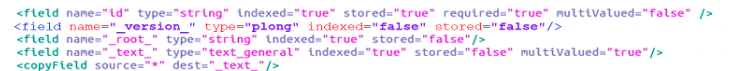
**Report of CSCI572 HW4 Solr Exercise**

1. Steps of what I have done

* I read all the documents carefully and found that I didn’t need to use Ubuntu because I have a Mac
* Then I followed the document “Instructions for Installing Solr” to install solr on my Mac. First download the “Solr-7.5.0.zip” and then use command line “unzip –q solr-7.5.0.zip” to unzip it and use “cd solr-7.5.0” to get into its directory. Then I use bin/solr start to start the solr server. And I finished the three examples in the instructions.
* I followed the document “Indexing HTML files Solr” to index files which I download from google drive. Created a new core using command bin/solr create –c myexample.
* Edit the managed-schema file and add the following 2 parameters as follow:



* I used command $bin/post –c myexample –filetypes html HTML/files/ to index html files in Solr.
* Then I can open the admin UI via <http://localhost:8983/solr/>
* Search on google on how to start Apache within Mac.
* Git clone php package
* put solr-php-client on my directory “/Library/WebServer/Documents”
* modify the given php code, and I use Bootstrap4 to get the beautiful UI. Also put it within the directory above
* In Intellij IDEA I created a maven project and import the JSoup dependency and writed the java code. The java code read all the outgoing links in HTML pages and finally output a edgelist file which could be used to calculate the pagerank in the next step.
* Open my mac command line and input python the get the python environment and then import nextworkx library. Then read the edgelist file generated before and get the pagerank file.
* I used several parameters in python as below:



* Copy the pagerank file to the core directory in Solr.
* Edit the managed-schema file by adding the following codes:



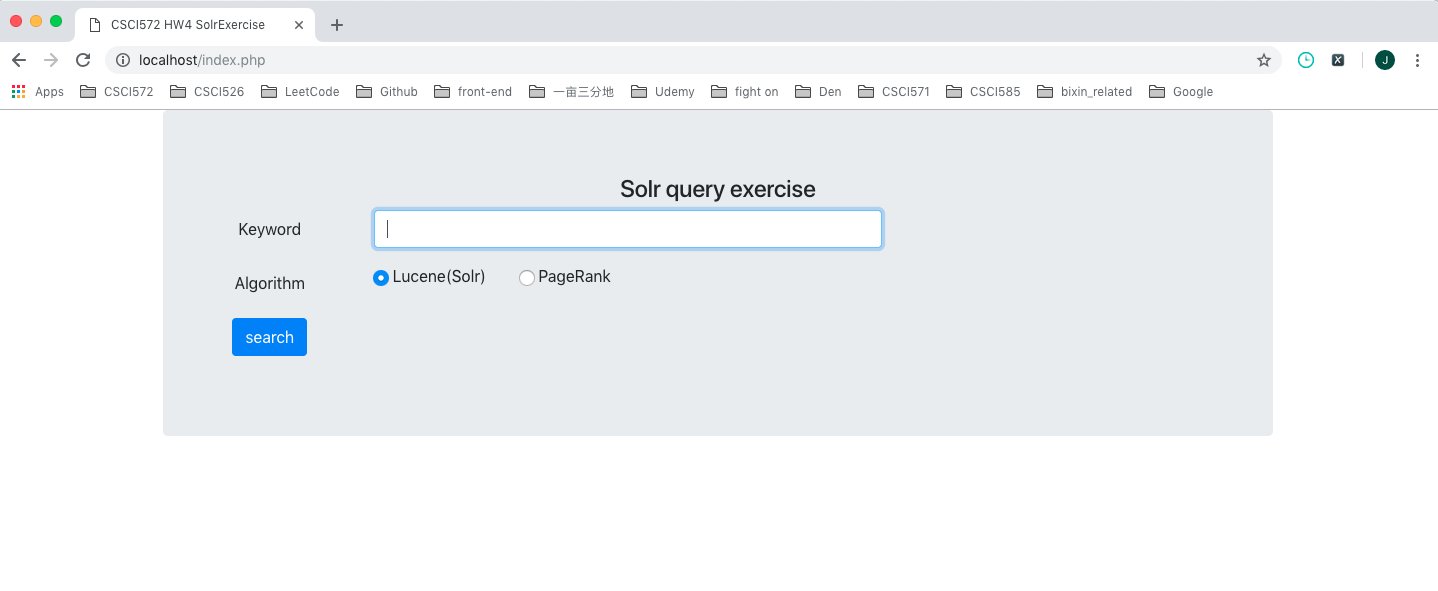
* Then reload Solr from Solr admin UI and it works well

1. Explanations on why some pages have higher PageRank values.

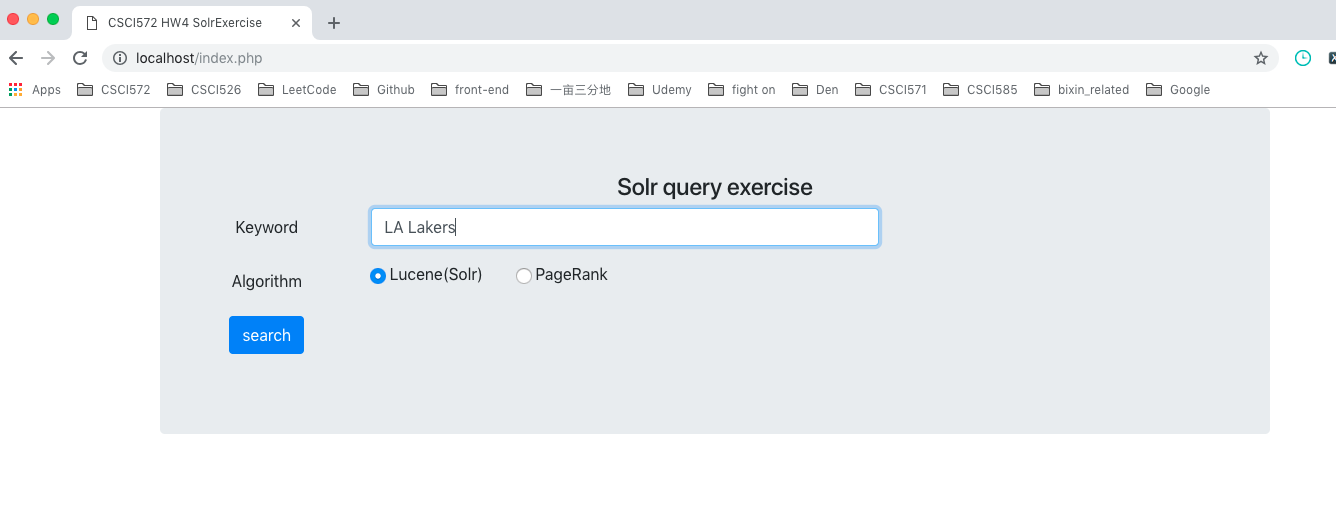
That is because there are lots of other pages have links pointing to these pages. The more incomings links to these pages, the higher PageRank they will get.

