Team Lost - Project2 Report

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Highlights

• Algorithm used to calculate scores

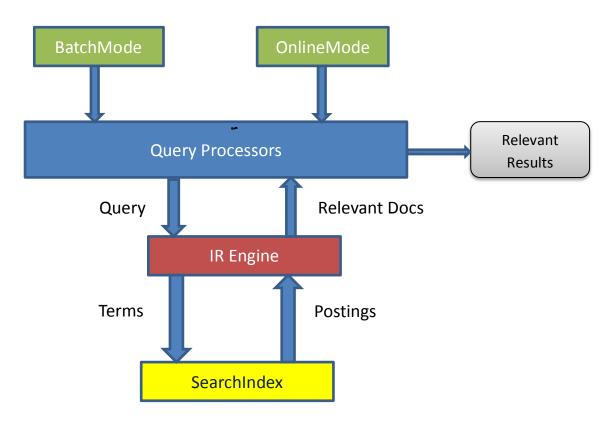
For calculating the score of a document, we **do Document at a time traversal** through the postings lists of the query terms. We add the document scores in a heap with a fixed size equal to number of results desired by user.

For each document, the document vector and query vector are sent to a generic function that assigns the correct weights depending on the scoring function(Boolean/ Cosine / Okapi).

- Algorithm used to merge indexes
 The algorithm is an implementation of SPIMI (Single Pass In Memory Indexing). It opens
 all the temporary documents and writes the final index in one go. This has resulted in it
 being much faster than the previous indexer merge.
- Method to retrieve postings list
 The term-offset index is stored in memory as a hash map. Moreover, the offset comprises
 of byte offset and length of postings. This lets us fetch the postings of a term with
 minimum buffer.

Output AuthorInvIndx CategoryInvIndx Dictionaries DocFwdIndx DocInvIndx SemWiki

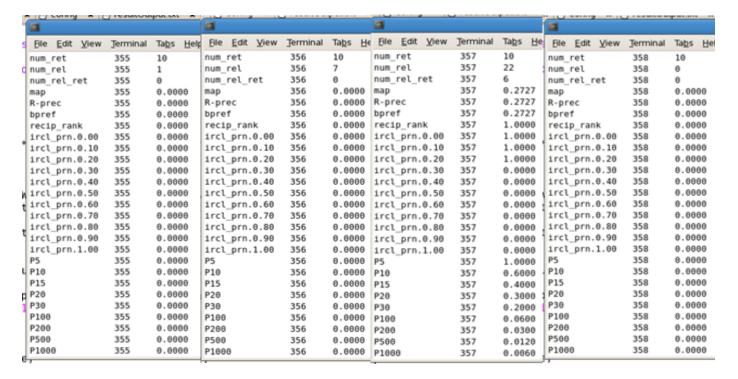
Flow Diagram



IREVAL results:

