

CSCI 572

Assignment 4 : Indexing the Web using Solr

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Website Indexed : LA Times

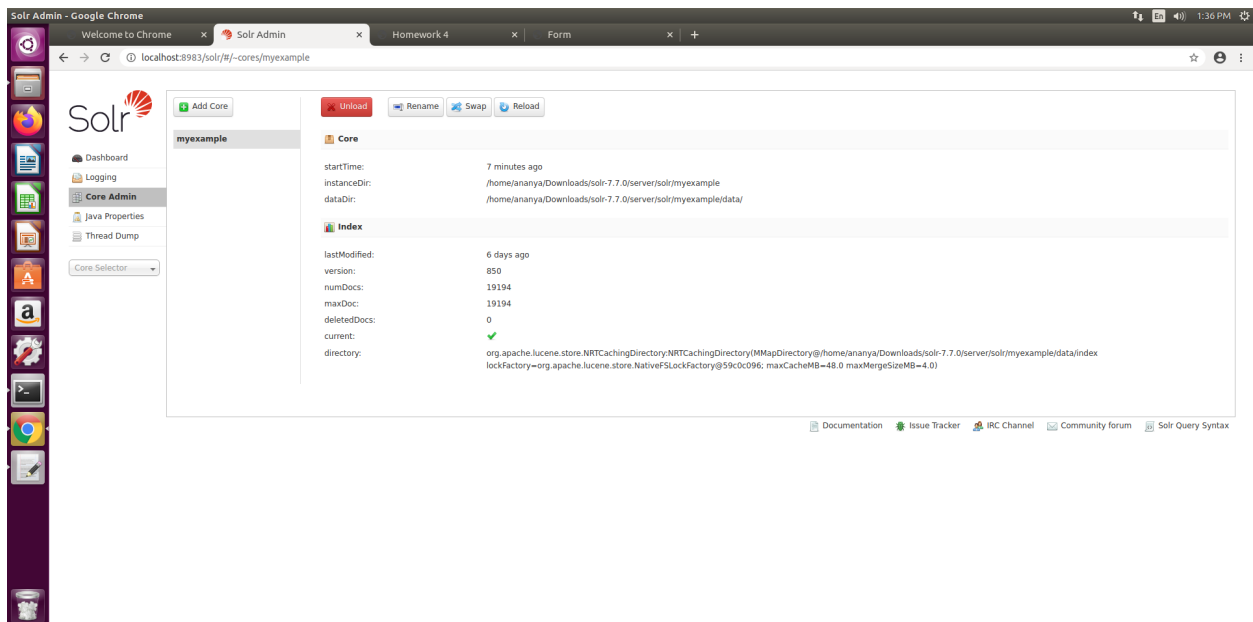
Step 1 : Solr Installation

- Downloaded and installed VirtualBox VM following which mounted Ubuntu on the Virtual machine. Post further installation of Ubuntu, Java and guest additions, downloaded and installed Solr7.7.0. as directed in the guidelines.
- Did the following on Solr:
 - Launched Solr7 using **bin/solr start**.
 - Created a core 'myexample' by using **bin/solr create -c myexample**.
 - Indexed all the LA Times html files using Apache Tika.
 - This indexing can be viewed on port 8983 using **localhost:8983/solr/#**

The screenshot shows the Solr Admin web interface in a Google Chrome browser. The address bar displays `localhost:8983/solr/#/myexample/core-overview`. The interface includes a sidebar with navigation links such as Dashboard, Logging, Core Admin, Java Properties, Thread Dump, Overview (selected), Analysis, Dataimport, Documents, Files, Ping, Plugins / Stats, Query, Replication, Schema, and Segments info. The main content area is divided into three sections: Statistics, Instance, and Replication (Master). The Statistics section shows metrics like Last Modified (6 days ago), Num Docs (19194), Max Doc (19194), Heap Memory Usage (-1), Deleted Docs (0), Version (850), Segment Count (21), and Current status (green checkmark). The Instance section lists configuration details: CWD, Instance, Data, Index, and Impl. The Replication (Master) section displays a table with columns Version, Gen, and Size, showing a Master (Searching) node with version 1585560167252, generation 134, and size 507.71 MB. At the bottom, there are links to Documentation, Issue Tracker, IRC Channel, Community forum, and Solr Query Syntax.

