

1. Steps to complete the assignment:

- 1) First, I downloaded and installed solr-7.7.0 on my computer. Then I created a core file in the file solr-7.7.0/server/solr called **myexample** by running **bin/solr start** and **bin/solr -c create myexample**. Then I edited the managed-schema and the solrconfig.xml in the conf/lang file so that all the text content can be mapped properly. Then I used the **bin/post -c myexample -filetypes html** **<path_to_crawl_data_folder>** to connect my reuters html pages to solr. After this step, I refresh the Solr webpage and the UI shows that the files have been indexed.
- 2) After getting my reuters webpages indexed. I set up my Apache server using MAMP and create a web browser (index.php) and put it in the htdocs of MAMP to display it. Both my front end and back end codes are within this index.php file. First, I copied the example code given in the assignment to my index.php as my base code. Then I added the additional parameter code part too. I then tested out the connection of my php and solr to see if it can return any results. After I made sure my php is successfully connected to solr and the indexed websites, I added the radio buttons for Lucene and Page Rank and I modified the code of displaying to just display the title, ID, url, and description using a table format in bootstrap. Then I added the part of the code that I have to read the URLtoHTML_reuters_news.csv in base on their ID so that I can assign links to results's title and og_url even tho they are not showing. After making sure the default version of Lucene works properly. I added the **\$sort = isset(\$_REQUEST['rank']) && \$_REQUEST['rank'] == 'pagerank' ? array('sort' => 'pageRankFile desc') : false;** so that I can switch between Lucene and Page Rank.
- 3) In order to create have page rank results in solr, I first generated the edge list by writing a JAVA program using JSOUP API. Using the file URLtoHTML_reuters_news.csv, I checked which links IDs are going in and which and which links are going out which with the JSOUP API **abs:href** and generated the edgeList.txt file.
- 4) After generating the edgeList.txt, I wrote the Python code using NetworkX library to compute page rank and create a web graph out of the edgeList.txt. the web graph is create by calling **read_edgelist()**. Then I used the **pagerank()** to calculate the page rank and compare it to the configuration **alpha=0.85, personalization=None, max_iter=30, tol=1e-06, nstart=None, weight='weight', dangling=None**. Then created the external_pageRankFile.txt file with the format of **<doc ID> = <page rank score>**. Lastly, I updated the managed-schema and solrconfig.xml according to the instruction on the assignment so that the external_pageRankFile.txt can be used.

2. Explanation regarding why some pages have higher PageRank values than others:

Some pages will have higher page rank values than others because those pages with higher page rank values have more pages pointing into it compare to the links going out of that page. The page rank of a website is also determined by how high is the page rank of it's incoming links. For instance, if a few websites with extremely high page rank

value points to a website with low outgoing link that website will have a high page rank too.

3. Document Flow for the query “Wall”:

✓ Screenshot of initial page where you enter the query in input box:

Search:

Wall

☒ Lucene ☐ Page Rank

Submit

✓ Screenshot of page which shows the results for Lucene(Default):

Search:

Wall

☒ Lucene ☐ Page Rank

Submit

Results 1 - 10 of 594:

1.	Title	Wall Street's Way: The financial industry's effort to undo reform
	URL	http://www.reuters.com/investigates/section/wall-streets-way/
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/4e005372-5621-41f5-ba45-a21874f61bea.html
	Description	The U.S. made major regulatory changes after last decade's crises and scandals. Reuters documents how Wall Street is dodging and undermining the new rules.
2.	Title	Exclusive: In budget, Trump to ask Congress for \$8.6 billion for border wall Reuters
	URL	https://www.reuters.com/article/us-usa-trump-budget-wall-exclusive-idUSKBN1QR0CW
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/cd33be3a-42b2-4a29-a20a-62d69840815b.html
	Description	President Donald Trump on Monday will ask the U.S. Congress for an additional \$8...
3.	Title	Trump 'wall' in desolate stretch of New Mexico has some asking: Why here? Reuters
	URL	https://www.reuters.com/article/us-usa-immigration-wall-insight-idUSKCN1QW1GR
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/5426d87e-be05-4809-86df-72be4fad8e15.html
	Description	The 18-foot-tall steel slats extend 20 miles across the rugged Chihuahuan desert...
4.	Title	Politics & Political News Reuters
	URL	https://www.reuters.com/politics
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/b3557cce-8ba0-43d4-a477-8334f685745a.html
	Description	Reuters.com is your politics news source for up to the minute, impartial political news coverage on the leaders, policies and agendas that shape our world.
5.	Title	Trump vetoes measure to end his emergency declaration on border wall Reuters
	URL	https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/08b2ba13-dc13-4a55-a4f6-f86004516044.html
	Description	President Donald Trump issued the first veto of his presidency on Friday to bloc...

