

Following table shows structure and description of all classes and methods that has been developed for this presentation.

Class	Description	Methods	Description
Data()	Loads three data collection parts	read_doc()	Loads and keeps ID and abstract of documents
		read_query()	Loads and puts queries in a dictionary frame
		read_gproof()	Loads and puts first two columns of ground proofs
		call_dqg()	Returns ground proofs and combination of documents and queries
PrePrc()	Applys filters	vec()	Tokenize documents and queries and returns <i>term-documents matrix (tdm)</i>
		stopw()	Removes stop-words in tdm
		stem()	Stems tokenised terms in tdm
		weigthed()	Returns weighed tdm
InfRet()	Applys different models	fullv()	Returns recall and precision of full vector matrix
		lsi()	Applies k-rank SVD and returns recall and precision
		cluster()	Applies clustering and returns recall and precision
		nmf()	Applies Nonnegative Matrix Factorization and returns recall and precision
		lgkb()	Applies LGK Bidiagonalization and returns recall and precision
AvgPrfm()	Returns average performance of models	ave_fullv()	Given numbers of queries, returns average of recall and precision of full vector matrix
		ave_lsi()	Applies k-rank SVD and given numbers of queries, returns average of recall and precision
		ave_cluster()	Applies clustering and given numbers of queries, returns average of recall and precision
		ave_nmf()	Applies Nonnegative Matrix Factorization and given numbers of queries, returns average of recall and precision
		ave_lgkb()	Applies LGK Bidiagonalization and given numbers of queries, returns average of recall and precision
		for_display()	Reconstructs recall and precision and measures mean of precision