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News Sites to Index: Newsday

STEPS FOLLOWED:

1. Installed Oracle VM VirtualBox as I am using Windows. Installed Java and Apache Solr. I downloaded the Newsday webpages provided from Google drive.

2. Start the Solr server using the command **bin/solr start** and Create the core "myexample" using command **bin/solr create -c myexample**. Checked whether solr is started and core has been created properly. Edited the managed-schema file by adding the following

```
<fieldType name="external" keyfield="id" defVal="0" class="solr.ExternalField"/>
```

```
<field name="pageRankfile" type="external" stored="false" indexed="false"/>
```

Edited the solrconfig.xml file by adding the following listeners within the <query> element

```
<listener event="newSearcher" class="org.apache.solr.schema.ExternalFileFieldReloader"/>
```

```
<listener event="firstSearcher" class="org.apache.solr.schema.ExternalFileFieldReloader"/>
```

 for myexample core. Reloaded the core from core admin UI in solr Dashboard.

3. Indexed the downloaded Newsday webpages to solr using the command **bin/post -c myexample -filetypes home/Radhika/Desktop/crawl_data/data** to the core myexample. And checked in the solr Admin UI page whether all the files were indexed properly or not.

4. Installed apache using command **sudo apt-get install apache2**. Installed PHP using command

sudo apt-get install libapache2-mod-php. Cloned the directory solr-php-client in var/www/html folder.

5. Imported the jsoup library and implemented a java program which takes as input Newsday html pages and NewdayURLMapping csv files to generate edgeList.txt file which contains the outgoing links of Newsday webpages.

6. Using the NetworkX library executed a Python script to determine the pageRank values for the html pages. edgeList.txt file was given as input. The format used was <document_id>=<page_rank_score>. The following parameters were added in the python program

alpha=0.85 personalization=None,max-iter=30,tol=1e-06,nstart=None,weight='weight',dabgling=None

The file external_pageRankFile.txt which was generated was placed in the path of myexample core i.e.

/home/Radhika/Desktop/server/solr/myexample/data

7. Modified the provided PHP file by adding radio buttons so that the results for default Lucene and PageRank methods can be viewed. \$limit variable was set to 10 so that top 10 results for the query entered are displayed based on the method selected. Title, URL(og_url), id and description(og_desc) for

each of the results needs to be displayed accordingly the code was modified. And the links were made clickable. Placed the php file in path var/www/html. And gave the 8 given queries as input in the browser by running the php file using URL localhost/IRHW4.php.

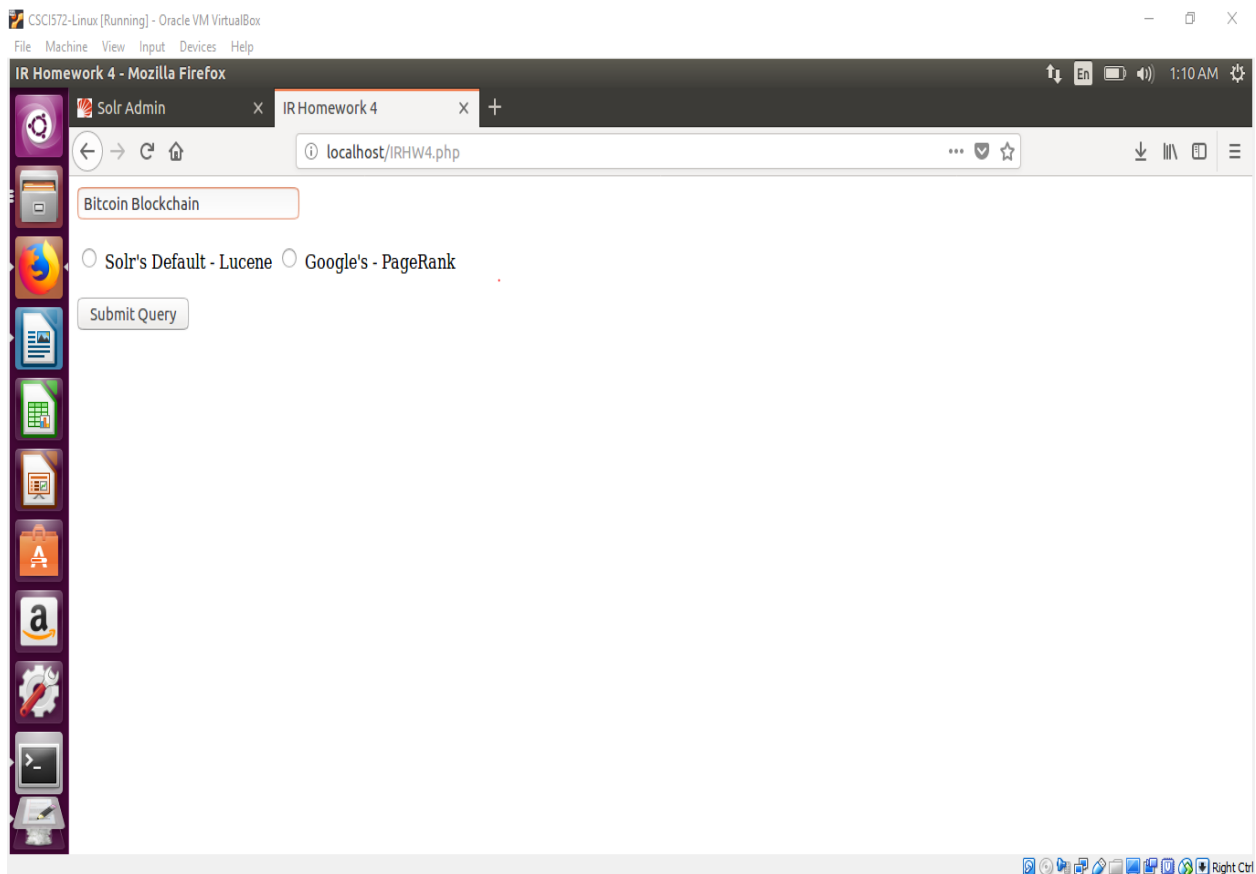
For each query top 10 results were displayed using the Lucene and PageRank algorithms by selecting the corresponding radio button.