6.	Title	Trump vetoes measure to end his emergency declaration on border wall Reuters
	URL	https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/a8b1d888-645a-4a0f-b46e-aabe7712cb46.html
	Description	President Donald Trump issued the first veto of his presidency on Friday to bloc...
7.	Title	Trump vetoes measure to end his emergency declaration on border wall Reuters
	URL	https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/e19865a8-bade-4a5a-abf7-e77328bb383b.html
	Description	President Donald Trump issued the first veto of his presidency on Friday to bloc...
8.	Title	Trump vetoes measure to end his emergency declaration on border wall Reuters
	URL	https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/e21e82d8-abeb-4d71-a255-fb2fc9434000.html
	Description	President Donald Trump issued the first veto of his presidency on Friday to bloc...
9.	Title	Trump vows 'VETO!' after bipartisan Senate rebuke on wall Reuters
	URL	https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QV1A8
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/7f348ae0-683a-464e-b13e-848fba059cb5.html
	Description	The U.S. Senate on Thursday rebuked President Donald Trump by voting to end his ...
10.	Title	Columns Reuters.com
	URL	https://www.reuters.com/journalists/noel-randewich
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/a913771e-d69e-4eb7-8a9b-1311f465b117.html
	Description	Reuters.com brings you the latest news from around the world, covering breaking news in markets, business, politics, entertainment, technology, video and pictures.

✓ Screenshot of page which shows the results for PageRank:

Search:

Wall

Lucene Page Rank

Submit

Results 1 - 10 of 594:

1.	Title	Europe Stocks News Headlines Reuters
	URL	https://www.reuters.com/news/archive/europe-stocks
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/00a46bce-55e3-446b-91a3-4fc5e69b8d14.html
	Description	Get the latest breaking news and top news headlines at Reuters.com
2.	Title	Guardiola's City demolish Schalke to cruise into Champions League quarter finals Reuters.com
	URL	https://www.reuters.com/video/2019/03/13/guardiolas-city-demolish-schalke-to-cruise?videoId=525247223&videoChannel=79
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/019326dd-b7d5-495b-8a1b-aeeb5def39c8.html
	Description	Pep Guardiola praises Leroy Sane's performance in a 7-0 thrashing of Schalke which puts Man City into the Champions League quarter finals
3.	Title	Myanmar News Headlines Reuters
	URL	https://www.reuters.com/news/archive/myanmar
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/01a0a022-397f-46a4-be7d-38840de28b71.html
	Description	Get the latest breaking news and top news headlines at Reuters.com
4.	Title	Time to buy Boeing, Goldman, Children's Place, says Hilary Kramer Reuters.com
	URL	https://www.reuters.com/video/2019/03/14/time-to-buy-boeing-goldman-childrens-place?videoId=525990041&videoChannel=303
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/0233ac59-a462-4e59-a1b7-5011e4c44683.html
	Description	A&G Capital's chief investment officer tells Reuters' Fred Katayama why she likes financial and retail stocks. She sees the S&P 500 breaking out, supported by continued oil rates.
5.	Title	How to finish Jack Bogle's revolution in saving for retirement Reuters
	URL	https://www.reuters.com/article/us-column-miller-bogle-idUSKCN1P11CW
	ID	/Users/jessiekuo/Desktop/CSCI572_HW4/reutersnews/028bdf04-1bda-4e83-9b59-82eb2194f465.html
	Description	Jack Bogle did more to help the average American working household save for retirement...