Step 2: Using Java and PageRank Algorithm for extracting the Edge List

- Downloaded the jsoup library and wrote the code in java to extract EdgeList.txt for the downloaded HTML data
- Implemented the PageRank algorithm on all the extracted links using NetworkX library. It returns pages with their corresponding PageRank scores in a new file called external_pageRank.
- Used the following parameters:
alpha=0.85, personalization=None, max_iter=30, tol=1e-06, nstart=None, weight='weight', dangling=None
- Inserted the external_pageRank file in the data folder of the core, made required changes and reloaded the core.



Step 3 : Verifying the results on Solr

- Executed the 'virus' query on Solr using Lucene.

The screenshot shows the Solr Admin web interface in Google Chrome. The browser tabs include 'Solr Admin', 'Homework 4', 'Five ways scientists are', 'Monos se volvieron inmu', and 'Indexing the Web Using'. The address bar shows 'localhost:8983/solr/#/myexample/query'. The left sidebar contains navigation links: Dashboard, Logging, Core Admin, Java Properties, Thread Dump, Overview, Analysis, Dataimport, Documents, Files, Ping, Plugins / Stats, Query (selected), Replication, Schema, and Segments info. The 'Query' section is active, showing a 'Request-Handler (qt)' dropdown set to '/select'. The 'q' field contains 'Virus'. The 'fq' field is empty. The 'sort' field is empty. The 'start' field is '0' and the 'rows' field is '10'. The 'wt' field is 'json'. The 'indent' checkbox is checked. The 'debugQuery' checkbox is unchecked. The 'Execute Query' button is visible. The main content area displays the JSON response for the query. The response includes a 'responseHeader' with status 0, QTime 466, and params. The 'response' section shows 'numFound': 242, 'start': 0, and a list of document IDs.

- Executed the 'virus' query on Solr using PageRank.

The screenshot shows the Solr Admin web interface in Google Chrome, similar to the previous one. The browser tabs are the same. The address bar shows 'localhost:8983/solr/#/myexample/query'. The left sidebar is the same. The 'Query' section is active. The 'Request-Handler (qt)' dropdown is set to '/select'. The 'q' field contains 'Virus'. The 'fq' field is empty. The 'sort' field is 'pageRankFile desc'. The 'start' field is '0' and the 'rows' field is '10'. The 'wt' field is 'json'. The 'indent' checkbox is checked. The 'debugQuery' checkbox is unchecked. The 'Execute Query' button is visible. The main content area displays the JSON response for the query. The response includes a 'responseHeader' with status 0, QTime 466, and params. The 'response' section shows 'numFound': 242, 'start': 0, and a list of document IDs.

Hence, both the algorithms are running as required.

Explanation :

Why do some pages have higher PageRank values than others ?

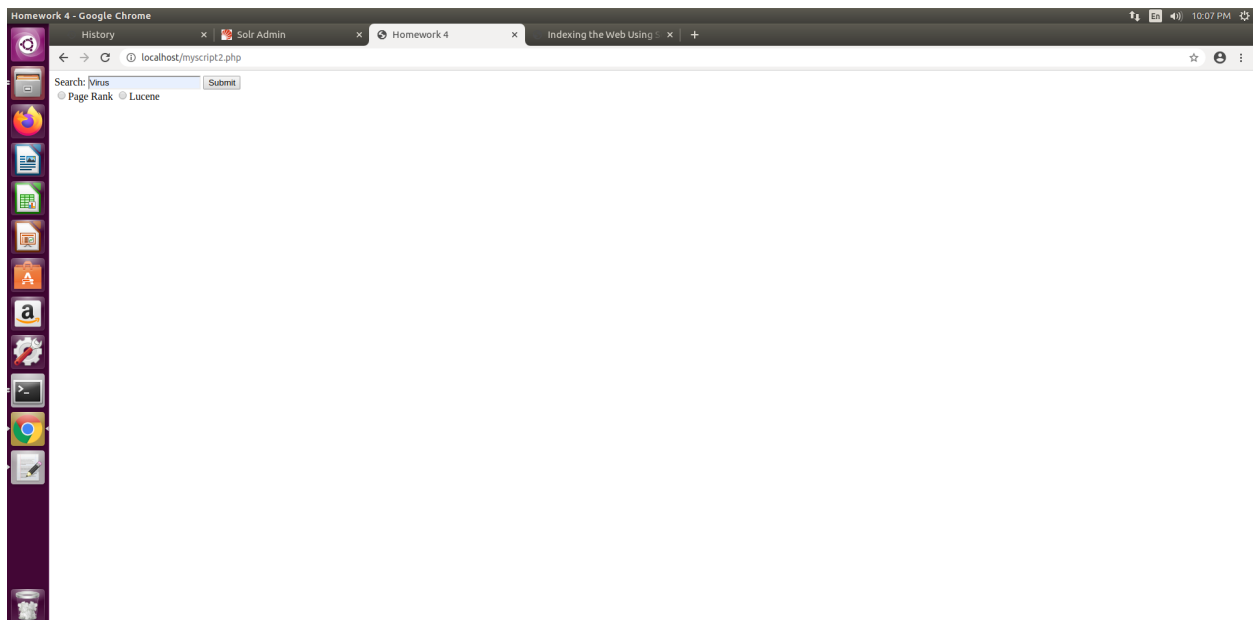
PageRank computes weight for each page based on the number of links that point to the page. These links specify how important a page is. In this assignment we created the EdgeList file and with that file a graph(that decides the list of edges pointing to the page) was created to calculate the in-degree of a link/node. If a link has a lot of links pointing towards it, the in-degree or PageRank score of that link will be high.