Why some pages have higher PageRank values than others?

PageRank provides a means to determine the value of a website for any given query or search term. This value is determined by how websites are linked together and the linked websites must be popular so that they have more incoming links. These incoming links help in determining the PageRank value for a site. The sites which have more number of incoming links will have a higher PageRank value and thus will be displayed higher up in search results.

SCREENSHOTS

Initial Page with search query



Results for Lucene

CS1572-Linux [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

IR Homework 4 - Mozilla Firefox

Solr Admin x IR Homework 4 x +

localhost/IRHW4.php?q=Bitcoin+Blockchain&algorithm=lucene 67%

Bitcoin Blockchain

Solr's Default - Lucene Google's - PageRank

Submit Query

Results 1 - <10 of 119:

id	/home/radhika/Desktop/crawl_data/data/4473d817c996a7227e874656733eea8.html
description	The Farmingdale firm, formerly Long Island Iced Tea Corp., tried "to take advantage of general investor interest in bitcoin and blockchain technology," the market says.
title	Long Blockchain tried to "mislead investors," Nasdaq says Newsday
og_url	https://www.newsday.com/business/long-blockchain-bitcoin-nasdaq-1.16911163
id	/home/radhika/Desktop/crawl_data/data/ec5364c46063933b0f099534a470ad3.html
description	In satire about companies adding "blockchain" to their names to jump on the bitcoin bandwagon, the late-night host on Sunday night singled out the Farmingdale company.
title	HBO's John Oliver calls Long Blockchain "particularly dumb" Newsday
og_url	https://www.newsday.com/business/hbo-john-oliver-long-blockchain-1.17329380
id	/home/radhika/Desktop/crawl_data/data/7529222a34d6a240bca60bd99e51539.html
title	Long Blockchain, cryptocurrency, blockchain, Newsday
og_url	https://www.newsday.com/business/long-blockchain-cryptocurrency-blockchain-1.17404722
id	/home/radhika/Desktop/crawl_data/data/4da7a19495b9ff8271ba2110e4c7e3.html
description	The Stony Brook biotech company says it will use its anti-counterfeiting products in a new field.
title	Applied DNA to track legal cannabis using DNA, blockchain Newsday
og_url	https://www.newsday.com/business/applied-dna-cannabis-blockchain-tracking-1.16358301
id	/home/radhika/Desktop/crawl_data/data/8984ffccf7e3d05ce72dbbde89b4f50.html
description	CEO says Hashcove Ltd. offers "great strategic value" for the Long Island firm, formerly known as Long Island Iced Tea Corp.
title	Long Blockchain to acquire UK-based cryptocurrency company Newsday
og_url	https://www.newsday.com/business/long-blockchain-cryptocurrency-blockchain-1.17404722
id	/home/radhika/Desktop/crawl_data/data/40d6fda975d59755c66e8c30a231b20.html
description	Keep up with Long Island & NYC's business news with Newsday. Including complete coverage on New York businesses, Stock Exchange, Federal Reserve, Technology, Mutual Funds & More.
title	Long Island Business News, Events, Promotions & More Newsday
og_url	https://www.newsday.com/business
id	/home/radhika/Desktop/crawl_data/data/538ea1df1f9e010d80a7f2a71d4ac4fa.html
title	How DreamWorks Uses A.I. And Blockchain Newsday
og_url	https://www.newsday.com/business/how-dreamworks-uses-a-i-and-blockchain-1.17391682

