 points)

Please carefully fill out the (online) evaluation form for this course. You should have received an email (on Thursday, January 30) with a link to the evaluation form + a personal TAN. The evaluation is anonymous. Just confirm in your *experiences.txt* for this exercise sheet that you have completed the evaluation, and we will trust you and give you the points. Please complete the evaluation by Sunday, February 9. After that date, the evaluation web site will be closed. Please be honest and concrete with your feedback. We particularly value the comments in the free-text fields.

Exercise 2 (10 points)

This exercise is a variant of the task from Exercise Sheet 2 (about ranking), but with different queries and a different quality measure. Namely, use your code from Exercise Sheet 2 to determine the P@5 (precision at 5) for the following five queries:

medieval author, scandal celebrity, drug death, striker bayern munich, red hot chili peppers

Do this for two different ranking functions: for standard BM25 (with $k = 1.75$ and $b = 0.75$) and for standard tf.idf (BM25 with $k = \infty$ and $b = 0$). For each of the two ranking functions, this gives you five measurements (with each measurement being a number between 0 and 1). Judge for yourself what is relevant for a query, but use the same criteria for both ranking functions.

Exercise 3 (10 points)

The goal of this exercise is to check whether the difference between the two ranking functions, as observed on the five queries from Exercise 2 above, is statistically significant. Consider as null hypothesis that the two ranking functions give the same result. Under this hypothesis, compute the p -value of the observed difference using the three methods explained in the lecture (Randomization Test, T-Test, Z-Test). Use the “one-sided” versions for all three tests. Report your results in the table linked on the Wiki. Briefly discuss your results in your *experiences.txt* for this exercise sheet.

[please turn over]

Add your code for Exercise 2 to a new sub-directory *exercise-sheet-13* of your folder in the course SVN, and commit it. Make sure that *compile*, *test*, and *checkstyle* run through without errors on Jenkins. As usual, also commit a text file *experiences.txt* where you briefly describe your experiences with this exercise sheet and the corresponding lecture. As a minimum, say how much time you invested and if you had major problems, and if yes, where. Don't forget the (brief) discussion asked for in Exercise 3 above, as well as the confirmation that you filled out the online evaluation for this course, in case you did it!