When the in-degree of a link is calculated then the results are displayed in a descending order i.e. the top results have the highest in-degree.

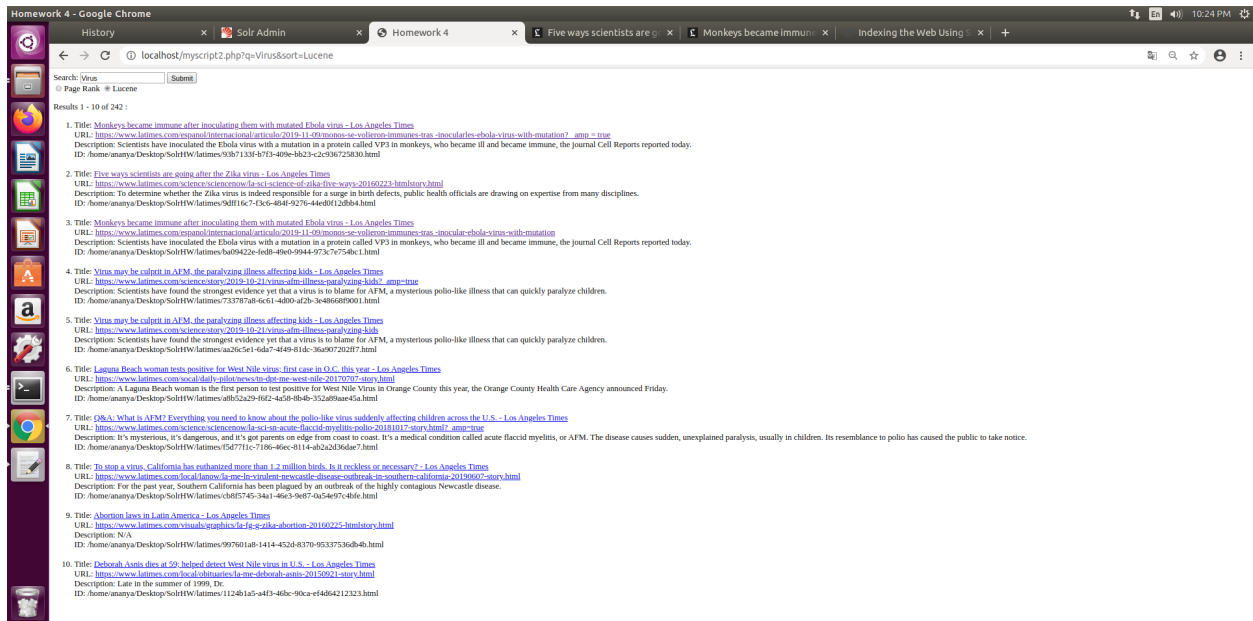
So, some pages have a higher PageRank value than others because it has more number of links that point towards it compared to other pages.

Flow of 'Virus' Query :