1. Flow for query “LA Lakers” using screenshots

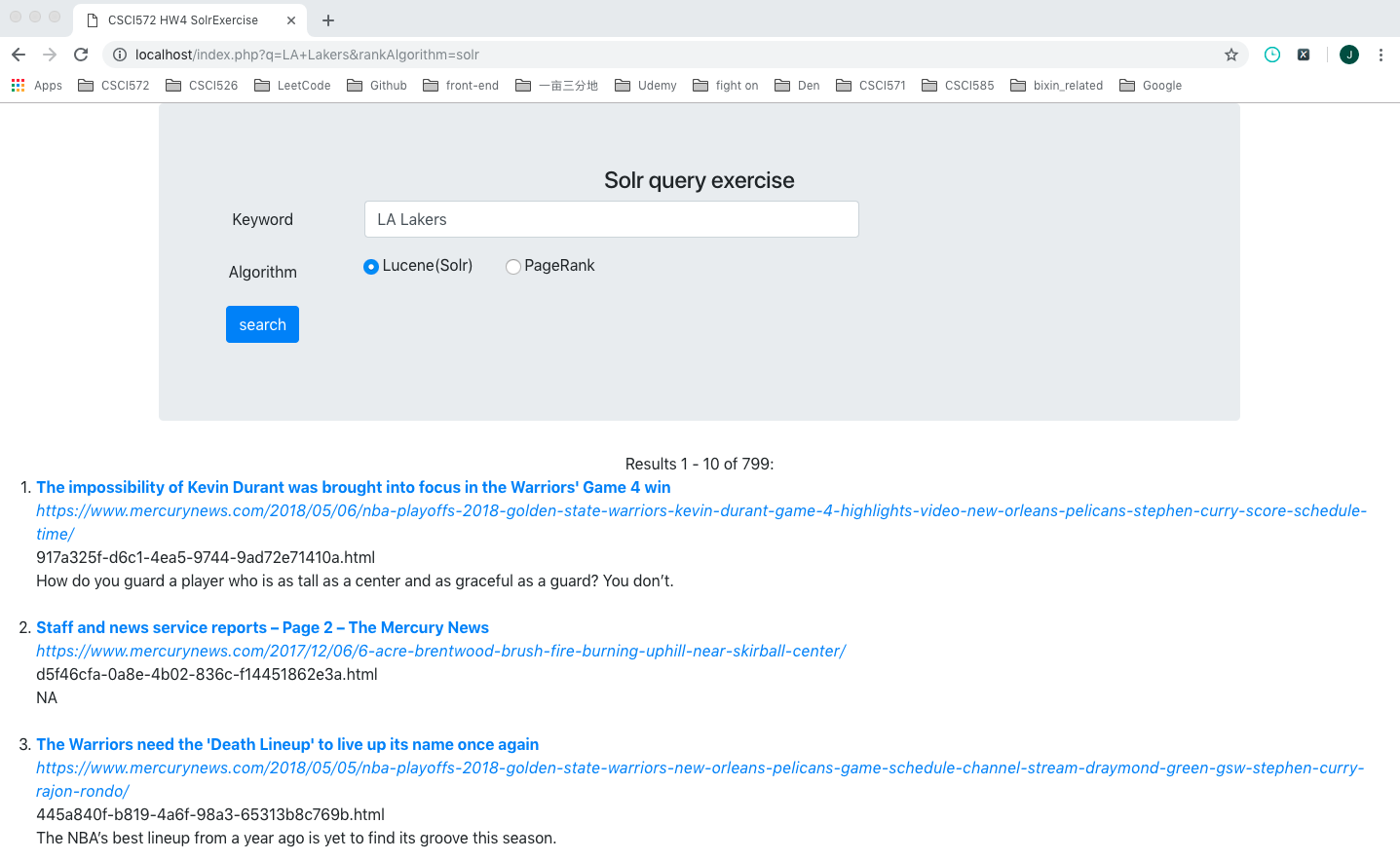
·Initial page

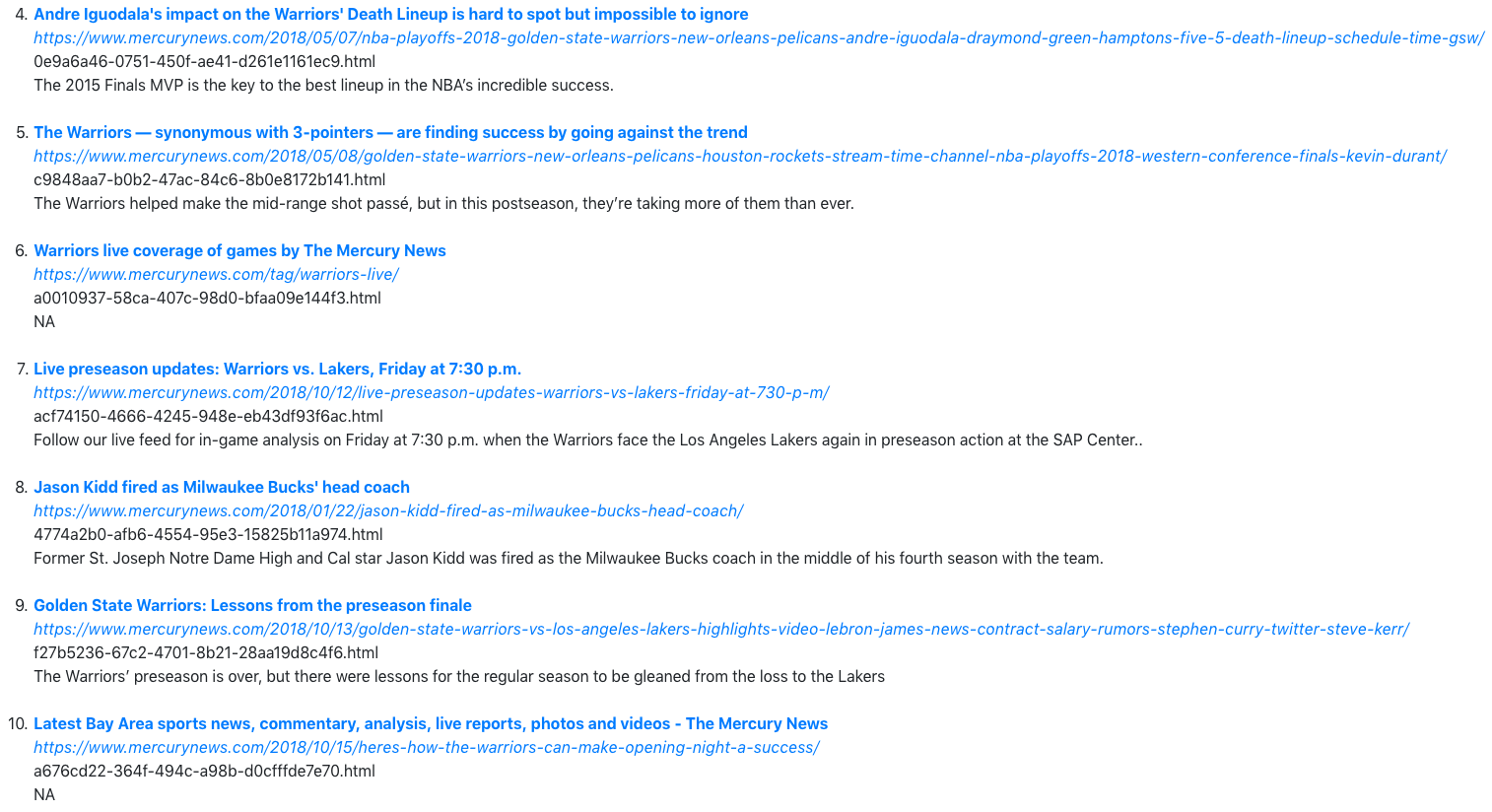


