

Project 3

Cosine Top 10 for query = europe

Rank	Document ID	Relevant	Recall	Precision
1	164	Yes	1/4	1.0
2	177	Yes	2/4	1.0
3	152	Yes	3/4	1.0
4	170	No	3/4	3/4
5	183	No	3/4	3/5
6	180	No	3/4	3/6
7	174	Yes	1	4/7
8	130	No	1	4/8
9	81	No	1	4/9
10	168	No	1	4/10

$$AP@5 = (1+1+1+0+0) / 3 = 1$$

$$AP@10 = (1 + 1 + 1 + 0.571) / 4 = 0.89275$$

Cosine Top 10 for query = stock rally

Rank	Document	Relevant	Recall	Precision
1	197	No	0	0
2	159	No	0	0
3	19	No	0	0
4	191	Yes	1/3	1/4
5	128	No	1/3	1/5
6	172	No	1/3	1/6
7	162	Yes	2/3	2/7
8	100	No	2/3	2/8
9	193	Yes	1	3/9
10	150	No	1	3/10

$$AP@5 = (0 + 0 + 0 + 1/4 + 0) / 1 = 1/4$$

$$AP@10 = (1/4 + 2/7 + 3/9) / 3 = 0.28968$$

Cosine Top 10 for query = debt crisis

Rank	Document	Relevant	Recall	Precision
1	199	Yes	1/3	1
2	113	Yes	2/3	1
3	125	Yes	1	1
4	180	No	1	3/4
5	179	No	1	3/5
6	101	No	1	3/6
7	189	No	1	3/7
8	124	No	1	3/8
9	111	No	1	3/9
10	131	No	1	3/10

$$AP@5 = 3/3 = 1$$

$$AP@10 = 3/3 = 1$$

Cosine Top 10 for query = stock future higher

Rank	Document	Relevant	Recall	Precision
1	13	Yes	1/5	1
2	2	Yes	2/5	1
3	155	No	2/5	2/3
4	112	Yes	3/5	3/4
5	20	No	3/5	3/5
6	111	Yes	4/5	4/6
7	59	No	4/5	4/7
8	98	No	4/5	4/8
9	122	No	4/5	4/9
10	35	Yes	1	5/10

$$AP@5 = (1 + 1 + 3/4) / 3 = 0.9167$$

$$AP@10 = (1 + 1 + 3/4 + 4/6 + 1/2) / 5 = 0.78333$$

For Cosine MAP@k results

$$MAP@5 = (1 + 1/4 + 1 + 0.9167) / 4 = 0.791675$$

$$MAP@10 = (0.89275 + 0.28968 + 1 + 0.78333) / 4 = 0.74144$$

Okapi Top 10 for query = europe

Rank	Document	Relevant	Recall	Precision
1	116	No	0	0
2	130	No	0	0
3	152	Yes	1/4	1/3
4	164	Yes	2/4	2/4
5	165	Yes	3/4	3/5
6	170	No	3/4	3/6
7	177	Yes	1	4/7
8	81	No	1	4/8
9	102	No	1	4/9
10	138	No	1	4/10

$$AP@5 = (1/3 + 1/2 + 3/5) / 3 = 0.47777667$$

$$AP@10 = (1/3 + 1/2 + 3/5 + 4/7) / 4 = 0.5012$$

Okapi Top 10 for query = stock rally

Rank	Document	Relevant	Recall	Precision
1	141	No	0	0
2	17	Yes	1/2	1/2
3	21	No	1/2	1/3
4	40	No	1/2	1/4
5	92	No	1/2	1/5
6	103	No	1/2	1/6
7	104	No	1/2	1/7
8	107	Yes	1	2/8
9	112	No	1	2/9
10	125	No	1	2/10

$$AP@5 = 1/2$$

$$AP@10 = (1/2 + 1/4) / 2 = 0.375$$

Okapi Top 10 for query = debt crisis

Rank	Document	Relevant	Recall	Precision
1	113	Yes	1/2	1
2	125	Yes	1	1
3	190	No	1	2/3
4	124	No	1	2/4
5	111	No	1	2/5
6	131	No	1	2/6
7	178	No	1	2/7
8	187	No	1	2/8
9	189	No	1	2/9
10	101	No	1	2/10

$$AP@5 = 1$$

$$AP@10 = 1$$

Okapi Top 10 for query = stock future higher

Rank	Document	Relevant	Recall	Precision
1	121	No	0	0
2	114	No	0	0
3	43	No	0	0
4	45	No	0	0
5	141	No	0	0
6	61	No	0	0
7	198	Yes	1/2	1/7
8	129	No	1/2	1/8
9	112	Yes	1	2/9
10	155	No	1	2/10

$$AP@5 = 0$$

$$AP@10 = (1/7 + 2/9) / 2 = 0.18254$$

For Okapi MAP@k results

$$MAP@5 = (0.47777667 + 1/2 + 1 + 0) / 4 = 0.4944$$

$$MAP@10 = (0.5012 + 0.375 + 1 + 0.18254) / 4 = 0.5147$$