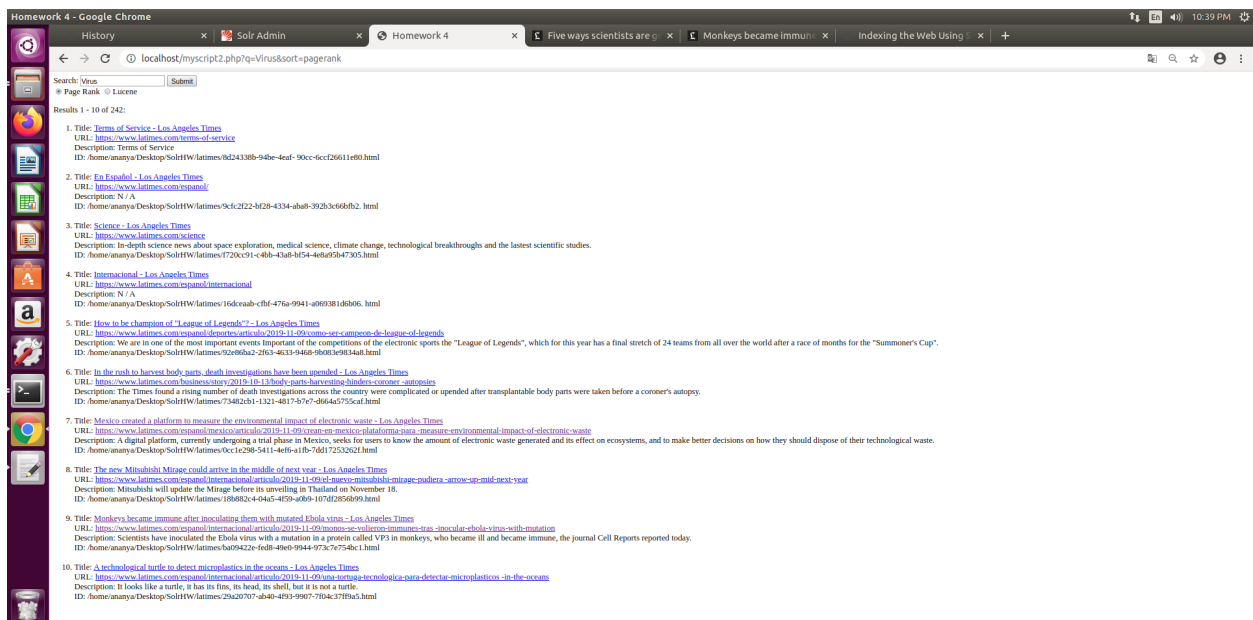
1. Using HTML in my PHP script, the GUI visible in the screenshot below is generated. It has a search bar to type the query along with two choices of the algorithm to be used - Lucene (Solr default) or PageRank. The results are then displayed on the same page. These results are clickable links that then show the webpage.



2. Entered the query 'Virus' and selected the default Lucene algorithm. The results for the same are as follows:



3. Then, selected the PageRank algorithm for the same 'Virus' query. The results are as follows :



4. The screenshot of an actual webpage that opens after clicking on one of the results link using Lucene algorithm



5. The screenshot of an actual webpage that opens after clicking on one of the results link using PageRank algorithm



	CANNES	
	Lucene(Default)	PageRank
1	https://www.latimes.com/topic/cannes-film-festival	https://www.latimes.com/sitemap
2	https://www.latimes.com/entertainment/movies/la-et-mn-cannes-wrap-critics-conversation-20190526-story.html	https://www.latimes.com/espanol/entretenimiento/articulo/2019-10-04/por-fin-llega-joker-aqui-un-resumen-de-todo-el-drama-que-ha-provocado
3	https://www.latimes.com/entertainment/movies/moviesnow/la-et-mn-cannes-2015-winners-20150524-story.html	https://www.latimes.com/entertainment-arts/movies/story/2019-11-08/documentaries-apollo-11-the-cave-sea-of-shadows-honeyland
4	https://www.latimes.com/entertainment/movies/la-et-mn-cannes-film-festival-award-winners-20190525-story.html	https://www.latimes.com/lifestyle/gallery/chloe-sevignys-five-favorite-frocks
5	https://www.latimes.com/entertainment/movies/la-et-mn-cannes-parasite-atlantics-awards-20190526-story.html	https://www.latimes.com/topic/film-festivals
6	https://www.latimes.com/entertainment/movies/la-et-mn-cannes-once-upon-a-time-in-hollywood-20190522-story.html	https://www.latimes.com/topic/cannes-film-festival
7	https://www.latimes.com/entertainment/movies/la-ca-mn-cannes-genre-parasite-wild-geese-lake-tarantino-20190522-story.html	https://www.latimes.com/people/genaro-molina
8	https://www.latimes.com/entertainment/movies/la-et-mn-cannes-mektoub-my-love-intermezzo-abdellatif-kechiche-20190523-story.html	https://www.latimes.com/entertainment-arts/music/story/2019-11-06/whitney-houston-lesbian-relationship-robyn-crawford
9	https://www.latimes.com/entertainment/movies/la-et-mn-cannes-quentin-tarantino-once-upon-a-time-in-hollywood-20190521-story.html	https://www.latimes.com/entertainment-arts/movies/story/2019-10-31/apple-disney-hbomax-streaming-movies
10	https://www.latimes.com/entertainment/movies/la-et-mn-cannes-robert-eggert-the-lighthouse-robert-pattinson-20190524-story.html	https://www.latimes.com/opinion/story/2019-09-17/patt-morrison-dana-thomas-fast-fashion-environment