·enter query “LA Lakers” in input box

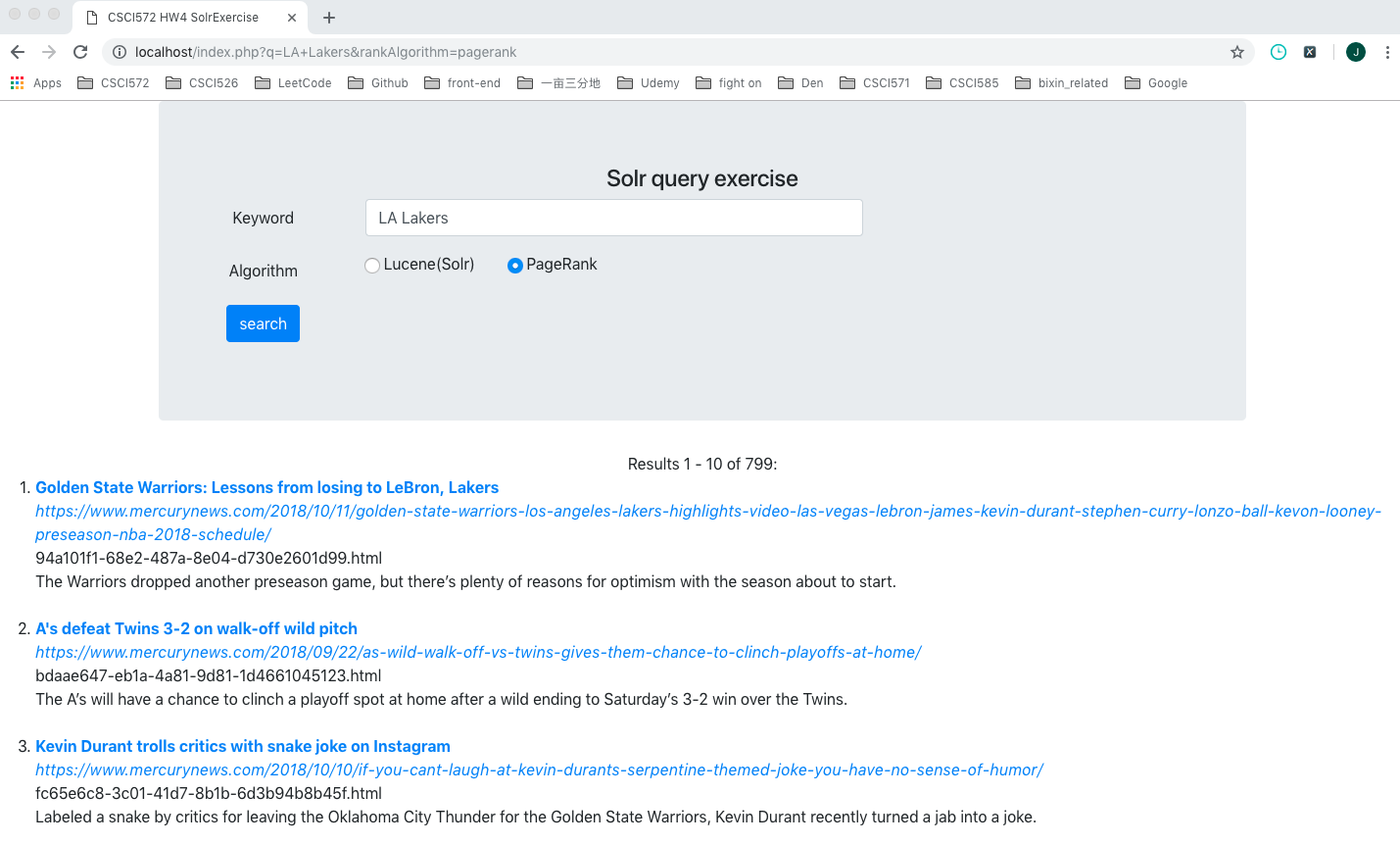


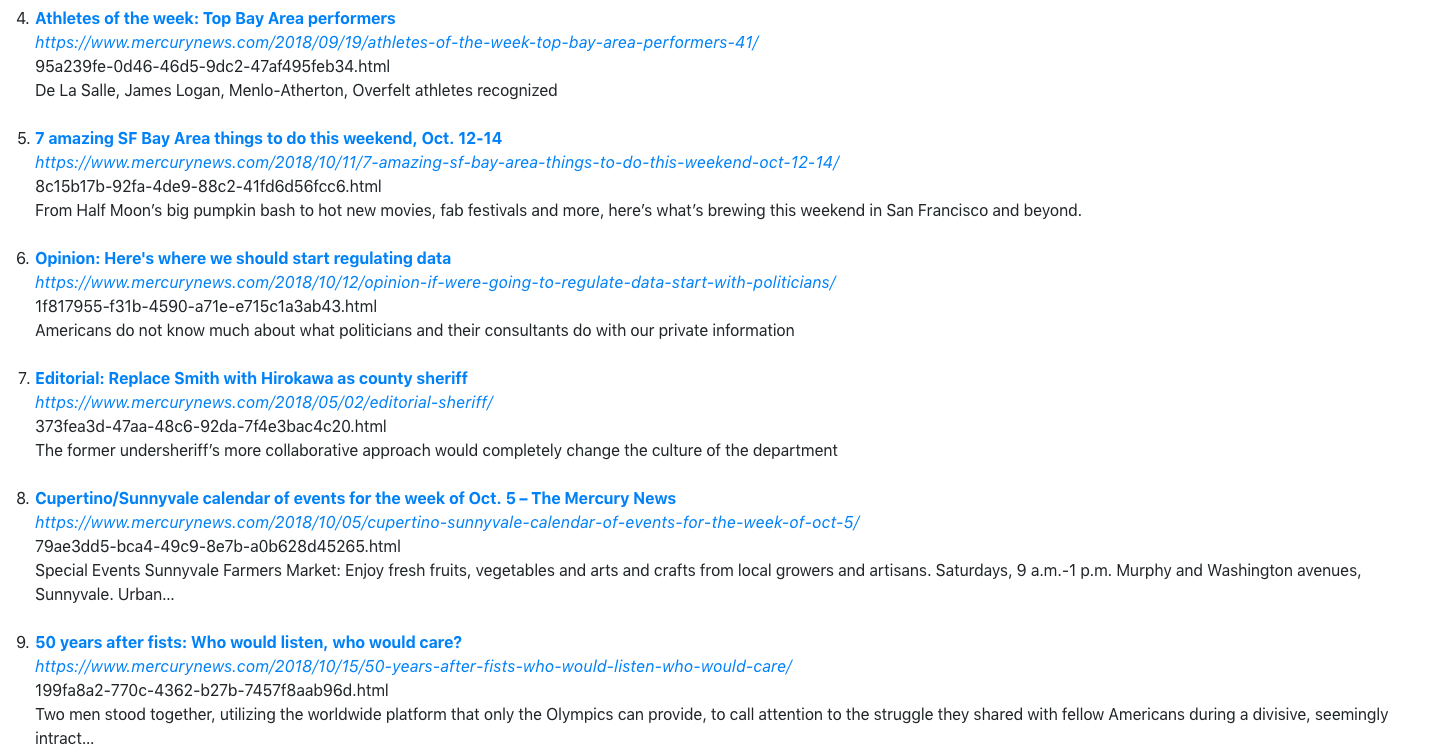
·results for using Lucene