6.	Title	Beto O'Rourke leaps into White House race Reuters.com
	URL	https://www.reuters.com/video/2019/03/14/beto-orourke-leaps-into-white-house-race?videoId=525825048&videoChannel=1
	ID	/Users/jessiekua/Desktop/CSCI572_HW4/reutersnews/03acc0bc-9192-4762-8784-4e5c9cf37d57.html
	Description	Former Texas Representative Beto O'Rourke will seek the Democratic Party presidential nomination to defeat Republican President Donald Trump in 2020.
7.	Title	NBA Basketball News Headlines Reuters
	URL	https://www.reuters.com/news/archive/basketball-nba
	ID	/Users/jessiekua/Desktop/CSCI572_HW4/reutersnews/047b89db-d8ec-4dd8-ac59-2c1d9af54636.html
	Description	Get the latest breaking news and top news headlines at Reuters.com
8.	Title	Haute-couture designer Karl Lagerfeld dies aged 85 Reuters.com
	URL	https://www.reuters.com/video/2019/02/19/haute-couture-designer-karl-lagerfeld-dl?videoId=516863369&videoChannel=3
	ID	/Users/jessiekua/Desktop/CSCI572_HW4/reutersnews/05360b07-9a11-400c-a8c6-be648de29ac0.html
	Description	German haute-couture designer Karl Lagerfeld, artistic director at Chanel and an icon of the global fashion industry for over half a century, has died, a source at the French fashion house said on Tuesday. He was 85.
9.	Title	Pivotal New Hampshire primary may come down to Sanders versus Warren Reuters
	URL	https://www.reuters.com/article/us-usa-election-new-hampshire-idUSKCN1QE2CR
	ID	/Users/jessiekua/Desktop/CSCI572_HW4/reutersnews/0797233c-1d9c-4262-9a97-c808f7746fce.html
	Description	Bernie Sanders' entry into the 2020 presidential race has complicated fello...
10.	Title	Sweden's emissions-free ferries lead the charge Reuters.com
	URL	https://www.reuters.com/video/2019/03/14/swedens-emissions-free-ferries-lead-the?videoId=525900564&videoChannel=6
	ID	/Users/jessiekua/Desktop/CSCI572_HW4/reutersnews/07e3cef2-819a-4024-a29a-d20a29975532.html
	Description	A quiet revolution has taken place in the Oresund Strait between Sweden and Denmark where two of the world's largest battery-powered ferries ply the waters after being converted from polluting diesel power. Stuart McDill reports.

✓ Screenshot of the actual webpage that opens when clicking on “[Wall Street’s Way: The financial industry’s effort to undo reform](#)” of the result’s link:



4. A table containing list of URLs of the top ten results produced by both ranking methods for each query:

Venezuela

Lucene	Page Rank
https://www.reuters.com/investigates/special-report/venezuela-russia-rosneft/	https://www.reuters.com/article/us-usa-trump-coal-idUSKCN1P80BY
https://www.reuters.com/article/us-venezuela-russia-rosneft-special-repo-idUSKCN1QV1HN	https://www.reuters.com/article/us-aviancaholdings-fleet-idUSKCN1QW2XT
https://www.reuters.com/article/us-usa-venezuela-sanctions-idUSKCN1QV2VS	https://www.reuters.com/article/us-soccer-europa-final-preview-idUSKBN18I1E9
https://www.reuters.com/article/us-venezuela-politics-usa-abrams-idUSKCN1QW2HM	https://www.reuters.com/article/us-britain-crufts-idUSKCN1QO1LA
https://www.reuters.com/article/us-venezuela-politics-tankers-idUSKCN1QW2L6	https://www.reuters.com/article/uk-britain-eu-sterling-idUSKCN1QV0YC
https://www.reuters.com/article/us-venezuela-russia-rosneft-money-idUSKCN1QV1HS	https://www.reuters.com/video/2019/03/13/guardiolas-city-demolish-schalke-to-crui?videoId=525247223&videoChannel=79
https://www.reuters.com/journalists/nelson-bocanegra	https://www.reuters.com/article/us-usa-drilling-sale-idUSKCN1QL21J
https://www.reuters.com/journalists/lesley-wroughton	https://www.reuters.com/markets/bonds
https://www.reuters.com/journalists/roberta-rampton	https://www.reuters.com/article/aviva-ceo-idUSFWN20Q09G
https://www.reuters.com/article/us-venezuela-politics-usa-banks-idUSKCN1QN2QE	https://www.reuters.com/video/2019/03/14/time-to-buy-boeing-goldman-childrens-pla?videoId=525990041&videoChannel=303