CS1572-Linux [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

IR Homework 4 - Mozilla Firefox

Solr Admin x IR Homework 4 x +

localhost/IRHW4.php?q=Bitcoin+Blockchain&algorithm=lucene 67%

Bitcoin Blockchain

Solr's Default - Lucene Google's - PageRank

Submit Query

Results 1 - <10 of 119:

id	/home/radhika/Desktop/crawl_data/data/ec5364c46063933b0f099534a470ad3.html
description	In satire about companies adding "blockchain" to their names to jump on the bitcoin bandwagon, the late-night host on Sunday night singled out the Farmingdale company.
title	HBO's John Oliver calls Long Blockchain "particularly dumb" Newsday
og_url	https://www.newsday.com/business/hbo-john-oliver-long-blockchain-1.17329380
id	/home/radhika/Desktop/crawl_data/data/7529222a34d6a240bca60bd99e51539.html
title	Long Blockchain, cryptocurrency, blockchain, Newsday
og_url	https://www.newsday.com/business/long-blockchain-cryptocurrency-blockchain-1.17404722
id	/home/radhika/Desktop/crawl_data/data/4da7a19495b9ff8271ba2110e4c7e3.html
description	The Stony Brook biotech company says it will use its anti-counterfeiting products in a new field.
title	Applied DNA to track legal cannabis using DNA, blockchain Newsday
og_url	https://www.newsday.com/business/applied-dna-cannabis-blockchain-tracking-1.16358301
id	/home/radhika/Desktop/crawl_data/data/8984ffccf7e3d05ce72dbbde89b4f50.html
description	CEO says Hashcove Ltd. offers "great strategic value" for the Long Island firm, formerly known as Long Island Iced Tea Corp.
title	Long Blockchain to acquire UK-based cryptocurrency company Newsday
og_url	https://www.newsday.com/business/long-blockchain-cryptocurrency-blockchain-1.17404722
id	/home/radhika/Desktop/crawl_data/data/40d6fda975d59755c66e8c30a231b20.html
description	Keep up with Long Island & NYC's business news with Newsday. Including complete coverage on New York businesses, Stock Exchange, Federal Reserve, Technology, Mutual Funds & More.
title	Long Island Business News, Events, Promotions & More Newsday
og_url	https://www.newsday.com/business
id	/home/radhika/Desktop/crawl_data/data/538ea1df1f9e010d80a7f2a71d4ac4fa.html
title	How DreamWorks Uses A.I. And Blockchain Newsday
og_url	https://www.newsday.com/business/how-dreamworks-uses-a-i-and-blockchain-1.17391682
id	/home/radhika/Desktop/crawl_data/data/42ba07fcb0386e4a156b01337d7f2cd.html
description	The award-winning animation studio is starting to integrate artificial intelligence into various creative animation processes and categorize all its assets, says Jeff Wike, CTO at
title	How DreamWorks Uses A.I. And Blockchain Newsday
og_url	https://www.newsday.com/business/how-dreamworks-uses-a-i-and-blockchain-1.17391682
id	/home/radhika/Desktop/crawl_data/data/4500491fa8bda81b51b6d9335e1cfd.html
title	Bitcoin Buyers Tapping Currency Into Cars, Goods Newsday
og_url	https://www.newsday.com/news/bitcoin-buyers-tapping-currency-into-cars-goods-1.16973171
id	/home/radhika/Desktop/crawl_data/data/2ac01a0b39f4eb4b324c194fb93b90b.html
description	Read the latest local news on Wheatley Heights, NY, including high school sports, events, photos and more from Newsday.
title	Wheatley Heights, NY News & Events Newsday
og_url	https://www.newsday.com/news/bitcoin-buyers-tapping-currency-into-cars-goods-1.16973171