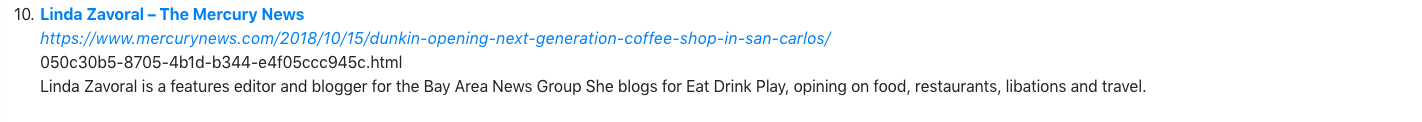




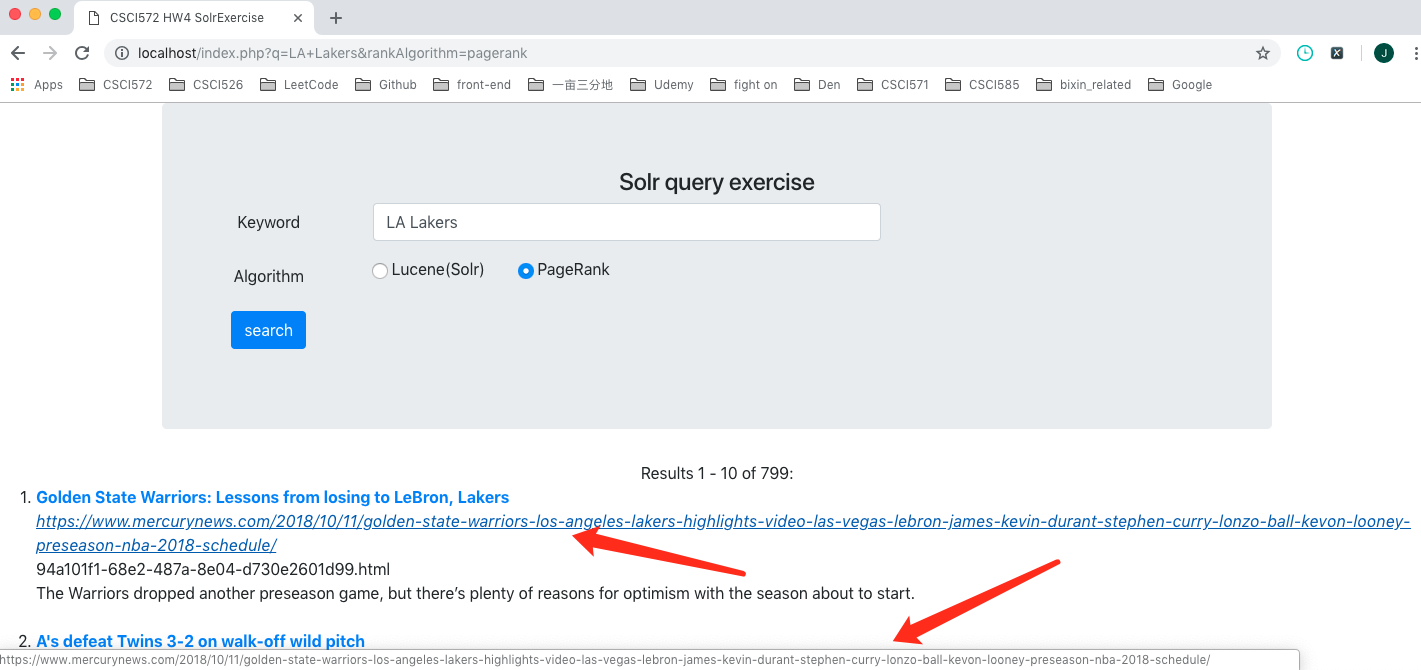
·results for using PageRank