Senate

Lucene	Page Rank
https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QV1A8	https://www.reuters.com/news/archive/europe-stocks
https://www.reuters.com/video/2019/03/04/senate-has-votes-to-block-border-emergen?videoId=521958334&videoChannel=-10465	https://www.reuters.com/video/2019/03/13/guardiolas-city-demolish-schalke-to-crui?videoId=525247223&videoChannel=79
https://www.reuters.com/video/2019/03/05/mcconnell-senate-has-votes-to-block-bord?videoId=521939215&videoChannel=-10465	https://www.reuters.com/video/2019/03/14/time-to-buy-boeing-goldman-childrens-pla?videoId=525990041&videoChannel=303
https://www.reuters.com/article/us-usa-politics-beto-orourke-special-rep-idUSKCN1QW26N	https://www.reuters.com/video/2019/03/14/beto-orourke-leaps-into-white-house-race?videoId=525825048&videoChannel=1
https://www.reuters.com/article/us-usa-politics-beto-orourke-special-rep-idUSKCN1QW26N	https://www.reuters.com/video/2019/02/19/haute-couture-designer-karl-lagerfeld-di?videoId=516863369&videoChannel=3
https://www.reuters.com/article/us-usa-politics-beto-short-exclusive-idUSKCN1QW28H	https://www.reuters.com/news/picture/celebrity-mugshots-idUSRTS2907C
https://www.reuters.com/article/us-usa-politics-beto-short-exclusive-idUSKCN1QW28H	https://www.reuters.com/video/2019/03/14/swedens-emissions-free-ferries-lead-the?videoId=525900564&videoChannel=6
https://www.reuters.com/politics	https://www.reuters.com/video/2019/03/04/breakingviews-tv-lyft-the-veil?videoId=521916948&videoChannel=117766
https://www.reuters.com/article/us-congo-politics-idUSKCN1QW28R	https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK

https://www.reuters.com/article/us-usa-election-orourke-idUSKCN1QV00E	https://www.reuters.com/video/2019/03/05/breakingviews-tv-ipo-glut?videoId=522262347&videoChannel=117766
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Democrats

Lucene	Page Rank
https://www.reuters.com/article/us-usa-election-medicare-idUSKBN1QU189	https://www.reuters.com/journalists/brendan-obrien
https://www.reuters.com/article/us-usa-election-medicare-idUSKBN1QU189	https://www.reuters.com/article/us-usa-election-new-hampshire-idUSKCN1QE2CR
https://www.reuters.com/article/us-usa-congress-whitaker-idUSKCN1PX1LD	https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK
https://www.reuters.com/video/2019/02/28/republicans-bash-cohen-democrats-at-cpac?videoId=520293110&videoChannel=13976	https://www.reuters.com/article/us-usa-election-sanders-idUSKCN1QW2ZJ
https://www.reuters.com/article/us-usa-election-biden-idUSKCN1QH1EX	https://www.reuters.com/journalists/nathan-layne
https://www.reuters.com/article/us-usa-trump-budget-idUSKBN1QS12D	https://www.reuters.com/article/us-usa-election-medicare-idUSKBN1QU189
https://www.reuters.com/video/2019/03/05/the-witch-hunt-continues-trump-on-democr?videoId=522293719&videoChannel=13976	https://www.reuters.com/news/archive/RCOMUS_Brexit
https://www.reuters.com/article/us-usa-trump-russia-congress-idUSKCN1QV23E	https://www.reuters.com/journalists/tom-sims
https://www.reuters.com/politics	https://www.reuters.com/article/us-usa-election-biden-idUSKBN1QT20L
https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK	https://www.reuters.com/video/2019/03/07/traffickers-farmed-russias-world-cup-for?videoId=522676640&videoChannel=-10167