Results for PageRank

CSCI572-Linux [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

Solr Admin x IR Homework 4 x +

localhost/IRHW4.php?q=Bitcoin+Blockchain&algorithm=pagerank 67%

Bitcoin Blockchain

☐ Solr's Default - Lucene ☐ Google's - PageRank

Submit Query

Results 1 - <10 of 119:

id	/home/radhika/Desktop/crawl_data/data/40d6ffda975d59755c66e8c30a231b20.html
description	Keep up with Long Island & NYC's business news with Newsday. Including complete coverage on New York businesses, Stock Exchange, Federal Reserve, Technology, Mutual Funds & More.
title	Long Island Business News, Events, Promotions & More Newsday
og_url	https://www.newsday.com/business
id	/home/radhika/Desktop/crawl_data/data/d06044efc5d8bc752dcbca55c7bc47f.html
description	Looking for a new car? Search through local classifieds for new & used cars in Long Island, Brooklyn, the Bronx, Queens & Manhattan.
title	Buy & Sell New, Used Cars on Long Island Newsday
og_url	https://www.newsday.com/classifieds/cars
id	/home/radhika/Desktop/crawl_data/data/75eb392f0a833cd25962c8cef7f04e18.html
description	Find information and latest news on technology from Newsday. View videos and read articles that cover the internet, business, video games and personal tech.
title	Video Games, Gadget & other Technology News Newsday
og_url	https://www.newsday.com/business/technology
id	/home/radhika/Desktop/crawl_data/data/c9026581afed721e6dea293e078a53b4.html
description	Spring rolls in on Tuesday, and for snow-weary Long Islanders it will be a welcome sight after three unwelcome March nor'easters. These apps can help get your house, garden and yourself in shape for
title	4 apps to help you welcome spring Newsday
og_url	https://www.newsday.com/business/4-apps-to-help-you-welcome-spring-1.17405437
id	/home/radhika/Desktop/crawl_data/data/4056c851e2b4221b6b66dda3dc3f1bc.html
description	Despite two pet-related incidents in the past week, passengers will likely continue to fly with the airline. At the end of the say, said The
title	Will passengers actually boycott United Airlines? Newsday
og_url	https://www.newsday.com/business/will-passengers-actually-boycott-united-airlines-1.17417889
id	/home/radhika/Desktop/crawl_data/data/de8ded5f2fdddb37b5ead60c9f98e7.html
description	After the successful launch of its nacho fries, Taco Bell's got a few more tricks up its sleeve for the coming months. Alyssa Julia Smith
title	A first look at Taco Bell's secret new menu items Newsday
og_url	https://www.newsday.com/business/a-first-look-at-taco-bell-s-secret-new-menu-items-1.17388655

https://www.newsday.com/long-island/nassau/hempstead-ny/atlantic-beach-ny.html events, photos and more from Newsday