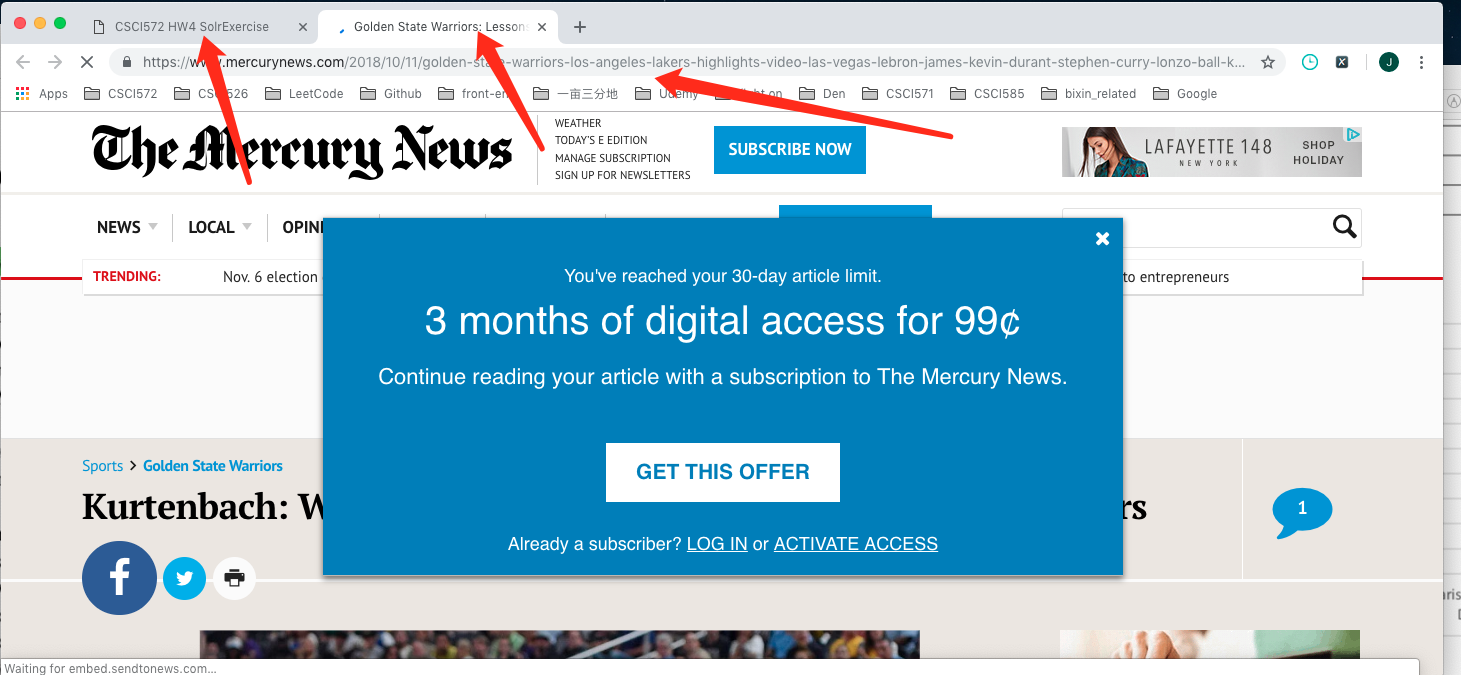






·click on one of the link





1. Table of top ten results produced by both ranking methods

·query “Donald Trump”