Republicans

Lucene	Page Rank
https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QV1A8	https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK
https://www.reuters.com/video/2019/02/28/republicans-bash-cohen-democrats-at-cpac?videoId=520293110&videoChannel=13976	https://www.reuters.com/article/us-usa-election-medicare-idUSKBN1QU189
https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK	https://www.reuters.com/journalists/amy-tennery
https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK	https://www.reuters.com/investigates/special-report/usa-beryllium-rule/
https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK	https://www.reuters.com/journalists/maria-caspani
https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK	https://www.reuters.com/article/us-usa-trump-budget-idUSKBN1QS02D
https://www.reuters.com/article/us-usa-tax-survey-idUSKCN1QW1BY	https://www.reuters.com/article/us-usa-trump-budget-idUSKBN1QS12D
https://www.reuters.com/article/us-california-fires-trump-idUSKCN1P31ND	https://www.reuters.com/article/us-usa-trump-transgender-idUSKCN1QG185
https://www.reuters.com/article/us-usa-tax-survey-idUSKCN1QW1BY	https://www.reuters.com/article/wells-fargo-congress-idUSKBN1QT2B5
https://www.reuters.com/article/us-usa-politics-trump-idUSKCN1QH29L	https://www.reuters.com/article/us-column-miller-socialsecurity-idUSKCN1PP1AN

Patriot Movement

Lucene	Page Rank
https://www.reuters.com/article/us-usa-trump-turkey-idUSKCN1QV328	https://www.reuters.com/markets/bonds

https://www.reuters.com/article/us-france-protests-idUSKCN1Q325A	https://www.reuters.com/article/us-britain-lgbt-rights-idUSKCN1QW2QI
https://www.reuters.com/article/uk-people-rkelly-metoo-idUKKCN1QC0V7	https://www.reuters.com/article/us-climate-change-youth-idUSKCN1QW01S
https://www.reuters.com/article/us-britain-climatechange-education-idUSKCN1QW2QU	https://www.reuters.com/article/us-slovakia-election-president-idUSKCN1QW2Z3
https://www.reuters.com/article/us-climate-change-youth-idUSKCN1QW01S	https://www.reuters.com/article/uk-global-forex-idUSKBN1QU03P
https://www.reuters.com/article/us-climate-change-youth-idUSKCN1QW01S	https://www.reuters.com/article/us-hugo-boss-results-idUSKCN1Q00NZ
https://www.reuters.com/article/us-climate-change-youth-idUSKCN1QW01S	https://www.reuters.com/journalists/karl-plume
https://www.reuters.com/article/us-usa-election-orourke-idUSKCN1QV13C	https://www.reuters.com/investigates/special-report/myanmar-reporters-democracy/
https://www.reuters.com/article/us-italy-china-analysis-idUSKCN1QW1E2	https://www.reuters.com/news/archive/mc-breakingviews
https://www.reuters.com/article/us-usa-election-orourke-idUSKCN1QV13C	https://www.reuters.com/article/us-france-harassment-idUSKCN1Q11L1

Oscar 2019

Lucene	Page Rank
https://www.reuters.com/article/us-awards-oscars-women-idUSKCN1Q7130	https://www.reuters.com/article/us-usa-trump-coal-idUSKCN1P80BY
https://www.reuters.com/article/us-awards-oscars-diversity-idUSKCN1QE0N4	https://www.reuters.com/article/us-aviancaholdings-fleet-idUSKCN1QW2XT
https://www.reuters.com/article/us-aviancaholdings-fleet-idUSKCN1QW2XT	https://www.reuters.com/sectors/industries/overview
https://www.reuters.com/article/us-aviancaholdings-fleet-idUSKCN1QW2XT	https://www.reuters.com/news/archive/europe-stocks
https://www.reuters.com/article/us-aviancaholdings-fleet-idUSKCN1QW2XT	https://www.reuters.com/article/us-soccer-europa-final-preview-idUSKBN18I1E9
https://www.reuters.com/journalists/pei-li	https://www.reuters.com/article/us-britain-crufts-idUSKCN1Q01LA
https://www.reuters.com/article/us-britain-lgbt-celebrities-idUSKCN1QW2KY	https://www.reuters.com/article/uk-britain-eu-sterling-idUSKCN1QV0YC
https://www.reuters.com/theWire	https://www.reuters.com/sectors/industries/overview
https://www.reuters.com/article/us-britain-lgbt-rights-idUSKCN1QW2QI	https://www.reuters.com/video/2019/03/13/guardiolas-city-demolish-schalke-to-crui?videoId=525247223&videoChannel=79
https://www.reuters.com/article/us-britain-lgbt-rights-idUSKCN1QW2QI	https://www.reuters.com/news/archive/myanmar