Okapi

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num_ret	351	10	num_ret	352	10	num_ret	353	10	num ret	354	10
num_rel	351	10	num rel	352	52	num_rel	353	22	num_ret	354	25
num_rel_ret	351	5	num rel ret	352	3	num_rel_ret	353	6	num_rel_ret	354	2
map	351	0.4050	map	352	0.0269	map	353	0.2446	map	354	0.0147
R-prec	351	0.5000	R-prec	352	0.0577	R-prec	353	0.2727	R-prec	354	0.0800
bpref	351	0.4600	bpref	352	0.0551	bpref	353	0.2624	bpref	354	0.0592
recip_rank	351	1.0000	recip_rank	352	0.5000	recip_rank	353	1.0000	recip rank	354	0.1667
ircl_prn.0.00	351	1.0000	ircl_prn.0.00	352	0.5000	ircl_prn.0.00	353	1.0000	ircl prn.0.00	354	0.2000
ircl_prn.0.10	351	1.0000	ircl_prn.0.10	352	0.0000	ircl_prn.0.10	353	1.0000	ircl prn.0.10	354	0.0000
ircl_prn.0.20	351	0.8333	ircl_prn.0.20	352	0.0000	ircl_prn.0.20	353	0.7143	ircl prn.0.20	354	0.0000
ircl_prn.0.30	351	0.8333	ircl_prn.0.30	352	0.0000	ircl_prn.0.30	353	0.0000	ircl prn.0.30	354	0.0000
ircl_prn.0.40	351	0.8333	ircl_prn.0.40	352	0.0000	ircl_prn.0.40	353	0.0000	ircl prn.0.40	354	0.0000
ircl_prn.0.50	351	0.8333	ircl_prn.0.50	352	0.0000	ircl_prn.0.50	353	0.0000	ircl prn.0.50	354	0.0000
ircl_prn.0.60	351	0.0000	ircl_prn.0.60	352	0.0000	ircl_prn.0.60	353	0.0000	ircl prn.0.60	354	0.0000
ircl_prn.0.70	351	0.0000	ircl_prn.0.70	352	0.0000	ircl_prn.0.70	353	0.0000	ircl prn.0.70	354	0.0000
ircl_prn.0.80	351	0.0000	ircl_prn.0.80	352	0.0000	ircl_prn.0.80	353	0.0000	ircl prn.0.80	354	0.0000
ircl_prn.0.90	351	0.0000	ircl_prn.0.90	352	0.0000	ircl_prn.0.90	353	0.0000	ircl_prn.0.90	354	0.0000
ircl_prn.1.00	351	0.0000	ircl_prn.1.00	352	0.0000	ircl_prn.1.00	353	0.0000	ircl_prn.1.00	354	0.0000
P5	351	0.8000	P5	352	0.4000	P5	353	0.8000	P5	354	0.0000
P10	351	0.5000	P10	352	0.3000	P10	353	0.6000	P10	354	0.2000
P15	351	0.3333	P15	352	0.2000	P15	353	0.4000	P15	354	0.1333
P20	351	0.2500	P20	352	0.1500	P20	353	0.3000	P20	354	0.1000
P30	351	0.1667	P30	352	0.1000	P30	353	0.2000	P30	354	0.0667
P100	351	0.0500	P100	352	0.0300	P100	353	0.0600	P100	354	0.0200
P200	351	0.0250	P200	352	0.0150	P200	353	0.0300	P200	354	0.0100
P500	351	0.0100	P500	352	0.0060	P500	353	0.0120	P500	354	0.0040
P1000	351	0.0050	P1000	352	0.0030	P1000	353	0.0060	P1000	354	0.0020



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	num	rel_r	et	359	Θ	
	map			359	0.00	99
	R-pr	ec		359	0.00	00
	bpre	f		359	0.00	99
	reci	p_ran	k	359	0.00	88
	ircl	_prn.	0.00	359	0.00	00
1	ircl	_prn.	0.10	359	0.00	99
	ircl	_prn.	0.20	359	0.00	88
	ircl	_prn.	0.30	359	0.00	99
	ircl	_prn.	0.40	359	0.00	88
W	ircl	_prn.	0.50	359	0.00	88
t	ircl	_prn.	0.60	359	0.00	99
1	ircl	_prn.	0.70	359	0.00	88
	ircl	_prn.	0.80	359	0.00	99
٦	ircl	_prn.	0.90	359	0.00	99
	ircl	_prn.	1.00	359	0.00	88
	P5			359	0.00	00
ų	P10			359	0.00	99
	P15			359	0.00	99
р	P20			359	0.00	99
i	P30			359	0.00	88
1	P100			359	0.00	99
	P200			359	0.00	99
	P500			359	0.00	88
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	map			360	0.000	90
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J	ircl	_prn.	0.00	360	0.000	90
1	ircl	_prn.	0.10	360	0.000	90
	ircl	_prn.	0.20	360	0.000	90
	ircl	_prn.	0.30	360	0.000	90
	ircl	_prn.	0.40	360	0.000	90
١	ircl	_prn.	0.50	360	0.000	90
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	ircl	_prn.	0.70	360	0.000	
ļ		_prn.		360	0.000	
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		_prn.	1.00	360	0.000	
	P5			360	0.000	
1	P10			360	0.000	
	P15			360	0.000	
į	P20			360	0.000	
ĺ	P30			360	0.000	
	P100			360	0.000	
	P200			360	0.000	
	P500			360	0.000	
l	P100	0		360	0.000	90

Okapi F-Measur	e					
File Number	MAP	num_ret	num_rel	num_rel_ret	Recall	F-Measure
351	0.405	10	10	5	0.5	0.447514
352	0.0269	10	52	3	0.057692	0.036692
353	0.2446	10	22	6	0.272727	0.257899
354	0.0147	10	25	2	0.08	0.024836
355	0	10	1	0	0	0
356	0	10	7	0	0	0
357	0.2727	10	22	6	0.272727	0.272714
358	0	10	0	0	0	0
359	0	10	6	0	0	0
360	0	10	2	0	0	0