|  |  |
| --- | --- |
| Donald Trump | |
| Lucene | PageRank |
| <https://www.mercurynews.com/2018/09/28/kimberly-guilfoyle-didnt-join-donald-trump-jr-s-twitter-attacks-on-christine-blasey-fords-credibility/> | [*https://www.mercurynews.com/2014/01/22/celebrating-dr-kings-accomplishments/*](https://www.mercurynews.com/2014/01/22/celebrating-dr-kings-accomplishments/) |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | https://www.mercurynews.com/tag/celebrity-politics/page/2/ |  |  |  |  |  | | [*https://www.mercurynews.com/2018/02/20/h-1b-visas-how-the-trump-administration-is-freaking-people-out/*](https://www.mercurynews.com/2018/02/20/h-1b-visas-how-the-trump-administration-is-freaking-people-out/) |
| [*https://www.mercurynews.com/2016/08/31/who-is-kevin-macdonald-alt-right-californian-retweeted-by-donald-trump-jr/*](https://www.mercurynews.com/2016/08/31/who-is-kevin-macdonald-alt-right-californian-retweeted-by-donald-trump-jr/) | [*https://www.mercurynews.com/2018/10/14/trump-on-friction-with-mattis-hes-a-good-guy-but-sort-of-a-democrat/*](https://www.mercurynews.com/2018/10/14/trump-on-friction-with-mattis-hes-a-good-guy-but-sort-of-a-democrat/) |
| [*https://www.mercurynews.com/2018/10/05/ivanka-trump-self-proclaimed-advocate-for-women-is-fine-with-brett-kavanaughs-confirmation-report-says/*](https://www.mercurynews.com/2018/10/05/ivanka-trump-self-proclaimed-advocate-for-women-is-fine-with-brett-kavanaughs-confirmation-report-says/) | [*https://www.mercurynews.com/2018/09/04/kaepernick-nike-backlash-fierce-but-they-arent-getting-the-worst-of-it/*](https://www.mercurynews.com/2018/09/04/kaepernick-nike-backlash-fierce-but-they-arent-getting-the-worst-of-it/) |
| [*https://www.mercurynews.com/2018/07/18/did-queen-elizabeth-wage-brooch-warfare-against-donald-trump/*](https://www.mercurynews.com/2018/07/18/did-queen-elizabeth-wage-brooch-warfare-against-donald-trump/) | [*https://www.mercurynews.com/2018/01/02/how-east-palo-alto-shed-its-crime-rep-and-built-a-new-path-forward/*](https://www.mercurynews.com/2018/01/02/how-east-palo-alto-shed-its-crime-rep-and-built-a-new-path-forward/) |
| [*https://www.mercurynews.com/2018/09/24/more-ivanka-trump-complicity-first-daughter-stays-silent-on-brett-kavanaugh-controversy/*](https://www.mercurynews.com/2018/09/24/more-ivanka-trump-complicity-first-daughter-stays-silent-on-brett-kavanaugh-controversy/) | [*https://www.mercurynews.com/2018/06/23/opinion-the-world-cup-is-coming-but-fifa-makes-me-nervous/*](https://www.mercurynews.com/2018/06/23/opinion-the-world-cup-is-coming-but-fifa-makes-me-nervous/) |
| [*https://www.mercurynews.com/2018/08/28/political-cartoons-donald-trump-and-the-john-mccain-tributes/*](https://www.mercurynews.com/2018/08/28/political-cartoons-donald-trump-and-the-john-mccain-tributes/) | [*https://www.mercurynews.com/2018/05/27/robinson-dark-branding-trump-knows-words-dont-just-describe-reality-they-shape-it/*](https://www.mercurynews.com/2018/05/27/robinson-dark-branding-trump-knows-words-dont-just-describe-reality-they-shape-it/) |
| [*https://www.mercurynews.com/2018/08/30/political-cartoons-donald-trump-blasts-google/*](https://www.mercurynews.com/2018/08/30/political-cartoons-donald-trump-blasts-google/) | [*https://www.mercurynews.com/2018/09/26/apple-google-twitter-execs-to-talk-privacy-before-senate-panel/*](https://www.mercurynews.com/2018/09/26/apple-google-twitter-execs-to-talk-privacy-before-senate-panel/) |
| [*https://www.mercurynews.com/2018/09/21/opinion-evangelicals-puzzling-devotion-to-donald-trump/*](https://www.mercurynews.com/2018/09/21/opinion-evangelicals-puzzling-devotion-to-donald-trump/) | [*https://www.mercurynews.com/2018/09/18/reports-suspended-uc-berkeley-professor-retires-plans-to-sue/*](https://www.mercurynews.com/2018/09/18/reports-suspended-uc-berkeley-professor-retires-plans-to-sue/) |
| [*https://www.mercurynews.com/2018/09/21/opinion-evangelicals-puzzling-devotion-to-donald-trump/*](https://www.mercurynews.com/2018/09/21/opinion-evangelicals-puzzling-devotion-to-donald-trump/) | |  |  |  |  |  | | --- | --- | --- | --- | --- | | *https://www.mercurynews.com/tag/social-networks/* |  |  |  |  | |

·query “LA Lakers”