Channel

Lucene	Page Rank
https://www.reuters.com/video/2019/03/13/guardiolas-city-demolish-schalke-to-crui?videoId=525247223&videoChannel=79	https://www.reuters.com/article/us-usa-trump-coal-idUSKCN1P80BY
https://www.reuters.com/video/2019/03/14/time-to-buy-boeing-goldman-childrens-pla?videoId=525990041&videoChannel=303	https://www.reuters.com/article/us-aviancaholdings-fleet-idUSKCN1QW2XT
https://www.reuters.com/video/2019/03/14/swedens-emissions-free-ferries-lead-the?videoId=5259900564&videoChannel=6	https://www.reuters.com/article/us-soccer-europa-final-preview-idUSKBN18I1E9
https://www.reuters.com/video/2019/03/04/breakingviews-tv-lyft-the-	https://www.reuters.com/article/us-britain-crufts-idUSKCN1Q01LA

https://www.reuters.com/video/2019/03/05/breakingviews-tv-ipo-glut?videoId=522262347&videoChannel=117766	https://www.reuters.com/article/uk-britain-eu-sterling-idUSKCN1QV0YC
https://www.reuters.com/video/2019/03/12/nissan-renault-promise-equal-footing-aft?videoId=525078643&videoChannel=5	https://www.reuters.com/video/2019/03/13/guardiolas-city-demolish-schalke-to-crui?videoId=525247223&videoChannel=79
https://www.reuters.com/video/2019/03/06/breakingviews-tv-carry-trades?videoId=522657667&videoChannel=117766	https://www.reuters.com/article/us-usa-drilling-sale-idUSKCN1QL21J
https://www.reuters.com/video/2019/03/06/bloomberg-to-forgo-2020-white-house-bid?videoId=522337561&videoChannel=13978	https://www.reuters.com/markets/bonds
https://www.reuters.com/video/2019/03/15/tesla-launches-the-model-y-electric-cros?videoId=526236973&videoChannel=5	https://www.reuters.com/article/aviva-ceo-idUSFWN20Q09G
https://www.reuters.com/video/2019/03/05/mcconnell-senate-has-votes-to-block-bord?videoId=521939215&videoChannel=-10465	https://www.reuters.com/video/2019/03/14/time-to-buy-boeing-goldman-childrens-pla?videoId=525990041&videoChannel=303