Cosine

<u>F</u> ile <u>E</u> dit <u>V</u> iew	<u>T</u> erminal	Ta <u>b</u> s <u>H</u> elp	<u>F</u> ile <u>E</u> dit <u>V</u> iew	<u>T</u> erminal	Ta <u>b</u> s <u>H</u> elp	<u>File Edit Viev</u>	v <u>T</u> ermina	ıl Ta <u>b</u> s <u>H</u> elj		w <u>T</u> ermin	al Ta <u>b</u> s <u>H</u> el
num ret	351	10	num ret	352	10	num ret	353	10	num ret	354	10
num_rel	351	10	num_rel	352	52	num_rel	353	22	num_rel	354	25
num_rel_ret	351	Θ	num_rel_ret	352	0	num_rel_ret	353	5	num_rel_ret	354	Θ
map	351	0.0000	map	352	0.0000	map	353	0.1130	map	354	0.0000
R-prec	351 351	0.0000 0.0000	R-prec bpref	352 352	0.0000	R-prec bpref	353 353	0.2273 0.1983	R-prec	354 354	0.0000 0.0000
bpref recip rank	351	0.0000	recip_rank	352	0.0000	recip_rank	353	0.1983	bpref recip rank	354 354	0.0000
ircl prn.0.00	351	0.0000	ircl prn.0.00	352	0.0000	ircl prn.0.00		0.6667	ircl prn.0.00		0.0000
ircl_prn.0.10	351	0.0000	ircl prn.0.10	352	0.0000	ircl prn.0.10		0.5000	ircl_prn.0.10		0.0000
ircl prn.0.20	351	0.0000	ircl_prn.0.20	352	0.0000	ircl_prn.0.20	353	0.5000	ircl prn.0.20		0.0000
ircl_prn.0.30	351	0.0000	ircl_prn.0.30	352	0.0000	ircl_prn.0.30		0.0000	ircl_prn.0.30	354	0.0000
ircl_prn.0.40	351	0.0000	ircl_prn.0.40	352	0.0000	ircl_prn.0.40		0.0000	ircl_prn.0.40		0.0000
ircl_prn.0.50	351	0.0000	ircl_prn.0.50	352	0.0000	ircl_prn.0.50		0.0000	ircl_prn.0.50		0.0000
ircl_prn.0.60	351	0.0000	ircl_prn.0.60	352 352	0.0000	ircl_prn.0.60 ircl prn.0.70		0.0000	ircl_prn.0.60		0.0000
ircl_prn.0.70 ircl prn.0.80	351 351	0.0000	ircl_prn.0.70 ircl prn.0.80	352 352	0.0000	ircl_prn.0.80		0.0000	ircl_prn.0.70		0.0000
ircl prn.0.90	351	0.0000	ircl prn.0.90	352	0.0000	ircl prn.0.90		0.0000	ircl_prn.0.90		0.0000
ircl prn.1.00	351	0.0000	ircl_prn.1.00	352	0.0000	ircl prn.1.00		0.0000	ircl prn.1.00		0.0000
P5	351	0.0000	P5	352	0.0000	P5'	353	0.4000	P5	354	0.0000
P10	351	0.0000	P10	352	0.0000	P10	353	0.5000	P10	354	0.0000
P15	351	0.0000	P15	352	0.0000	P15	353	0.3333	P15	354	0.0000
P20	351	0.0000	P20	352	0.0000	P20	353	0.2500	P20	354	0.0000
P30	351	0.0000	P30	352	0.0000	P30	353	0.1667	P30	354	0.0000
P100	351 351	0.0000	P100 P200	352 352	0.0000	P100 P200	353 353	0.0500 0.0250	P100 P200	354 354	0.0000
P200 P500	351	0.0000	P500	352	0.0000	P500	353	0.0230	P500	354 354	0.0000 0.0000
P1000	351	0.0000	P1000	352	0.0000	P1000	353	0.0050	P1000	354	0.0000