CONGRESS		
	Lucene(Default)	PageRank
1	https://www.latimes.com/politics/story/2019-10-28/jerry-brown-to-testify-to-congress-rebutting-trumps-criticism-of-california?_amp=true	https://www.latimes.com/opinion
2	https://www.latimes.com/opinion/enterthefray/la-ol-new-york-rhode-island-congress-marijuana-20190116-story.html?_amp=true	https://www.latimes.com/espanol/politica
3	https://www.latimes.com/politics/la-pol-ca-richest-california-lawmakers-20180305-story.html?_amp=true	https://www.latimes.com/politics/story/2019-11-08/michael-bloomberg-files-papers-for-2020-democratic-presidential-primary
4	https://www.latimes.com/politics/story/2019-09-09/congress-gun-control-government-shutdown?_amp=true	https://www.latimes.com/opinion/story/2019-11-09/facebook-twitter-political-ads-lies
5	https://www.latimes.com/politics/la-na-pol-congress-sexual-harassment-20181212-story.html	https://www.latimes.com/politics/story/2019-11-08/elizabeth-warren-used-bare-knuckle-tactics-to-take-down-an-obama-nominee
6	https://www.latimes.com/opinion/story/2019-10-16/democratic-debate-trump-congress-executive-action?_amp=true	https://www.latimes.com/opinion/story/2019-11-09/devin-nunes-impeachment-witness-list
7	https://www.latimes.com/politics/la-na-pol-congress-bioweapons-detection-system-20190414-story.html?_amp=true	https://www.latimes.com/environment/story/2019-11-08/eastern-sierra-towns-recreation-tourism-forest-service
8	https://www.latimes.com/politics/story/2019-10-14/trump-ukraine-aid-congress-impeachment?_amp=true	https://www.latimes.com/politics/story/2019-11-08/steve-bannon-roger-stone-trump-campaign-wikileaks
9	https://www.latimes.com/politics/la-pol-ca-richest-in-congress-darrell-issa-story.html	https://www.latimes.com/opinion/story/2019-11-08/impeachment-trump-republicans-toomey
10	https://www.latimes.com/politics/la-pol-ca-richest-california-lawmakers-20180305-story.html	https://www.latimes.com/politics/story/2019-11-08/alexander-vindman-fiona-hill-impeachment-transcripts

DEMOCRATS		
	Lucene(Default)	PageRank
1	https://www.latimes.com/politics/story/2019-11-07/house-democrats-subpoena-mick-mulvaney-in-impeachment-probe?_amp=true	https://www.latimes.com/california
2	https://www.latimes.com/politics/story/2019-10-17/democrats-quick-impeachment-timing-complicated?_amp=true	https://www.latimes.com/opinion
3	https://www.latimes.com/opinion/story/2019-11-05/impeachment-donald-trump-democrats-political-cost-elections?_amp=true	https://www.latimes.com/politics
4	https://www.latimes.com/politics/story/2019-09-29/trump-allies-and-democrats-reveal-the-deep-divisions-over-impeachment-inquiry?_amp=true	https://www.latimes.com/politics/story/2019-11-08/michael-bloomberg-files-papers-for-2020-democratic-presidential-primary
5	https://www.latimes.com/politics/story/2019-09-24/democrats-and-pelosi-appear-close-to-tipping-point-on-impeachment?_amp=true	https://www.latimes.com/politics/story/2019-11-08/democratic-primary-debate-moves-from-ucla-to-loyola-marymount-university
6	https://www.latimes.com/politics/story/2019-10-08/impeachment-trump-democrats-whistleblower-identity-testimony?_amp=true	https://www.latimes.com/politics/story/2019-11-08/elizabeth-warren-used-bare-knuckle-tactics-to-take-down-an-obama-nominee
7	https://www.latimes.com/politics/story/2019-11-03/iowa-democrats-candidate-beat-trump?_amp=true	https://www.latimes.com/opinion/story/2019-11-09/elizabeth-warren-trump
8	https://www.latimes.com/nation/ct-democrats-economic-plan-20170824-story.html	https://www.latimes.com/opinion/story/2019-11-09/devin-nunes-impeachment-witness-list
9	https://www.latimes.com/politics/story/2019-11-07/democrats-to-build-abuse-of-power-case-against-trump-next-week?_amp=true	https://www.latimes.com/politics/story/2019-11-08/steve-bannon-roger-stone-trump-campaign-wikileaks
10	https://www.latimes.com/politics/story/2019-08-01/assignment-post-debate-health-care-analysis-new-story?_amp=true	https://www.latimes.com/opinion/story/2019-11-08/impeachment-trump-republicans-toomey