CSCI572-Linux [Running] - Oracle VM VirtualBox

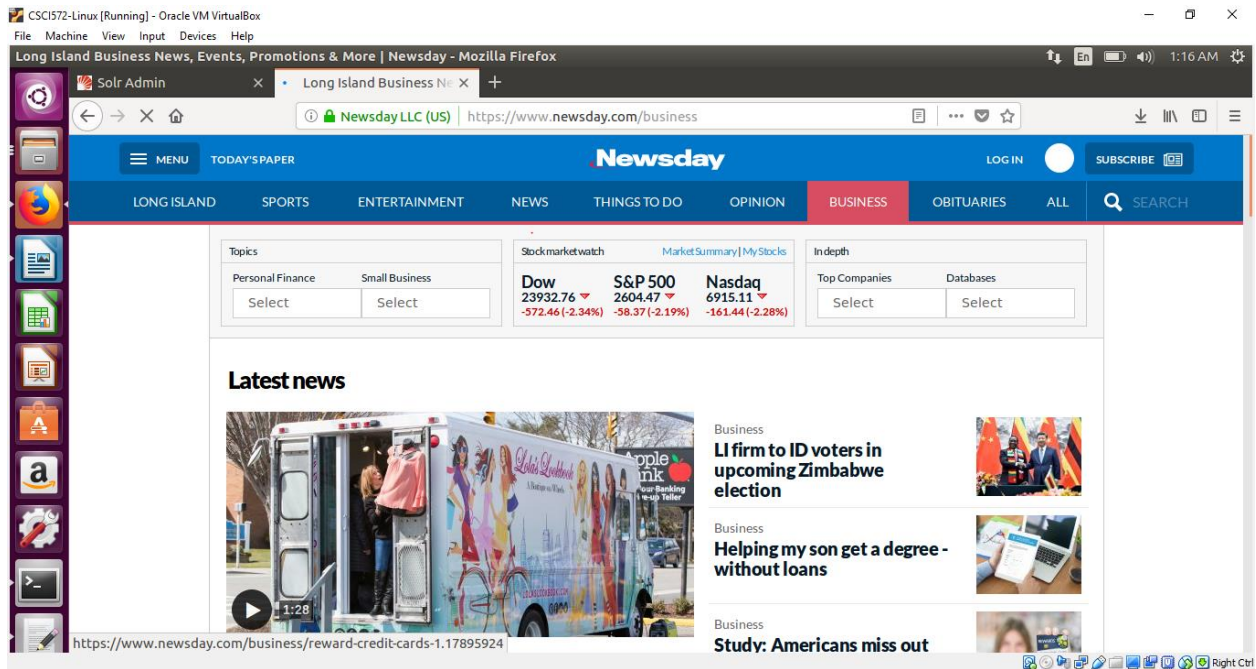
File Machine View Input Devices Help

Solr Admin x IR Homework 4 x +

localhost/IRHW4.php?q=Bitcoin+Blockchain&algorithm=pagerank 67%

og_url	https://www.newsday.com/classifieds/cars
id	/home/radhika/Desktop/crawl_data/data/75eb392f0a833cd25962c8cef7f04e18.html
description	Find information and latest news on technology from Newsday. View videos and read articles that cover the internet, business, video games and personal tech.
title	Video Games, Gadget & other Technology News Newsday
og_url	https://www.newsday.com/business/technology
id	/home/radhika/Desktop/crawl_data/data/c9026581afed721e6dea293e078a53b4.html
description	Spring rolls in on Tuesday, and for snow-weary Long Islanders it will be a welcome sight after three unwelcome March nor'easters. These apps can help get your house, garden and yourself in shape for
title	4 apps to help you welcome spring Newsday
og_url	https://www.newsday.com/business/4-apps-to-help-you-welcome-spring-1.17405437
id	/home/radhika/Desktop/crawl_data/data/4056c851e2b4221b6b66dda3dc3f1bc.html
description	Despite two pet-related incidents in the past week, passengers will likely continue to fly with the airline. At the end of the say, said The
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id	/home/radhika/Desktop/crawl_data/data/de8ded5f2fdddb37b5ead60c9f98e7.html
description	After the successful launch of its nacho fries, Taco Bell's got a few more tricks up its sleeve for the coming months. Alyssa Julia Smith
title	A first look at Taco Bell's secret new menu items Newsday
og_url	https://www.newsday.com/business/a-first-look-at-taco-bell-s-secret-new-menu-items-1.17388655
id	/home/radhika/Desktop/crawl_data/data/1d2747e37fab1416db8f3564f3491d.html
description	Read the latest local news on Atlantic Beach, NY, including high school sports, events, photos and more from Newsday.
title	Atlantic Beach, NY News & Events Newsday
og_url	https://www.newsday.com/long-island/nassau/hempstead-ny/atlantic-beach-ny
id	/home/radhika/Desktop/crawl_data/data/ea83d77c7f33bf2854336d18ee233d4e.html
description	Read the latest local news on Lido Beach, NY, including high school sports, events, photos and more from Newsday.
title	Lido Beach, NY News & Events Newsday
og_url	https://www.newsday.com/long-island/nassau/hempstead-ny/lido-beach-ny
id	/home/radhika/Desktop/crawl_data/data/499d4e25b0679fa44771f49d8d10b329.html
description	In honor of Stephen Hawking's passing, Cheddar takes a look at some of what we've learned from this legendary physicist.
title	The life & legacy of Stephen Hawking Newsday
og_url	https://www.newsday.com/business/the-life-legacy-of-stephen-hawking-1.17394862
id	/home/radhika/Desktop/crawl_data/data/ab313ea2940790e6b9689db5a91793d.html
description	Cabdriver Lesly Remy, owner of Long Island Good Guys Taxi & Limo, and Uber driver Cris Lepurage, of East Meadow, both on Feb. 14, 2018,
title	Lyft, Uber reshaping LI's transportation sector Newsday
og_url	https://www.newsday.com/business/lyft-uber-reshaping-li-s-transportation-sector-1.16761728

Actual webpage that opens on clicking a link



URL's of top 10 results produced by ranking methods (Lucene and PageRank)

