

# Results

## Programming Assignment-2

Name	UNH-ID	User-id
Sai Arvind Reddy	923519765	sd1253
AKhila Bezawada	933142537	ab1545
Medhini Shankar Narayan	978572176	ms1537

### Question 2

Using TREC_EVAL	BM25	Custom Score
Precision at R	0.5966	0.5257
Mean Average Precision	0.6016	0.5095
NDCG@20	0.7696	0.674

### Question 3

Qrel file: train.pages.cbor-article.qrels

Eval Measure	BM25	Custom
Precision at R	0.6930299747201156	0.7040447815095703

### Question 4

Eval Measure	BM25	Custom
Mean Average Precision	0.5527562336614097	0.5527562336614097

### Question 5

Eval Measure	BM25	Custom
Mean Average Precision	0.6712607859648821	0.6659549132955013

The eval scores which we have obtained is very similar to the one calculated by TREC\_EVAL, but not exactly the same.

With the default scoring algorithm, we calculate a nDCG@20 score of NDCG20 is: 0.6712607859648821, while TREC\_EVAL reports 0.7696.

For our custom scoring function,

we calculate NDCG20 is: 0.6659549132955013, while TREC\_EVAL calculates 0.674

As we are using logarithms base 2, while we implement in class determines the denominator as  $\log_2(c+1)$ , results in  $\log_2(2) = 1$ , results in denominator will be one larger for all calculations.

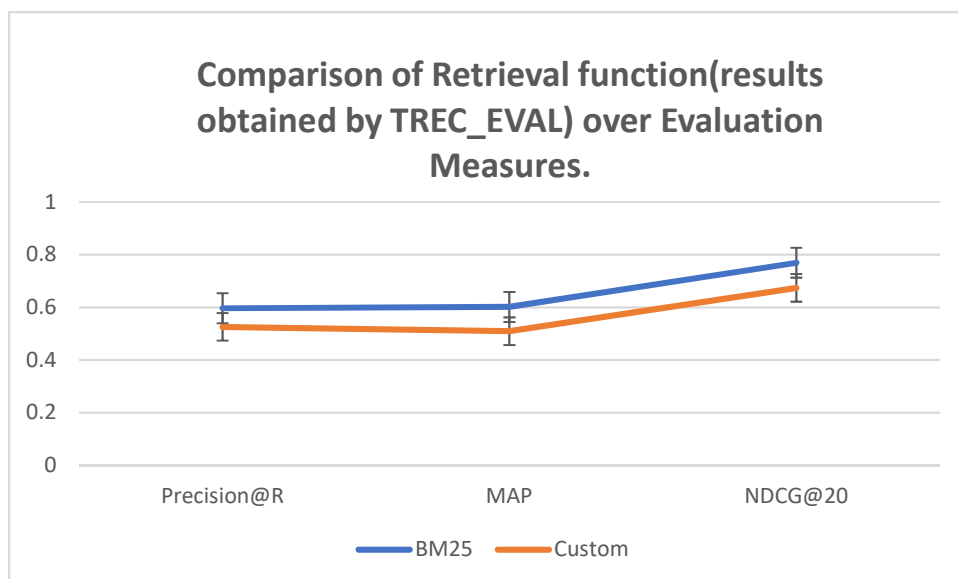
## Question 6

Using TREC-EVAL following results are obtained.

Using TREC_EVAL	BM25	Custom Score
Precision at R	0.5966	0.5257
Mean Average Precision	0.6016	0.5095
NDCG@20	0.7696	0.674

From our code, following results are obtained

Using our code	BM25	Custom Score
Precision at R	0.6930299747201156	0.7040447815095703
Mean Average Precision	0.5527562336614097	0.5527562336614097
NDCG@20	0.6712607859648821	0.6659549132955013



From the graph above, we can conclude that our default Retrieval function(BM25) is giving better results compared to Custom Scoring function. Therefore, BM25 is better. The error bars are not overlapping and the difference is very small.(significant enough to differentiate).