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<u>File Edit V</u> iew num_ret	355	10	<u>F</u> ile <u>E</u> dit <u>V</u> iew num_ret	356	10	<u>F</u> ile <u>E</u> dit <u>V</u> iew num_ret		Ta <u>b</u> s <u>H</u> elr 10 n	<u>F</u> ile <u>E</u> dit <u>V</u> iew	358	10
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File Edit View num_ret num_rel num_rel_ret	355 355 355	10 1 0	<u>File Edit V</u> iew num_ret num_rel num_rel_ret	356 356 356 356 356	10 7 0 0.0000 0.0000	File Edit View num_ret num_rel num_rel_ret map R-prec	357 357 357 357 357	Ta <u>b</u> s <u>H</u> elp 10 n 22 n 0 n 0.0000 n	File Edit View num_ret num_rel num_rel_ret	358 358 358	10 0 0
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File Edit View num_ret num_ret num_rel_ret map R-prec bpref recip_rank ircl_prn.0.00 ircl_prn.0.30 ircl_prn.0.30 ircl_prn.0.60 ircl_prn.0.60 ircl_prn.0.60 ircl_prn.0.60 ircl_prn.0.70 ircl_prn.0.80 ircl_prn.0.90 ircl_prn.0.90 ircl_prn.1.00 P5 P10 P15 P20 P30 P100 P200	355 355 355 355 355 355 355 355 355 355	10 1 0 0.0000	File Edit View num_ret num_ret num_rel_ret map R-prec bpref recip_rn.0.00 ircl_prn.0.20 ircl_prn.0.30 ircl_prn.0.50 ircl_prn.0.50 ircl_prn.0.60 ircl_prn.0.70 ircl_prn.0.80 ircl_prn.0.90 ircl_prn.0.90 ircl_prn.1.00 P5 P10 P15 P20 P30 P100 P200	356 356 356 356 356 356 356 356 356 356	10 7 0 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	File Edit View num_ret num_rel num_rel_ret map R-prec bpref recip_rn.0.00 ircl_prn.0.20 ircl_prn.0.30 ircl_prn.0.50 ircl_prn.0.60 ircl_prn.0.60 ircl_prn.0.60 ircl_prn.0.70 ircl_prn.0.80 ircl_prn.0.70 ircl_prn.0.80 ircl_prn.0.90 ircl_prn.1.00 P5 P10 P15 P20 P30 P100 P200	357 357 357 357 357 357 357 357 357 357	Tales Helf 10 22 0 0.0000	File Edit View hum_ret hum_ret hum_rel hum_rel_ret hum_rel	358 358 358 358 358 358 358 358 358 358	10 0 0 0.0000
File Edit View num_ret num_ret num_rel_ret map R-prec bpref recip_rank ircl_prn.0.00 ircl_prn.0.30 ircl_prn.0.30 ircl_prn.0.40 ircl_prn.0.50 ircl_prn.0.60 ircl_prn.0.70 ircl_prn.0.80 ircl_prn.0.90 ircl_prn.1.00 PS P10 P15 P20 P30 P100	355 355 355 355 355 355 355 355 355 355	10 1 0 0.0000	File Edit View num_ret num_ret num_rel_ret map R-prec bpref recip_rank ircl_prn.0.00 ircl_prn.0.30 ircl_prn.0.30 ircl_prn.0.40 ircl_prn.0.50 ircl_prn.0.60 ircl_prn.0.60 ircl_prn.0.70 ircl_prn.0.80 ircl_prn.0.90 ircl_prn.1.00 P5 P10 P15 P20 P30 P100	356 356 356 356 356 356 356 356 356 356	10 7 0 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	File Edit View