1.Bitcoin Blockchain

LUCENE	PAGERANK
https://www.newsday.com/business/long-blockchain-bitcoin-nasdaq-1.16911163	https://www.newsday.com/business
https://www.newsday.com/business/hbo-john-oliver-long-blockchain-1.17329380	https://www.newsday.com/classifieds/cars
https://www.newsday.com/business/long-blockchain-cryptocurrency-blockchain-1.17404722	https://www.newsday.com/business/technology
https://www.newsday.com/business/applied-dna-cannabis-blockchain-tracking-1.16358301	https://www.newsday.com/business/4-apps-to-help-you-welcome-spring-1.17405437
https://www.newsday.com/business/long-blockchain-cryptocurrency-blockchain-1.17404722	https://www.newsday.com/business/will-passengers-actually-boycott-united-airlines-1.17417889
https://www.newsday.com/business	https://www.newsday.com/business/a-first-look-at-taco-bell-s-secret-new-menu-items-1.17388655
https://www.newsday.com/business/how-dreamworks-uses-a-i-and-blockchain-1.17391682	https://www.newsday.com/long-island/nassau/hempstead-ny/atlantic-beach-ny

https://www.newsday.com/business/how-dreamworks-uses-a-i-and-blockchain-1.17391682	https://www.newsday.com/long-island/nassau/hempstead-ny/lido-beach-ny
https://www.newsday.com/news/bitcoin-buyers-tapping-currency-into-cars-goods-1.16973171	https://www.newsday.com/business/the-life-legacy-of-stephen-hawking-1.17394862
https://www.newsday.com/long-island/suffolk/babylon-ny/wheatley-heights-ny?offset=2	https://www.newsday.com/business/lyft-uber-reshaping-li-s-transportation-sector-1.16761728

2.Stephen Hawking

LUCENE	PAGERANK
https://www.newsday.com/news/world/physicist-stephen-hawking-dies-at-age-76-1.17381457	https://www.newsday.com/business
https://www.newsday.com/entertainment/tv/stephen-hawking-tv-roles-1.17384428	https://www.newsday.com/opinion
https://www.newsday.com/news/world/theoretical-physicist-stephen-hawking-has-died-at-76-1.17380191	https://www.newsday.com/news/nation
https://www.newsday.com/news/world/theoretical-physicist-stephen-hawking-dies-at-76-1.17380408	https://www.newsday.com/entertainment
https://www.newsday.com/business/the-life-legacy-of-stephen-hawking-1.17394862	https://www.newsday.com/entertainment/music
https://www.newsday.com/opinion/editorial/stephen-hawking-death-1.17387052	https://www.newsday.com/entertainment/celebrities
https://www.newsday.com/news/world/theoretical-physicist-stephen-hawking-has-died-at-76-1.17380191	https://www.newsday.com/entertainment/movies
https://www.newsday.com/news/world/stephen-hawking-dead-1.17380130	https://www.newsday.com/entertainment/tv
https://www.newsday.com/entertainment/tv/stephen-hawking-tv-roles-1.17384428	https://www.newsday.com/business/technology
https://www.newsday.com/news/world/theoretical-physicist-stephen-hawking-dies-at-76-1.17380408	https://www.newsday.com/entertainment/books

3. Falcon Heavy

LUCENE	PAGERANK
https://www.newsday.com/opinion/columnists/michael-dobie/elon-musk-spacex-1.16670802	https://www.newsday.com/long-island/education/school-by-school-spending-rule-1.17484061
https://www.newsday.com/opinion/columnists/michael-dobie/elon-musk-spacex-1.16670802	https://www.newsday.com/lifestyle/restaurant/perennial-review-garden-city-1.17402910

https://www.newsday.com/long-island/towns/freshmen-win-locust-valley-high-school-float-contest-at-homecoming-parade-1.6329245	https://www.newsday.com/sports/basketball/knicks/knicks-young-players-going-all-out-for-wins-1.17488993
https://www.newsday.com/entertainment/movies/tomb-raider-review-1.17387308	https://www.newsday.com/sports/football/jets/jets-deal-with-colts-to-get-no-3-pick-1.17448060
https://www.newsday.com/business/air-industries-sells-its-amk-subsiidiary-for-up-to-6-million-1.13039083	https://www.newsday.com/lifestyle/restaurants/feed-me/global-buffet-levittown-all-you-can-eat-1.17463506
https://www.newsday.com/entertainment/tv/wet-hot-american-summer-prequel-on-netflix-funnier-than-the-movie-1.10689017	https://www.newsday.com/entertainment/music/my-fathers-place-concerts-1.17424391
https://www.newsday.com/entertainment/movies/tomb-raider-review-1.17387308	https://www.newsday.com/sports/columnists/bob-glauber/nfl-free-agency-1.17433781
https://www.newsday.com/entertainment/celebrities/notable-long-islanders-1.2342650	https://www.newsday.com/lifestyle/restaurants/long-island-cheap-eats-restaurant-reviews-1.4445645
https://www.newsday.com/long-island/suffolk/centerport-house-fire-power-line-1.17205951	https://www.newsday.com/news/world/column-another-victim-of-russian-doping-bites-the-dust-1.17498449
https://www.newsday.com/lifestyle/home-and-garden/winter-bedding-1.14848287	https://www.newsday.com/lifestyle/restaurant/s/2-spring-review-oyster-bay-1.17208606

