

## Homework 4: Comparing Search Engine Ranking Algorithms

### Part1: Steps you followed to complete this assignment

#### Step 1: indexing HTML files in Solr

1.Download Solr-7.7.2

2.Start the Solr server, cd into solr-7.7.2 folder and enter the command: **bin/solr start**

3.Create a new core and the core name is hw4solrcore using the command:

**bin/solr create -c hw4solrcore**

4.Download html files from folder of **Los Angeles Times**, since USC ID ends with 61

5.Index html pages and enter the command:

**bin/post -c hw4solrcore -filetypes html /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/**

6.Check the Solr UI and see if the files have gotten indexed. Open the browser and go to

<http://localhost:8983/solr/>. Select the core “**hw4solrcore**” from the dropdown.

Picture 1: initialize Solr UI

7. stop the Solr server and enter the command: **bin/solr stop -all**

#### Step2: set up apache server, php environment and solr-php-client

1.Start apache server and enter the command: **sudo apachectl start**

2.Check the file **/etc/apache2/httpd.conf/httpd.conf** and see my default root directory

**/Library/WebServer/Documents**

3.Open the browser and go to **http://localhost/hw4** to see my index.php

4.Start php environment, delete the “#” before

**LoadModule php5\_module libexec/apache2/libphp5.so** in httpd.conf file

5. Restart the apache server and enter the command: **sudo apachectl restart**

6. Download solr-php-client, unzip it, then put all the file in the root directory of apache server.

7. Stop the apache server and enter the command: **sudo apachectl stop**

#### **Step3: generate edgeList.txt**

1. Download JSoup.jar to external library of EdgeList.java

2. Build a map whose key is the url and value is the id from the file **URLtoHTML\_latimes\_news.csv**

3. Extract all the outgoing links by JSoup's function

4. Add the outgoing link and its id as a edge to the edge list if map contains this outgoing link

5. Save all edges to edgeList.txt

#### **Step4: generate external\_pageRankFile.txt**

1. Compute page rank using the following parameters: **alpha=0.85, personalization=None, max\_iter=30, tol=1e-6, nstart=None, weight='weight', dangling=None**

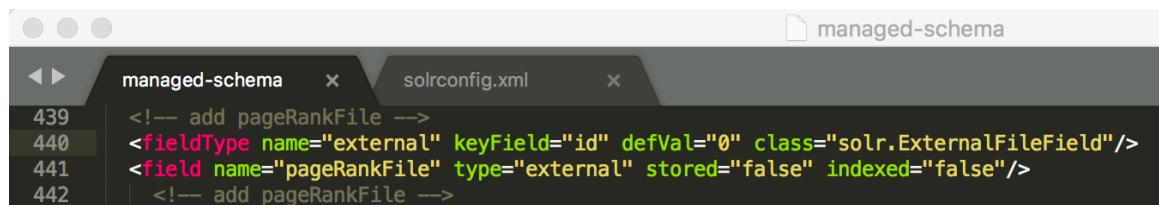
2. Run pageRank.py and enter the command , then generate external\_pageRankFile.txt

3. Place the **external\_pageRankFile** under

/Users/suguo/Desktop/CSCI572/hw4/solr-7.7.2/server/solr/hw4solrcore/data

4. Add the field in the **managed-schema**

```
<fieldType name="external" keyField="id" defVal="0" class="solr.ExternalFileField"/>
<field name="pageRankFile" type="external" stored="false" indexed="false"/>
```

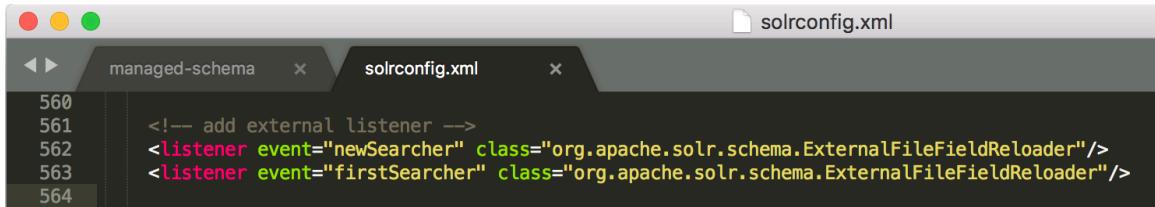


```
439 <!-- add pageRankFile -->
440 <fieldType name="external" keyField="id" defVal="0" class="solr.ExternalFileField"/>
441 <field name="pageRankFile" type="external" stored="false" indexed="false"/>
442 <!-- add pageRankFile -->
```

