

**Lab Class IR:II**

By November 26, 2024, solutions for the following exercises have to be submitted: 1, 2, 3, 4, and 5.

## Exercise 1 : User Models

Describe the user model of each of the following effectiveness measures as simple as possible (max. 2–3 sentences, in your own words):

- (a) Mean Reciprocal Rank (MRR)
- (b) Normalized Discounted Cumulative Gain (nDCG)
- (c) Precision@ $k$  (at rank  $k$ )

## Exercise 2 : Measure Intuition

Describe the following measures, each in 1–3 sentences:

- (a) Recall
- (b) Query throughput
- (c) Indexing space overhead
- (d) Normalized Discounted Cumulative Gain (nDCG)

## Exercise 3 : Measure Suitability

Name two search tasks where the Precision measure (not Precision@ $k$ !) is good or bad at modelling the user behavior, respectively. Give a short explanation (1 sentence).:

- (a) For which search task is it a good fit?
- (b) For which search task is it a bad fit?

## Exercise 4 : Interactive Retrieval

Name three main differences between ad hoc retrieval and interactive retrieval.

## Exercise 5 : Effectiveness vs. Efficiency

Which of the following measures describe the effectiveness and which describe the efficiency of a retrieval system? Give a short reason (up to 10 words)

- (a) Query latency
- (b) nDCG
- (c) Recall
- (d) Index size