Results

Programming Assignment-2

Name	UNH-ID	User-id	Contribution
Sai Arvind Reddy	923519765	sd1253	Q2, Q3
AKhila Bezawada	933142537	ab1545	Q4, Q5
Medhini Shankar Narayan	978572176	ms1537	Q1, Q6

Question 1

From Default.txt
enwiki:IBM%20Monochrome%20Display%20Adapter Q0
c0812ef328d179188a78ba3a8ad84ffe9b33a817 1 29.025066 team7-value
enwiki:IBM%20Monochrome%20Display%20Adapter Q0
7865c2e08df92a327ca187cb67ec6a4899fdd4d2 2 24.470428 team7-value
enwiki:IBM%20Monochrome%20Display%20Adapter Q0
0301ccef7b518d8c7686ff5b718144558f12149e 3 13.81766 team7-value
enwiki:IBM%20Monochrome%20Display%20Adapter Q0
aac7e67ff62c38c887e7bc4ddec15b207407f7d2 4 13.373206 team7-value
enwiki:IBM%20Monochrome%20Display%20Adapter Q0
ae7c4d080720e52acd8baf405400b1c6a40b924b 5 7.973087 team7-value

From Custom.txt
enwiki:IBM%20Monochrome%20Display%20Adapter Q0 c0812ef328d179188a78ba3a8ad84ffe9b33a817 1 10.0 team7Custom_score_function
enwiki:IBM%20Monochrome%20Display%20Adapter Q0
bfd494097eff9858f70d99ba9cab4e7cdfc5a788 2 4.0 team7-Custom_score_function
enwiki:IBM%20Monochrome%20Display%20Adapter Q0
0301ccef7b518d8c7686ff5b718144558f12149e 3 3.0 team7-Custom_score_function
enwiki:IBM%20Monochrome%20Display%20Adapter Q0
633e92ee660e5e269f81d8340d5deb9b7b0310c9 4 3.0 team7-Custom_score_function
enwiki:IBM%20Monochrome%20Display%20Adapter Q0
7865c2e08df92a327ca187cb67ec6a4899fdd4d2 5 3.0 team7-Custom_score_function

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
NDCG@20	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 log2(c+1), results in log2(2) =1, results in denominator will be one larger for all calculations.

Question 6

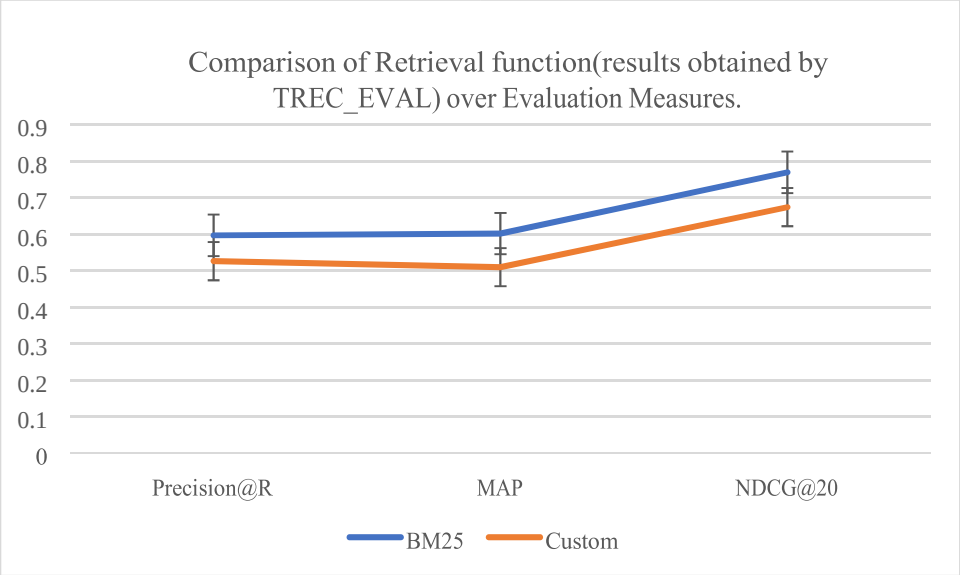
Using TREC-EVAL following results are obtained.

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

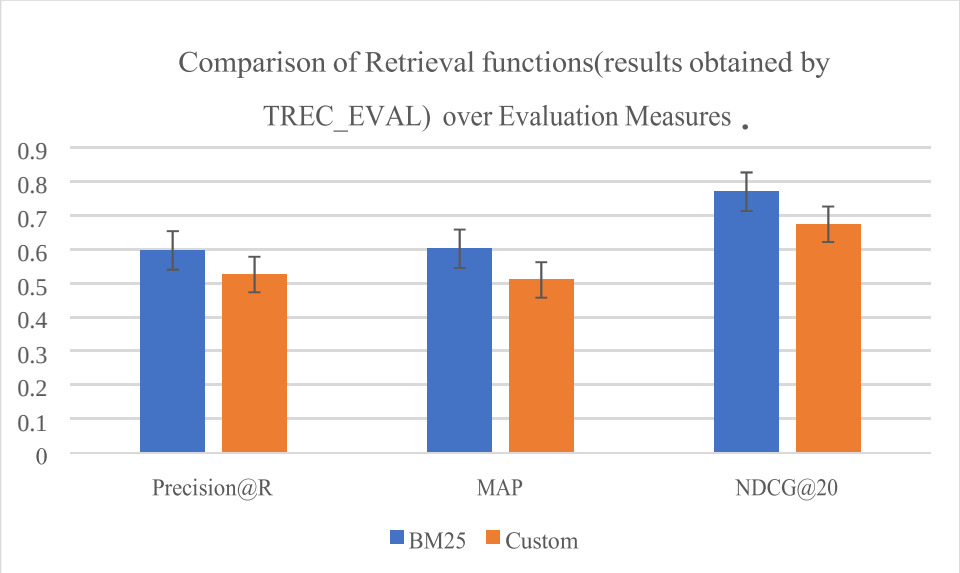
From our code, following results are obtained

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

Line Chart



Bar Chart



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. NDCG@20 is giving better results compared to Precision at R and MAP. While Precision@R and MAP are giving results that are very close by. The error bars are not overlapping which denotes that the difference is statistically significant.