PATRIOT MOVEMENT		
	Lucene(Default)	PageRank
1	https://www.latimes.com/archives/la-xpm-2012-oct-23-la-me-russell-means-20121023-story.html	https://www.latimes.com/environment
2	https://www.latimes.com/entertainment-arts/books/story/2019-10-25/shadowlands-anthony-mccann-oregon-standoff?_amp=true	https://www.latimes.com/science
3	https://www.latimes.com/archives/la-xpm-2001-jun-10-mn-8792-story.html	https://www.latimes.com/california/story/2019-11-09/prop-187-anniversary-commemoration
4	https://www.latimes.com/politics/story/2019-09-20/bernie-sanders-muslim-voters-2020?_amp=true	https://www.latimes.com/entertainment-arts/story/2019-11-09/classical-music-things-to-do-in-la-this-week-nov-10-17-magic-flute-la-opera
5	https://www.latimes.com/entertainment-arts/books/story/2019-10-25/shadowlands-anthony-mccann-oregon-standoff	https://www.latimes.com/entertainment-arts/story/2019-11-09/theater-things-to-do-in-la-this-week-nov-10-17-dr-seuss-how-the-grinch-stole-christmas-old-globe-key-largo-andy-garcia-geffen-playhouse
6	https://www.latimes.com/politics/story/2019-09-20/bernie-sanders-muslim-voters-2020	https://www.latimes.com/food/story/2019-11-07/kung-pao-chicken-history-recipe-gong-bao
7	https://www.latimes.com/staff/megan-garvey	https://www.latimes.com/obituaries/story/2019-11-04/james-stern-obit-black-activist-who-led-neo-nazi-group-dies-amid-bid-to-destroy-it
8	https://www.latimes.com/projects/trump-california-tweets/	https://www.latimes.com/topic/column-one
9	https://www.latimes.com/sitemap/2005/4	https://www.latimes.com/topic/mexico-americas
10	https://www.latimes.com/sports/nba/la-sp-nba-best-game-ever-20181222-story.html	https://www.latimes.com/topic/museums

REPUBLICANS		
	Lucene(Default)	PageRank
1	https://www.latimes.com/opinion/story/2019-10-23/house-republicans-storm-hearing-impeachment?_amp=true	https://www.latimes.com/
2	https://www.latimes.com/opinion/story/2019-11-08/impeachment-trump-republicans-toomey?_amp=true	https://www.latimes.com/opinion
3	https://www.latimes.com/politics/story/2019-10-30/democrats-hoped-theyd-win-over-republicans-on-impeachment-but-its-not-looking-that-way-so-far?_amp=true	https://www.latimes.com/opinion/la-letter-to-the-editor-htmlstory.html
4	https://www.latimes.com/california/story/2019-10-16/california-republicans-democrats-wildfires-homelessness?_amp=true	https://www.latimes.com/opinion/story/2019-11-09/facebook-twitter-political-ads-lies
5	https://www.latimes.com/politics/story/2019-10-04/vulnerable-senate-republicans-impeachment?_amp=true	https://www.latimes.com/opinion/story/2019-11-08/berlin-wall-30th-anniversary-cold-war-donald-trump
6	https://www.latimes.com/politics/story/2019-10-23/impeachment-deposition-room-stormed-by-republicans?_amp=true	https://www.latimes.com/politics/story/2019-11-08/elizabeth-warren-used-bare-knuckle-tactics-to-take-down-an-obama-nominee
7	https://www.latimes.com/opinion/story/2019-09-17/california-republicans-trump-fundraising-president?_amp=true	https://www.latimes.com/opinion/story/2019-11-09/elizabeth-warren-trump
8	https://www.latimes.com/politics/story/2019-11-06/republicans-election-trump-candidate-loses-kentucky?_amp=true	https://www.latimes.com/opinion/story/2019-11-09/devin-nunes-impeachment-witness-list
9	https://www.latimes.com/politics/story/2019-10-28/katie-hill-resignation-trump-obstacle-for-republicans?_amp=true	https://www.latimes.com/opinion/story/2019-11-09/sat-uc-college-admissions
10	https://www.latimes.com/opinion/story/2019-10-09/patt-morrison-sarah-longwell-never-trump-impeachment?_amp=true	https://www.latimes.com/opinion/story/2019-11-08/impeachment-trump-republicans-toomey