num_ret num_ret num_rel_ret map R-prec bpref recip_rank ircl_prn.0.00 ircl_prn.0.10 ircl_prn.0.30 ircl_prn.0.40 ircl_prn.0.50 ircl_prn.0.60 ircl_prn.0.60 ircl_prn.0.60 ircl_prn.0.70 ircl_prn.0.80 ircl_prn.0.90 ircl_prn.1.00 P5 P10 P15 P20 P30 P100	357 357 357 357 357 357 357 357 357 357	Tabs Help 10 22 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	File Edit View hum_ret hum_ret hum_rel_ret hum_rel_prn.0.00 hum_rel_prn.0.00 hum_rel_prn.0.30 hum_rel_prn.0.70 hum_rel_prn.0.70 hum_rel_prn.0.90 hum_rel_prn.1.00 hum_re	358 358 358 358 358 358 358 358 358 358	10 0 0 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	<u>T</u> erminal	Ta <u>b</u> s	<u>H</u> elp	<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	<u>T</u> erminal	Ta <u>b</u> s	<u>H</u> el	<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	<u>T</u> erminal	Ta <u>b</u> s	<u>H</u> elp
num	ret		359	10		P500			359	0.00	00	num_	q		all	10	
num			359	6		P100	0		359	0.00	00	num_	ret		all	100	
_	rel r	et	359	Θ		num_	ret		360	10		num_			all	147	
map			359	0.00	90	num_	rel		360	2		_	rel_r	et	all	5	
R-pr	ec		359	0.00		num_	rel_r	et	360	0		map			all	0.01	
bpre			359	0.00		map			360	0.00		gm_a			all	0.00	
	p ran	k	359	0.00		R-pr			360	0.00		R-pr			all	0.02	
	prn.		359	0.00		bpre		_	360	0.00		bpre			all	0.01	
	_prn.		359	0.00			p_ran		360	0.00			p_ran		all	0.05	
	_prn.		359	0.00			_prn.		360	0.00			_prn. _prn.		all all	0.06	
	_prn.		359	0.00			_prn.		360	0.00			_prn. _prn.		all	0.05	
	_prn.		359	0.00			_prn.		360 360	0.00			prn.		all	0.00	
			359	0.00			_prn. prn.		360	0.00			prn.		all	0.00	
	_prn.		359				prn.		360	0.00			prn.		all	0.00	
	_prn.			0.00			prn.		360	0.00			prn.		all	0.00	
	_prn.		359	0.00			prn.		360	0.00			prn.		all	0.00	
	_prn.		359	0.00			prn.		360	0.00			prn.		all	0.00	
	_prn.		359	0.00			prn.		360	0.00		ircl	 prn.	0.90	all	0.00	00
	_prn.	1.00	359	0.00			_prn.		360	0.00			 prn.		all	0.00	00
P5			359	0.00		P5	_'		360	0.00	00	P5			all	0.04	00
P10			359	0.00		P10			360	0.00	00	P10			all	0.05	00
P15			359	0.00		P15			360	0.00	00	P15			all	0.03	33
P20			359	0.00		P20			360	0.00	00	P20			all	0.02	50
P30			359	0.00		P30			360	0.00	00	P30			all	0.01	
P100			359	0.00		P100			360	0.00	00	P100			all	0.00	
P200			359	0.00	90	P200			360	0.00	00	P200			all	0.00	
P500			359	0.00	90	P500			360	0.00	00	P500			all	0.00	
P100	Θ		359	0.00	90	P100	Θ		360	0.00	00 mot	P100	0		all	0.00	05 m <u>ata</u>