|  |  |
| --- | --- |
| LA Lakers | |
| Lucene | PageRank |
| [*https://www.mercurynews.com/2018/05/06/nba-playoffs-2018-golden-state-warriors-kevin-durant-game-4-highlights-video-new-orleans-pelicans-stephen-curry-score-schedule-time/*](https://www.mercurynews.com/2018/05/06/nba-playoffs-2018-golden-state-warriors-kevin-durant-game-4-highlights-video-new-orleans-pelicans-stephen-curry-score-schedule-time/) | [*https://www.mercurynews.com/2018/10/11/golden-state-warriors-los-angeles-lakers-highlights-video-las-vegas-lebron-james-kevin-durant-stephen-curry-lonzo-ball-kevon-looney-preseason-nba-2018-schedule/*](https://www.mercurynews.com/2018/10/11/golden-state-warriors-los-angeles-lakers-highlights-video-las-vegas-lebron-james-kevin-durant-stephen-curry-lonzo-ball-kevon-looney-preseason-nba-2018-schedule/) |
| [*https://www.mercurynews.com/2017/12/06/6-acre-brentwood-brush-fire-burning-uphill-near-skirball-center/*](https://www.mercurynews.com/2017/12/06/6-acre-brentwood-brush-fire-burning-uphill-near-skirball-center/) | [*https://www.mercurynews.com/2018/09/22/as-wild-walk-off-vs-twins-gives-them-chance-to-clinch-playoffs-at-home/*](https://www.mercurynews.com/2018/09/22/as-wild-walk-off-vs-twins-gives-them-chance-to-clinch-playoffs-at-home/) |
| [*https://www.mercurynews.com/2018/05/05/nba-playoffs-2018-golden-state-warriors-new-orleans-pelicans-game-schedule-channel-stream-draymond-green-gsw-stephen-curry-rajon-rondo/*](https://www.mercurynews.com/2018/05/05/nba-playoffs-2018-golden-state-warriors-new-orleans-pelicans-game-schedule-channel-stream-draymond-green-gsw-stephen-curry-rajon-rondo/) | [*https://www.mercurynews.com/2018/10/10/if-you-cant-laugh-at-kevin-durants-serpentine-themed-joke-you-have-no-sense-of-humor/*](https://www.mercurynews.com/2018/10/10/if-you-cant-laugh-at-kevin-durants-serpentine-themed-joke-you-have-no-sense-of-humor/) |
| [*https://www.mercurynews.com/2018/05/07/nba-playoffs-2018-golden-state-warriors-new-orleans-pelicans-andre-iguodala-draymond-green-hamptons-five-5-death-lineup-schedule-time-gsw/*](https://www.mercurynews.com/2018/05/07/nba-playoffs-2018-golden-state-warriors-new-orleans-pelicans-andre-iguodala-draymond-green-hamptons-five-5-death-lineup-schedule-time-gsw/) | [*https://www.mercurynews.com/2018/09/19/athletes-of-the-week-top-bay-area-performers-41/*](https://www.mercurynews.com/2018/09/19/athletes-of-the-week-top-bay-area-performers-41/) |
| [*https://www.mercurynews.com/2018/05/08/golden-state-warriors-new-orleans-pelicans-houston-rockets-stream-time-channel-nba-playoffs-2018-western-conference-finals-kevin-durant/*](https://www.mercurynews.com/2018/05/08/golden-state-warriors-new-orleans-pelicans-houston-rockets-stream-time-channel-nba-playoffs-2018-western-conference-finals-kevin-durant/) | [*https://www.mercurynews.com/2018/10/11/7-amazing-sf-bay-area-things-to-do-this-weekend-oct-12-14/*](https://www.mercurynews.com/2018/10/11/7-amazing-sf-bay-area-things-to-do-this-weekend-oct-12-14/) |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | *https://www.mercurynews.com/tag/warriors-live/* |  |  |  |  | | [*https://www.mercurynews.com/2018/10/12/opinion-if-were-going-to-regulate-data-start-with-politicians/*](https://www.mercurynews.com/2018/10/12/opinion-if-were-going-to-regulate-data-start-with-politicians/) |
| [*https://www.mercurynews.com/2018/10/12/live-preseason-updates-warriors-vs-lakers-friday-at-730-p-m/*](https://www.mercurynews.com/2018/10/12/live-preseason-updates-warriors-vs-lakers-friday-at-730-p-m/) | [*https://www.mercurynews.com/2018/05/02/editorial-sheriff/*](https://www.mercurynews.com/2018/05/02/editorial-sheriff/) |
| [*https://www.mercurynews.com/2018/01/22/jason-kidd-fired-as-milwaukee-bucks-head-coach/*](https://www.mercurynews.com/2018/01/22/jason-kidd-fired-as-milwaukee-bucks-head-coach/) | [*https://www.mercurynews.com/2018/10/05/cupertino-sunnyvale-calendar-of-events-for-the-week-of-oct-5/*](https://www.mercurynews.com/2018/10/05/cupertino-sunnyvale-calendar-of-events-for-the-week-of-oct-5/) |
| [*https://www.mercurynews.com/2018/10/13/golden-state-warriors-vs-los-angeles-lakers-highlights-video-lebron-james-news-contract-salary-rumors-stephen-curry-twitter-steve-kerr/*](https://www.mercurynews.com/2018/10/13/golden-state-warriors-vs-los-angeles-lakers-highlights-video-lebron-james-news-contract-salary-rumors-stephen-curry-twitter-steve-kerr/) | [*https://www.mercurynews.com/2018/10/15/50-years-after-fists-who-would-listen-who-would-care/*](https://www.mercurynews.com/2018/10/15/50-years-after-fists-who-would-listen-who-would-care/) |
| [*https://www.mercurynews.com/2018/10/15/heres-how-the-warriors-can-make-opening-night-a-success/*](https://www.mercurynews.com/2018/10/15/heres-how-the-warriors-can-make-opening-night-a-success/) | [*https://www.mercurynews.com/2018/10/15/dunkin-opening-next-generation-coffee-shop-in-san-carlos/*](https://www.mercurynews.com/2018/10/15/dunkin-opening-next-generation-coffee-shop-in-san-carlos/) |

·query “Star Wars”