**Picture 2: managed-schem**

5. Define these listeners within the <query> element in the **solrconfig.xml** file

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



```
560      <!-- add external listener -->
561      <listener event="newSearcher" class="org.apache.solr.schema.ExternalFileFieldReloadListener"/>
562      <listener event="firstSearcher" class="org.apache.solr.schema.ExternalFileFieldReloadListener"/>
563
564
```

**Picture 3: solrconfig.xml**

6.Reload the index, by going to the Solr Dashboard UI -> Core Admin and clicking on the “Reload” button.

#### **Step5: implement index.php**

1.Set the parameters of Lucene and PageRank algorithm:

lucene: fl: title,og\_url,og\_description,id

pageRank: fl: title,og\_url,og\_description,id; sort: pageRankFile desc

2.Send the request to http://localhost, port: 8983, path: /solr/hw4solrcore

3.Get the response and show 4 fields in html: title(or NA), url, description(or NA), id

#### **Step6: search the query**

Search the query “Cannes” for Lucene and PageRank algorithm

Solr

Request-Handler (qt)  
/select

common  
q Cannes

fq  
sort  
start, rows  
0 10

f1  
title,og\_url,og\_description,id  
df  
Raw Query Parameters  
key1=val1&key2=val2  
wt  
-----  
 indent off  
 debugQuery  
 dismax  
 edismax  
 hl  
 facet  
 spatial  
 spellcheck

```
{
  "responseHeader": {
    "status": 0,
    "QTime": 1,
    "params": {
      "q": "Cannes",
      "f1": "title,og_url,og_description,id",
      "_": "1586405843858"
    }
  },
  "response": {
    "numFound": 144,
    "start": 0,
    "docs": [
      {
        "id": "/Users/suguo/Desktop/CSCI572/hw4/crawl_data/570906ea-4a63-47eb-8982-b1d1c84c96dd.html",
        "title": "[Cannes Film Festival - Los Angeles Times]",
        "og_url": "https://www.latimes.com/topic/cannes-film-festival"
      },
      {
        "id": "/Users/suguo/Desktop/CSCI572/hw4/crawl_data/26ca60fd-0748-a569-648aa2ff5a2.html",
        "title": "[Cannes: Times critics on everything you need to know about this year's festival - Los Angeles Times]",
        "og_description": "[The 72nd Festival de Cannes featured new films by Quentin Tarantino and Terrence Malick, opened with J",
        "og_url": "https://www.latimes.com/entertainment/movies/la-et-mn-cannes-wrap-critics-conversation-20190526-story.html"
      },
      {
        "id": "/Users/suguo/Desktop/CSCI572/hw4/crawl_data/d0b46307-f1ca-41b0-b801-dabbd9fc99814.html",
        "title": "[Cannes 2015: The full list of winners - Los Angeles Times]",
        "og_description": "[Director Jacques Audiard's film \"Cheyanan,\" a drama about three Tamil exiles trying to reconstruct th",
        "og_url": "https://www.latimes.com/entertainment/movies/movienow/la-et-mn-cannes-2015-winners-20150524-story.html"
      },
      {
        "id": "/Users/suguo/Desktop/CSCI572/hw4/crawl_data/b418851c-6897-4f78-bfcd-9c38b7154d7b.html",
        "title": "[Cannes 2015: The full list of winners - Los Angeles Times]",
        "og_description": "[History was made and history repeated itself, albeit with a wicked twist, when Bong Joon-ho's \"Parasit",
        "og_url": "https://www.latimes.com/entertainment/movies/movienow/la-et-mn-cannes-film-festival-award-winners-20190525-story.html"
      },
      {
        "id": "/Users/suguo/Desktop/CSCI572/hw4/crawl_data/643e0056-5f91-4bc7-946a-2a71ad7cae42.html",
        "title": "[One thing the Cannes Film Festival jury got right: Bong Joon-ho's \"Parasite\" victory - Los Angeles Times]",
        "og_description": "[Times critic Justin Chang is filing dispatches from the 72nd Cannes Film Festival, which ran May 14-25",
        "og_url": "https://www.latimes.com/entertainment/movies/la-et-mn-parasite-atlantics-awards-20190525-story.html"