Cosine F-Meas	ure		l mo+;		Imata	
File Number	MAP	num_ret	num_rel	num_rel_ret	Recall	F-Measure
351	. 0	10			0	0
352	0	10	52	0	0	0
353	0.113	10	22	5	0.227272727	0.045454545
354	0	10	25	0	0	0
355	0	10	1	0	0	0
356	0	10	7	0	0	0
357	0	10	22	0	0	0
358	0	10	0	0	0	0
359	0	10	6	0	0	0
360	0	10	2	0	0	0

Boolean

<u>F</u> ile <u>E</u> dit <u>V</u> iew	<u>T</u> erminal	Ta <u>b</u> s <u>H</u> e	<u>F</u> ile <u>E</u> dit <u>V</u> iew	<u>T</u> erminal	Ta <u>b</u> s <u>H</u> elp	<u>F</u> ile <u>E</u> dit <u>V</u> iew	<u>T</u> erminal	Ta <u>b</u> s <u>H</u> elj	<u>F</u> ile <u>E</u> dit <u>V</u> iew	<u>T</u> erminal	Ta <u>b</u> s <u>H</u> el
num_ret	351	10	num ret	352	10	num ret	353	10	num_ret	354	10
num_rel	351	10	num rel	352	52	num rel	353	22	num_rel	354	25
num_rel_ret	351	Θ	num rel ret	352	Θ	num rel ret	353	2	num_rel_ret	354	Θ
map	351	0.0000	map	352	0.0000	map	353	0.0909	map	354	0.0000
R-prec	351	0.0000	R-prec	352	0.0000	R-prec	353	0.0909	R-prec	354	0.0000
bpref	351	0.0000	bpref	352	0.0000	bpref	353	0.0909	bpref	354	0.0000
recip_rank	351	0.0000	recip_rank	352	0.0000	recip rank	353	1.0000	recip_rank	354	0.0000
ircl_prn.0.00	351	0.0000	ircl_prn.0.00	352	0.0000	ircl prn.0.00	353	1.0000	ircl_prn.0.00	354	0.0000
ircl_prn.0.10	351	0.0000	ircl_prn.0.10	352	0.0000	ircl prn.0.10	353	0.0000	ircl_prn.0.10	354	0.0000
ircl_prn.0.20	351	0.0000	ircl_prn.0.20	352	0.0000	ircl prn.0.20	353	0.0000	ircl_prn.0.20	354	0.0000
ircl_prn.0.30	351	0.0000	ircl_prn.0.30	352	0.0000	ircl prn.0.30	353	0.0000	ircl_prn.0.30	354	0.0000
ircl_prn.0.40	351	0.0000	ircl_prn.0.40	352	0.0000	ircl prn.0.40	353	0.0000	ircl_prn.0.40	354	0.0000
ircl_prn.0.50	351	0.0000	ircl_prn.0.50	352	0.0000	ircl prn.0.50	353	0.0000	ircl_prn.0.50	354	0.0000
ircl_prn.0.60	351	0.0000	ircl_prn.0.60	352	0.0000	ircl prn.0.60	353	0.0000	ircl_prn.0.60	354	0.0000
ircl_prn.0.70	351	0.0000	ircl_prn.0.70	352	0.0000	ircl prn.0.70	353	0.0000	ircl_prn.0.70	354	0.0000
ircl_prn.0.80	351	0.0000	ircl_prn.0.80	352	0.0000	ircl_prn.0.80	353	0.0000	ircl_prn.0.80	354	0.0000
ircl_prn.0.90	351	0.0000	ircl_prn.0.90	352	0.0000	ircl_prn.0.90	353	0.0000	ircl_prn.0.90	354	0.0000
ircl_prn.1.00	351	0.0000	ircl_prn.1.00	352	0.0000	ircl_prn.1.00	353	0.0000	ircl_prn.1.00	354	0.0000
P5	351	0.0000	P5	352	0.0000	P5	353	0.4000	P5	354	0.0000
P10	351	0.0000	P10	352	0.0000	P10	353	0.2000	P10	354	0.0000
P15	351	0.0000	P15	352	0.0000	P15	353	0.1333	P15	354	0.0000
P20	351	0.0000	P20	352	0.0000	P20	353	0.1000	P20	354	0.0000
P30	351	0.0000	P30	352	0.0000	P30	353	0.0667	P30	354	0.0000
P100	351	0.0000	P100	352	0.0000	P100	353	0.0200	P100	354	0.0000
P200	351	0.0000	P200	352	0.0000	P200	353	0.0100	P200	354	0.0000
P500	351	0.0000	P500	352	0.0000	P500	353	0.0040	P500	354	0.0000
P1000	351	0.0000	P1000	352	0.0000	P1000	353	0.0020	P1000	354	0.0000