SENATE		
	Lucene(Default)	PageRank
1	https://www.latimes.com/politics/story/2019-10-30/california-donors-spend-millions-on-2020-senate-races-across-the-country?_amp=true	https://www.latimes.com/
2	https://www.latimes.com/politics/story/2019-10-04/vulnerable-senate-republicans-impeachment?_amp=true	https://www.latimes.com/opinion
3	https://www.latimes.com/politics/story/2019-11-07/gop-is-already-thinking-about-how-to-turn-a-senate-impeachment-trial-to-trumps-advantage?_amp=true	https://www.latimes.com/california/story/2019-11-09/prop-187-anniversary-commemoration
4	https://www.latimes.com/politics/la-na-pol-kavanaugh-hearing-20180927-story.html	https://www.latimes.com/opinion/la-letter-to-the-editor-htmlstory.html
5	https://www.latimes.com/politics/story/2019-08-14/john-hickenlooper-quits-presidential-race-for-senate-run	https://www.latimes.com/opinion/story/2019-11-09/facebook-twitter-political-ads-lies
6	https://www.latimes.com/politics/story/2019-08-14/2020-senate-control-presidential-race	https://www.latimes.com/opinion/story/2019-11-08/berlin-wall-30th-anniversary-cold-war-donald-trump
7	https://www.latimes.com/nation/la-pol-scotus-confirmation-votes-over-the-years-20181005-htmlstory.html	https://www.latimes.com/politics/story/2019-11-08/elizabeth-warren-used-bare-knuckle-tactics-to-take-down-an-obama-nominee
8	https://www.latimes.com/politics/la-na-pol-william-barr-senate-confirm-attorney-general-20190214-story.html	https://www.latimes.com/opinion/story/2019-11-09/elizabeth-warren-trump
9	https://www.latimes.com/politics/story/2019-10-30/california-donors-spend-millions-on-2020-senate-races-across-the-country	https://www.latimes.com/opinion/story/2019-11-09/devin-nunes-impeachment-witness-list
10	https://www.latimes.com/politics/story/2019-11-07/gop-is-already-thinking-about-how-to-turn-a-senate-impeachment-trial-to-trumps-advantage	https://www.latimes.com/opinion/story/2019-11-09/sat-uc-college-admissions

OLYMPICS 2020		
	Lucene(Default)	PageRank
1	https://www.latimes.com/sports/olympics/story/2019-08-15/2020-tokyo-olympics-searching-for-answers-amid-heat-wave	https://www.latimes.com/
2	https://www.latimes.com/sports/olympics	https://www.latimes.com/sitemap
3	https://www.latimes.com/sports/olympics/story/2019-10-16/2020-tokyo-olympics-marathon-sapporo-avoid-heat	https://www.latimes.com/sports
4	https://www.latimes.com/people/david-wharton?0000016a-0e43-dffa-a76b-3f6bfa3f0001-p=3	https://www.latimes.com/opinion
5	https://www.latimes.com/sports/olympics/story/2019-07-31/deadly-heat-wave-2020-summer-olympics-tokyo	https://www.latimes.com/business
6	https://www.latimes.com/sports/olympics/story/2019-10-10/naomi-osaka-chooses-japan-over-u-s-2020-tokyo-olympics	https://www.latimes.com/entertainment-arts
7	https://www.latimes.com/people/david-wharton?0000016a-0e43-dffa-a76b-3f6bfa3f0001-p=2	https://www.latimes.com/world-nation
8	https://www.latimes.com/sports/story/2019-11-05/ioc-anti-doping-2020-tokyo-olympics?_amp=true	https://www.latimes.com/environment
9	https://www.latimes.com/sports/story/2019-07-23/tokyos-rough-road-to-2020-summer-olympics	https://www.latimes.com/newsroom-directory
10	https://www.latimes.com/sports/olympics?0000016b-7566-d6eb-adeb-77f790400002-p=2	https://www.latimes.com/politics