|  |  |
| --- | --- |
| Star Wars | |
| Lucene | PageRank |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | *https://www.mercurynews.com/tag/star-wars/* |  |  |  |  | | [*https://www.mercurynews.com/2018/06/20/nba-draft-how-warriors-have-been-successful-with-recent-late-draft-picks/*](https://www.mercurynews.com/2018/06/20/nba-draft-how-warriors-have-been-successful-with-recent-late-draft-picks/) |
| [*https://www.mercurynews.com/2017/12/14/fans-line-up-for-star-wars-the-last-jedi-at-the-tech-museum/*](https://www.mercurynews.com/2017/12/14/fans-line-up-for-star-wars-the-last-jedi-at-the-tech-museum/) | [*https://www.mercurynews.com/2018/09/04/kaepernick-nike-backlash-fierce-but-they-arent-getting-the-worst-of-it/*](https://www.mercurynews.com/2018/09/04/kaepernick-nike-backlash-fierce-but-they-arent-getting-the-worst-of-it/) |
| [*https://www.mercurynews.com/2018/10/08/disneyland-star-wars-galaxys-edge-preview/*](https://www.mercurynews.com/2018/10/08/disneyland-star-wars-galaxys-edge-preview/) | [*https://www.mercurynews.com/2018/08/26/oakland-grand-lake-theaters-longtime-operator-buys-the-building-and-ensures-its-future-as-a-movie-theater/*](https://www.mercurynews.com/2018/08/26/oakland-grand-lake-theaters-longtime-operator-buys-the-building-and-ensures-its-future-as-a-movie-theater/) |
| [*https://www.mercurynews.com/2018/10/08/disneyland-star-wars-galaxys-edge-preview/*](https://www.mercurynews.com/2018/10/08/disneyland-star-wars-galaxys-edge-preview/) | [*https://www.mercurynews.com/2018/08/21/for-ariana-grande-and-pete-davidson-the-vmas-was-one-big-make-out-session/*](https://www.mercurynews.com/2018/08/21/for-ariana-grande-and-pete-davidson-the-vmas-was-one-big-make-out-session/) |
| [*http://www.ocregister.com/disneyland-will-sell-alcohol-for-the-first-time-when-star-wars-land-opens-in-2019*](http://www.ocregister.com/disneyland-will-sell-alcohol-for-the-first-time-when-star-wars-land-opens-in-2019) | [*https://www.mercurynews.com/2018/10/07/walking-dead-cast-celebrities-remember-scott-wilson/*](https://www.mercurynews.com/2018/10/07/walking-dead-cast-celebrities-remember-scott-wilson/) |
| [*https://www.mercurynews.com/2018/08/01/star-wars-filmmaker-j-j-abrams-sends-his-first-ever-tweet-heres-what-it-said/*](https://www.mercurynews.com/2018/08/01/star-wars-filmmaker-j-j-abrams-sends-his-first-ever-tweet-heres-what-it-said/) | |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | *https://www.mercurynews.com/location/california/bay-area/south-bay/santa-clara-county/almaden-valley/page/3/* |  |  |  |  |  |  |  |  |  |  | |
| [*http://www.ocregister.com/disneyland-is-quietly-removing-seating-and-planters-for-star-wars-land-access*](http://www.ocregister.com/disneyland-is-quietly-removing-seating-and-planters-for-star-wars-land-access) | [*https://www.mercurynews.com/2018/08/24/if-san-jose-state-football-is-going-to-be-markedly-better-these-10-things-better-happen/*](https://www.mercurynews.com/2018/08/24/if-san-jose-state-football-is-going-to-be-markedly-better-these-10-things-better-happen/) |
| [*https://www.mercurynews.com/2018/08/22/star-wars-actress-defies-racists-with-return-to-instagram/*](https://www.mercurynews.com/2018/08/22/star-wars-actress-defies-racists-with-return-to-instagram/) | |  |  |  |  |  | | --- | --- | --- | --- | --- | | *https://www.mercurynews.com/tag/social-networks/* |  |  |  |  | |
| [*https://www.mercurynews.com/2018/10/15/17-ways-to-save-money-on-a-trip-to-disneyland/*](https://www.mercurynews.com/2018/10/15/17-ways-to-save-money-on-a-trip-to-disneyland/) | [*https://www.mercurynews.com/2018/07/16/will-debate-over-baseballs-current-defects-offers-lessons-about-other-things/*](https://www.mercurynews.com/2018/07/16/will-debate-over-baseballs-current-defects-offers-lessons-about-other-things/) |
| [*http://www.ocregister.com/disneyland-is-quietly-removing-seating-and-planters-for-star-wars-land-access*](http://www.ocregister.com/disneyland-is-quietly-removing-seating-and-planters-for-star-wars-land-access) | [*https://www.mercurynews.com/2018/09/22/as-wild-walk-off-vs-twins-gives-them-chance-to-clinch-playoffs-at-home/*](https://www.mercurynews.com/2018/09/22/as-wild-walk-off-vs-twins-gives-them-chance-to-clinch-playoffs-at-home/) |

·query “Lebron James”

|  |  |
| --- | --- |
| Lebron James | |
| Lucene | PageRank |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *https://www.mercurynews.com/tag/lebron-james/page/2/* |  |  |  |  |  | | [*https://www.mercurynews.com/2014/01/22/celebrating-dr-kings-accomplishments/*](https://www.mercurynews.com/2014/01/22/celebrating-dr-kings-accomplishments/) |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | *https://www.mercurynews.com/tag/lebron-james/* |  |  |  |  | | [*https://www.mercurynews.com/2018/09/04/kaepernick-nike-backlash-fierce-but-they-arent-getting-the-worst-of-it/*](https://www.mercurynews.com/2018/09/04/kaepernick-nike-backlash-fierce-but-they-arent-getting-the-worst-of-it/) |
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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | *https://www.mercurynews.com/tag/cleveland-cavaliers/* |  |  |  |  |  | | [*https://www.mercurynews.com/2018/10/11/golden-state-warriors-los-angeles-lakers-highlights-video-las-vegas-lebron-james-kevin-durant-stephen-curry-lonzo-ball-kevon-looney-preseason-nba-2018-schedule/*](https://www.mercurynews.com/2018/10/11/golden-state-warriors-los-angeles-lakers-highlights-video-las-vegas-lebron-james-kevin-durant-stephen-curry-lonzo-ball-kevon-looney-preseason-nba-2018-schedule/) |
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·query “2018 World Cup”

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| 2018 World Cup | |
| Lucene | PageRank |
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·query “North Korea”

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| North Korea | |
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·query “Hurricane Florence”

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| Hurricane Florence | |
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·query “Paul Allen”

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| Paul Allen | |
| Lucene | PageRank |
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1. An overlap graph

|  |  |
| --- | --- |
| Query | Overlap amount |
| Donald Trump | 0 |
| LA Lakers | 0 |
| Star Wars | 0 |
| Lebron James | 0 |
| 2018 World Cup | 0 |
| North Korea | 0 |
| Hurricane Florence | 0 |
| Paul Allen | 0 |



Because there is no overlap for the 8 queries. So the overlap graph is above.