<u>F</u> ile <u>E</u> dit <u>V</u> iew	<u>T</u> erminal	Ta <u>b</u> s <u>H</u> elp	<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	<u>T</u> erminal	Ta <u>b</u> s	<u>H</u> e	<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	<u>T</u> erminal	Ta <u>b</u> s	<u>Н</u> е	<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	<u>T</u> erminal	Ta <u>b</u> s	<u>H</u> e
num_ret	355	10	num_i	ret		356	10		num_	ret		357	10		num	ret		358	10	
num_rel	355	1	num_i	rel		356	7		num_	rel		357	22		num	rel		358	Θ	
num_rel_ret	355	0	num_i	rel_r	et	356	0		num_	rel_r	et	357	6		num	rel	ret	358	Θ	
map	355	0.0000	map			356	0.000	90	map			357	0.2		map			358	0.000	0
R-prec	355	0.0000	R-pre	ec		356	0.000	90	R-pr	ec		357	0.2	727	R-p	rec		358	0.000	0
bpref	355	0.0000	bpre	f		356	0.000	90	bpre	f		357	0.2		bpr	ef		358	0.000	0
recip_rank	355	0.0000	recip	p_ran	k	356	0.000	90		p_ran		357	1.0		rec	ip_ra	nk	358	0.000	0
ircl_prn.0.00	355	0.0000	ircl	prn.	0.00	356	0.000	90	ircl	_prn.	0.00	357	1.0	000	irc	l prn	.0.00	358	0.000	0
ircl_prn.0.10	355	0.0000	ircl	prn.	0.10	356	0.000	90	ircl	_prn.	0.10	357	1.0	000	irc	 l prn	.0.10	358	0.000	0
ircl_prn.0.20	355	0.0000	ircl	prn.	0.20	356	0.000	90	ircl	_prn.	0.20	357	1.0		irc	l prn	.0.20	358	0.000	0
ircl_prn.0.30	355	0.0000	ircl	prn.	0.30	356	0.000	90	ircl	_prn.	0.30	357	0.0		irc	l prn	.0.30	358	0.000	0
ircl_prn.0.40	355	0.0000	ircl	prn.	0.40	356	0.000	90		_prn.		357	0.0		irc	l_prn	.0.40	358	0.000	0
ircl_prn.0.50	355	0.0000	ircl	prn.	0.50	356	0.000	90	ircl	_prn.	0.50	357	0.0	000	irc	l prn	.0.50	358	0.000	0
ircl_prn.0.60	355	0.0000	ircl	prn.	0.60	356	0.000	90	ircl	_prn.	0.60	357	0.0	000	irc	l prn	.0.60	358	0.000	0
ircl_prn.0.70	355	0.0000	ircl	prn.	0.70	356	0.000	90	ircl	_prn.	0.70	357	0.0		irc	l prn	.0.70	358	0.000	0
ircl_prn.0.80	355	0.0000	ircl	prn.	0.80	356	0.000	90	ircl	_prn.	0.80	357	0.0	000	irc	l prn	.0.80	358	0.000	00
ircl_prn.0.90	355	0.0000	ircl	prn.	0.90	356	0.000	90	ircl	_prn.	0.90	357	0.0	000	irc	 l prn	.0.90	358	0.000	0
ircl_prn.1.00	355	0.0000	ircl	prn.	1.00	356	0.000	90	ircl	_prn.	1.00	357	0.0	000	irc	 l prn	.1.00	358	0.000	0
P5	355	0.0000	P5			356	0.000	90	P5			357	1.0		P5			358	0.000	0
P10	355	0.0000	P10			356	0.000	90	P10			357	0.6	000	P10			358	0.000	00
P15	355	0.0000	P15			356	0.000	90	P15			357	0.4	000	P15			358	0.000	00
P20	355	0.0000	P20			356	0.000	90	P20			357	0.3	000	P20			358	0.000	0
P30	355	0.0000	P30			356	0.000	90	P30			357	0.2	000	P30			358	0.000	0
P100	355	0.0000	P100			356	0.000	90	P100			357	0.0	600	P10	0		358	0.000	00
P200	355	0.0000	P200			356	0.000	90	P200			357	0.0	300	P20	0		358	0.000	00
P500	355	0.0000	P500			356	0.000	90	P500			357	0.0	120	P50	0		358	0.000	00
P1000	355	0.0000	P1000	9		356	0.000	90	P100	0		357	0.0	060	P10	99		358	0.000	

<u>F</u> ile <u>E</u> dit <u>V</u> iew	<u>T</u> erminal	Ta <u>b</u> s <u>H</u> e	<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>T</u> e	rminal Ta <u>b</u> s <u>H</u> elp
num_ret	359	10	num_ret 3	60 10
num_rel	359	6	num_rel 3	60 2
num_rel_ret	359	Θ	num_rel_ret 3	60 0
map	359	0.0000	map 3	60 0.0000
R-prec	359	0.0000	R-prec 3	60 0.0000
bpref	359	0.0000	bpref 3	60 0.0000
recip_rank	359	0.0000	recip_rank 3	60 0.0000
ircl_prn.0.00	359	0.0000		60 0.0000
ircl_prn.0.10	359	0.0000		60 0.0000
ircl_prn.0.20	359	0.0000		60 0.0000
ircl_prn.0.30	359	0.0000		60 0.0000
ircl_prn.0.40	359	0.0000		60 0.0000
ircl_prn.0.50	359	0.0000		60 0.0000
ircl_prn.0.60	359	0.0000		60 0.0000
ircl_prn.0.70	359	0.0000	'	60 0.0000
ircl_prn.0.80	359	0.0000		60 0.0000
ircl_prn.0.90	359	0.0000	'	60 0.0000
ircl_prn.1.00	359	0.0000		60 0.0000
P5	359	0.0000		60 0.0000
P10	359	0.0000		60 0.0000
P15	359	0.0000		60 0.0000
P20	359	0.0000		60 0.0000
P30	359	0.0000		60 0.0000
P100	359	0.0000		60 0.0000
P200	359	0.0000		60 0.0000
P500	359	0.0000		60 0.0000
P1000	359	0.0000	P1000 3	60 0.0000