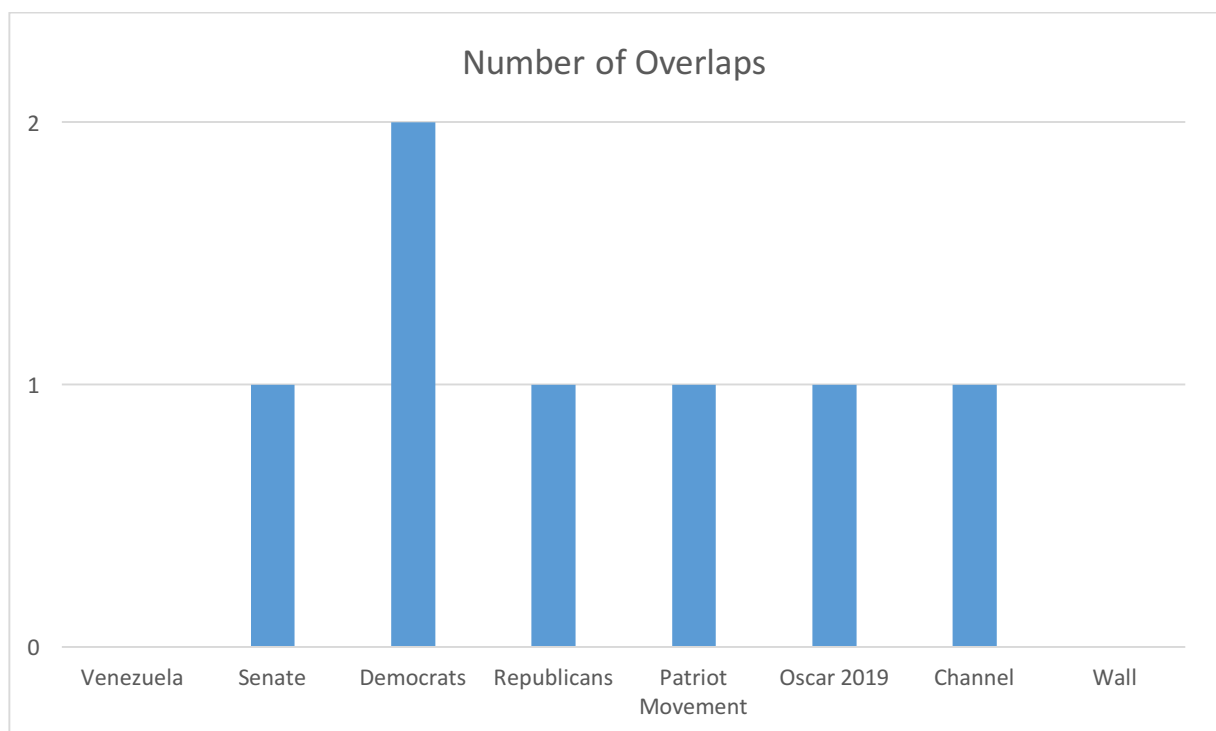
Wall

Lucene	Page Rank
http://www.reuters.com/investigates/section/wall-streets-way/	https://www.reuters.com/news/archive/europe-stocks
https://www.reuters.com/article/us-usa-trump-budget-wall-exclusive-idUSKBN1QR0CW	https://www.reuters.com/video/2019/03/13/guardiolas-city-demolish-schalke-to-crui?videoId=525247223&videoChannel=79
https://www.reuters.com/article/us-usa-immigration-wall-insight-idUSKCN1QW1GR	https://www.reuters.com/news/archive/myanmar
https://www.reuters.com/politics	https://www.reuters.com/video/2019/03/14/time-to-buy-boeing-goldman-childrens-pla?videoId=525990041&videoChannel=303
https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK	https://www.reuters.com/article/us-column-miller-bogle-idUSKCN1PI1CW
https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK	https://www.reuters.com/video/2019/03/14/be-to-orourke-leaps-into-white-house-race?videoId=525825048&videoChannel=1
https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK	https://www.reuters.com/news/archive/basketball-nba
https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QW2AK	https://www.reuters.com/video/2019/02/19/haute-couture-designer-karl-lagerfeld-di?videoId=516863369&videoChannel=3
https://www.reuters.com/article/us-usa-trump-congress-emergency-idUSKCN1QV1A8	https://www.reuters.com/article/us-usa-election-new-hampshire-idUSKCN1QE2CR
https://www.reuters.com/journalists/noel-randewich	https://www.reuters.com/video/2019/03/14/swedens-emissions-free-ferries-lead-the?videoId=525900564&videoChannel=6

5. Overlaps between Lucene and PageRank Query Responses:

****Overlaps are counted if the two links leads to the same page result.**

Query	Number of Overlaps
Venezuela	0
Senate	1
Democrats	2
Republicans	1
Patriot Movement	1
Oscar 2019	1
Channel	1
Wall	0



README instructions:

- Please place the **index.php** file in the same place with the **URLtoHTML_reuters_news.csv** in order for index.php to find the file.
- Place the **solr-php-client-master** file in the same place as the **index.php**.