4.Syrian War

LUCENE	PAGERANK
https://www.newsday.com/news/world/syria-united-nations-1.17436072	https://www.newsday.com/news/nation
https://www.newsday.com/news/world/syria-united-nations-1.17436072	https://www.newsday.com/sports/olympics
https://www.newsday.com/news/world/turkey-syria-afrin-1.17463820	https://www.newsday.com/long-island/history
https://www.newsday.com/news/nation/president-donald-trump-we-re-not-going-into-syria-1.13444720	https://www.newsday.com/opinion/submit-your-letter-1.2516352
https://www.newsday.com/news/world/turkey-syria-afrin-1.17463820	https://www.newsday.com/sports/high-school/girls-basketball/baldwin-girls-make-li-history-by-repeating-as-state-class-aa-champs-1.17483760
https://www.newsday.com/news/world/russia-uk-diplomats-spy-poisoning-1.17448346	https://www.newsday.com/entertainment/celebrities/recent-notable-deaths-1.1236203
https://www.newsday.com/news/world/north-korea-photos-from-a-reclusive-country-1.13637395	https://www.newsday.com/long-island/nassau/passover-baskets-1.17486468

https://www.newsday.com/news/nation/sean-spicer-claims-even-hitler-didn-t-use-chemical-weapons-1.13431614	https://www.newsday.com/news/nation/president-trump-first-year-moments-1.16257304
https://www.newsday.com/news/world/the-latest-russia-rejects-ultimatums-over-spy-poisoning-1.17381984	https://www.newsday.com/travel/weekend-getaways-near-new-york-city-1.5299723
https://www.newsday.com/long-island/suffolk/iraq-helicopter-crash-westhampton-1.17456031	https://www.newsday.com/news/world

5.LA Rams

LUCENE	PAGERANK
https://www.newsday.com/sports/football/super-bowl/super-bowl-history-1.170249	https://www.newsday.com/classifieds/cars
https://www.newsday.com/sports/football/giants/alec-ogletree-traded-giants-rams-1.17191446	https://www.newsday.com/sports/football/jets
https://www.newsday.com/sports/football/giants/alec-ogletree-traded-giants-rams-1.17191446	https://www.newsday.com/sports/football/giants
https://www.newsday.com/sports/football/jets/jets-isaiah-crowell-trumaine-johnson-1.17379143	https://www.newsday.com/sports/soccer
https://www.newsday.com/sports/football/giants/alec-ogletree-odell-beckham-teammates-1.17406118	https://www.newsday.com/opinion/submit-your-letter-1.2516352
https://www.newsday.com/sports/football/jets/jets-isaiah-crowell-trumaine-johnson-1.17379143	https://www.newsday.com/entertainment/celebrities/recent-notable-deaths-1.1236203
https://www.newsday.com/sports/football/giants/giants-overhaul-to-offensive-line-has-been-a-smooth-ride-1.17412710	https://www.newsday.com/lifestyle/restaurants/feed-me/beginnings-atlantic-beach-goodfellas-1.17419673
https://www.newsday.com/sports/football/giants/alec-ogletree-odell-beckham-teammates-1.17406118	https://www.newsday.com/sports/football/jets/jets-deal-with-colts-to-get-no-3-pick-1.17448060
https://www.newsday.com/sports/football/nfl-free-agency-cousins-brees-1.17225240	https://www.newsday.com/lifestyle/restaurants/barbecue-restaurants-on-long-island-our-critics-favorites-1.8916757
https://www.newsday.com/sports/football/super-bowl/super-bowl-game-winning-drives-1.6477576	https://www.newsday.com/travel/show-us-your-travel-photos-1.12098434