Boolean F-Mea	sure					
File Number	MAP	num_ret	num_rel	num_rel_ret	Recall	F-Measure
351	0	10	10	0	0	0
352	0	10	52	0	0	0
353	0.09	10	22	2	0.090909	0.090452
354	0	10	25	0	0	0
355	0	10	1	0	0	0
356	0	10	7	0	0	0
357	0.27	10	33	6	0.181818	0.217304
358	0	10	0	0	0	0
359	0	10	2	6	3	0
360	0	10	2	0	0	0

Contributions of Team Members

Ashutosh Pandey

Phase1:

- Plain Text Parser
- Term, Term Count Dictionaries
- Single Pass In Memory Merge

Phase 2:

- Implementation of Single Pass In Memory Merge
- Interface to All Indices: Efficient Implementation of Posting List Retrieval using Input and Output Buffering
- Generation of statistics of program performance on TREC data using different scoring methods.

Shishir Garg

Phase 1:

Indexer.h and Indexer.cpp

- Class to hold inverted index structure and associated variables.
- Function UpdateIndex to update index as each file is processed and write to the disk if memory is exceeded.
- Parameters.cpp Class to hold all parameters provided in configuration file
- Function to read and parse parameters given file path.
- Stopword.cpp Function to filter tokens based on a file of stopwords. Not used in final implementation.

Phase 2:

- Stopword Removal.
- Boolean.cpp, Okapi.cpp and Cosine.cpp. Not used in final implementation.
- Project2_report.pdf

Raman Sonkhla

Work done Phase-1

- 1. Wiki files processing
 - Metadata parsing and SemiWiki file generation.
 - Generation of dictionaries and repositories related to wiki files.
- 2. Program design
 - Algorithm flow (participation of all team members)
 - Generic classes for Data collection (crawler), Dictionaries generation and dumping.

Work done Phase-2

- 1. Inverted index generation
 - Re-did the Inverted index from scratch. Index being generated Phase-1 did not have any information regarding: Term frequency in a document, Document frequency, Document length, etc. This data is required for score / compute documents similarity. Also temp-inverted index has data like length of postings etc, for efficient merging operation.
 - Implemented Hash map based inverted index generation to reduce indexing time.
 - Generation of Inverted indexes for Author and categories, and Champions list implementation. Champions
 list is not being used right now. But the frame work is complete. We can easy add this feature in phase 3, if
 we have some extra time.
 - Some important source files
 - i. InvertedIndexGenerator(.h/.cpp)
 - ii. InvertedIndexHashMap(.h/.cpp)
 - iii. PostingsValue(.h/.cpp)
- 2. Query processor
 - Added support for both Batch mode and online mode of queries.
 - Added logic for robustness against unexpected query and fault tolerance.
 - Added support for generation of output in the expected format, including static snippets generation using SemiWiki files. Currently we are not using fwd index. Using it, simple k-mean clustering and a window size we implement a form of key-word-in-context (KWIC) snippet.
 - Some important source files
 - QuerryProcessor(.h/.cpp)
 - ii. Parameters(.h/.cpp)
- 3. Information retrieval engine
 - Added support for processing query vector given by Query processor.
 - Have implemented 3 ranking methods (Boolean, Cosine and Okapi).
 - Implemented a priority queue (of size as requested by Query processor) to store and update scores of most relevant documents.
 - Some important source files
 - i. IREngine(.h/.cpp)
 - ii. HeapDocScore(.h/.cpp)