STOCK		
	Lucene(Default)	PageRank
1	https://www.latimes.com/business/story/2019-11-06/uber-lock-up-period-ends-with-falling-stock-protests?_amp=true	https://www.latimes.com/
2	https://www.latimes.com/business/la-fi-lyft-stock-20190401-story.html	https://www.latimes.com/business
3	https://www.latimes.com/business/la-fi-hy-tesla-stock-20160518-snap-story.html	https://www.latimes.com/business/real-estate
4	https://www.latimes.com/business/story/2019-11-09/stock-managers-who-played-defense-in-2019-are-left-scrambling-to-make-up-ground?_amp=true	https://www.latimes.com/business/real-estate/story/2019-11-09/hulu-looking-for-alaska-landry-bender
5	https://www.latimes.com/business/story/2019-11-06/uber-lock-up-period-ends-with-falling-stock-protests	https://www.latimes.com/business/story/2019-11-08/trump-china-tariffs
6	https://www.latimes.com/business/la-fi-uber-ipo-stock-trading-price-20190510-story.html	https://www.latimes.com/business/real-estate/story/2019-11-09/hot-property-very-brady-sale-malibu
7	https://www.latimes.com/business/story/2019-09-09/at-t-stock-surges-elliott-reveals-3-2-billion-stake	https://www.latimes.com/politics/story/2019-11-08/elizabeth-warren-used-bare-knuckle-tactics-to-take-down-an-obama-nominee
8	https://www.latimes.com/business/story/2019-11-09/stock-managers-who-played-defense-in-2019-are-left-scrambling-to-make-up-ground	https://www.latimes.com/business/real-estate/story/2019-11-09/hot-property-newsletter-rifleman-leads-the-posse-on-a-little-mosey-down-memory-lane
9	https://www.latimes.com/business/la-fi-stock-market-status-update-20180209-story.html	https://www.latimes.com/business/story/2019-11-09/stock-managers-who-played-defense-in-2019-are-left-scrambling-to-make-up-ground
10	https://www.latimes.com/business/la-fi-stock-market-correction-20180212-story.html	https://www.latimes.com/business/story/2019-11-08/gap-ceo-was-done-in-by-fashion-missteps-and-fading-brands

VIRUS		
	Lucene(Default)	PageRank
1	https://www.latimes.com/espanol/internacional/articulo/2019-11-09/monos-se-volvieron-inmunes-tras-inocularles-virus-del-ebola-con-mutacion?_amp=true	https://www.latimes.com/terms-of-service
2	https://www.latimes.com/science/sciencenow/la-sci-science-of-zika-five-ways-20160223-htmllstory.html	https://www.latimes.com/espanol/
3	https://www.latimes.com/espanol/internacional/articulo/2019-11-09/monos-se-volvieron-inmunes-tras-inocularles-virus-del-ebola-con-mutacion	https://www.latimes.com/science
4	https://www.latimes.com/science/story/2019-10-21/virus-afm-illness-paralyzing-kids?_amp=true	https://www.latimes.com/espanol/international
5	https://www.latimes.com/science/story/2019-10-21/virus-afm-illness-paralyzing-kids	https://www.latimes.com/espanol/deportes/articulo/2019-11-09/como-ser-campeon-de-league-of-legends
6	https://www.latimes.com/socal/daily-pilot/news/tn-dpt-me-west-nile-20170707-story.html	https://www.latimes.com/business/story/2019-10-13/body-parts-harvesting-hinders-coroner-autopsies
7	https://www.latimes.com/science/sciencenow/la-sci-sn-acute-flaccid-myelitis-polio-20181017-story.html?_amp=true	https://www.latimes.com/espanol/mexico/articulo/2019-11-09/crean-en-mexico-plataforma-para-medir-el-impacto-del-ambiente-en-el-ambiente
8	https://www.latimes.com/local/lanow/la-me-ln-virulent-newcastle-disease-outbreak-in-southern-california-20190607-story.html	https://www.latimes.com/espanol/internacional/articulo/2019-11-09/el-nuevo-mitsubishi-mirage-pudiera-arribar-a-mediados-del-next-year
9	https://www.latimes.com/visuals/graphics/la-fg-g-zika-abortion-20160225-htmllstory.html	https://www.latimes.com/espanol/internacional/articulo/2019-11-09/monos-se-volvieron-inmunes-tras-inocularles-virus-del-ebola-con-mutacion

10	https://www.latimes.com/local/obituaries/la-me-deborah-asnis-20150921-story.html	https://www.latimes.com/english/international/article/2019-11-09/a-technological-turtle-to-detect-microplastics-in-the-oceans
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OVERLAP TABLE :

QUERY NAME	NUMBER OF OVERLAPS
Cannes	1
Congress	0
Democrats	0
Patriot Movement	0
Replublicans	0
Senate	0
Olympics 2020	0
Stock	1
Virus	0

Overlap graph showing the number of overlaps between the two algorithms for all queries.