6.Black Panther

LUCENE	PAGERANK
https://www.newsday.com/entertainment/movies/black-panther-box-office-1.17471969	https://www.newsday.com/long-island
https://www.newsday.com/entertainment/movies/hempstead-students-see-black-panther-1.16901584	https://www.newsday.com/lifestyle
https://www.newsday.com/entertainment/movies/black-panther-review-1.16582314	https://www.newsday.com/entertainment
https://www.newsday.com/entertainment/movies/black-panther-1.16552223	https://www.newsday.com/long-island/nassau
https://www.newsday.com/entertainment/movies/black-panther-box-office-1.17471969	https://www.newsday.com/news/health
https://www.newsday.com/entertainment/movies/black-panther-1.16552223	https://www.newsday.com/classifieds/real-estate
https://www.newsday.com/entertainment/movies/hempstead-students-see-black-panther-1.16901584	https://www.newsday.com/entertainment/movies
https://www.newsday.com/entertainment/movies/black-panther-review-1.16582314	https://www.newsday.com/entertainment/tv
https://www.newsday.com/long-island/nassau/hempstead-students-treated-to-black-panther-showing-1.16901559	https://www.newsday.com/sports/boxing
https://www.newsday.com/entertainment/movies/latest-movie-reviews-1.2333132?offset=2	https://www.newsday.com/lifestyle/home-and-garden

7.Austin Bombings

LUCENE	PAGERANK
https://www.newsday.com/news/police-search-for-motive-in-austin-bombings-1.17372261	https://www.newsday.com/news/nation
https://www.newsday.com/news/police-search-for-motive-in-austin-bombings-1.17372261	https://www.newsday.com/
https://www.newsday.com/news/nation/austin-texas-explosion-1.17496366	https://www.newsday.com/
https://www.newsday.com/news/nation/austin-texas-explosion-1.17496366	https://www.newsday.com/long-island/education/school-by-school-spending-rule-1.17484061
https://www.newsday.com/news/police-tripwire-may-have-set-off-austin-blast-1.17498369	https://www.newsday.com/long-island/suffolk/andreas-o-keeffe-iraq-chopper-crash-1.17487480
https://www.newsday.com/news/federal-agents-swarm-austin-explosion-area-1.17497925	https://www.newsday.com/entertainment/celebrities/celebrities-at-sxsw-1.17186200
https://www.newsday.com/news/austin-texas-explosion-injures-two-1.17497374	https://www.newsday.com/lifestyle/family/netflix-kids-streaming-now-1.10684524

https://www.newsday.com/news/nation/austin-package-bombs-1.17336169	https://www.newsday.com/news/region-state/cuomo-gun-background-check-1.17489680
https://www.newsday.com/news/louisville-basketball-vacates-championship-title-1.16884735	https://www.newsday.com/news/nation/president-trump-first-year-moments-1.16257304
https://www.newsday.com/news/today-in-history-for-march-16th-1.17413721	https://www.newsday.com/sports/columnists/bob-glauber/nfl-free-agency-1.17433781

8.Paris Climate Deal

LUCENE	PAGERANK
https://www.newsday.com/news/nation/trump-withdraws-u-s-from-paris-agreement-andrew-cuomo-barack-obama-scott-pruitt-more-respond-1.13700637	https://www.newsday.com/business
https://www.newsday.com/news/nation/trump-u-s-will-withdraw-from-paris-climate-accord-1.13699039	https://www.newsday.com/sports
https://www.newsday.com/opinion/columnists/michael-dobie/withdrawing-from-climate-deal-wrongheaded-1.13700910	https://www.newsday.com/news/nation
https://www.newsday.com/news/nation/trump-withdraws-u-s-from-paris-agreement-andrew-cuomo-barack-obama-scott-pruitt-more-respond-1.13700637	https://www.newsday.com/classifieds/cars
https://www.newsday.com/news/nation/trump-u-s-will-withdraw-from-paris-climate-accord-1.13699039	https://www.newsday.com/sports/football/jets
https://www.newsday.com/opinion/editorial/after-paris-pullout-americans-can-do-their-part-on-climate-1.13701237	https://www.newsday.com/sports/football/giants
https://www.newsday.com/opinion/eight-ideas-to-deal-with-climate-change-and-save-the-planet-1.11176829	https://www.newsday.com/sports/football
https://www.newsday.com/opinion/eight-ideas-to-deal-with-climate-change-and-save-the-planet-1.11176829	https://www.newsday.com/sports/soccer
https://www.newsday.com/opinion/columnists/michael-dobie/the-terrible-what-ifs-of-climate-change-1.11068353	https://www.newsday.com/entertainment/tv/reality-tv
https://www.newsday.com/long-island/environmentalists-li-is-closest-to-problem-of-climate-change-1.13729504	https://www.newsday.com/sports/golf

Overlap of Results

Number	Query	No. of Overlaps
1	Bitcoin Blockchain	1
2	Stephen Hawking	0
3	Falcon Heavy	0
4	Syrian War	0
5	LA Rams	0
6	Black Panther	0
7	Austin Bombings	0
8	Paris Climate Deal	0