      },
      {
        "id": "/Users/suguo/Desktop/CSCI572/hw4/crawl_data/643a9a12-ce31-41b6-9f8f-f9359d9a7e6.html",
        "title": "[Quentin Tarantino gets testy at Cannes over question about women's roles in his films - Los Angeles Times]",
        "og_description": "[There were plenty of hard questions Quentin Tarantino could have faced as he greeted reporters for the",
        "og_url": "https://www.latimes.com/entertainment/movies/la-et-mn-cannes-once-upon-a-time-in-hollywood-20190522-story.html"
      },
      {
        "id": "/Users/suguo/Desktop/CSCI572/hw4/crawl_data/ae7753de-e381-4fe6-8ad7-9fb75ea307d1.html",
        "title": "[At Cannes, genre filmmaking from 'Parasite' to 'The Wild Goose Lake' turns heads - Los Angeles Times]",
        "og_description": "[Times critic Justin Chang is filing regular dispatches from the 72nd annual Cannes Film Festival, whic",
        "og_url": "https://www.latimes.com/entertainment/movies/la-ca-mn-cannes-genre-parasite-wild-goose-lake-tarantino-20190522-story.html"
      },
      {
        "id": "/Users/suguo/Desktop/CSCI572/hw4/crawl_data/6c8bb62d-9a2e-4eb1-9e39-0702fc0a02bb.html",
        "title": "[Review: Abdellatif Kechiche's 'Mektoub, My Love' Intermezzo' is the disaster of the Cannes Film Festival - Los",
        "og_description": "[Times critic Justin Chang is filing regular dispatches from the 72nd annual Cannes Film Festival, whic",
        "og_url": "https://www.latimes.com/entertainment/movies/la-et-mn-cannes-mektoub-my-love-intermezzo-abdellatif-kechiche-20190522-story.html"
      },
      {
        "id": "/Users/suguo/Desktop/CSCI572/hw4/crawl_data/24290574-b025-4e8f-bdfb-762f4a0d7fa6.html",
        "title": "[Quentin Tarantino shocks Cannes again with epic 'Once Upon a Time ... in Hollywood' - Los Angeles Times]",
        "og_description": "[Times critic Justin Chang is filing regular dispatches from the 72nd annual Cannes Film Festival, whic",
        "og_url": "https://www.latimes.com/entertainment/movies/la-et-mn-quentin-tarantino-once-upon-a-time-in-hollywood-20190522-story.html"
      },
      {
        "id": "/Users/suguo/Desktop/CSCI572/hw4/crawl_data/92b6b866-e668-45ef-aee6-093cf812282d.html",
        "title": "[Robert Eggers, director of the smart and scary 'The Lighthouse,' sees comfort in horror - Los Angeles Times]",
        "og_description": ["\"The Witch\" director Robert Eggers' eerie new movie \"The Lighthouse,\" with Robert Pattinson and Wi",
        "og_url": "https://www.latimes.com/entertainment/movies/la-et-mn-cannes-robert-eggers-the-lighthouse-robert-pattinson-20190522-story.html"
      }
    ]
  }
}
```

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Picture 4: Solr UI for query “Cannes” and Lucene algorithm

The screenshot shows the Solr UI interface. On the left, there's a sidebar with various navigation links like Dashboard, Logging, Core Admin, Java Properties, Thread Dump, and several sections under 'hw4solrcore'. The 'Query' section is currently selected. In the main area, there's a 'Request-Handler (qt)' dropdown set to '/select'. The 'q' field contains 'Cannes'. Below it, there's a 'fq' field, a 'sort' dropdown set to 'pageRankFile desc', and a 'start, rows' input field with '0' and '10' respectively. A 'Raw Query Parameters' field contains 'key1=val1&key2=val2'. There are also checkboxes for 'wt' (set to 'json'), 'indent off', 'debugQuery', 'dismax', 'edismax', 'hl', 'facet', 'spatial', and 'spellcheck'. At the bottom of the query panel is a blue 'Execute Query' button. To the right of the query panel is a large text area displaying the JSON response from the Solr server. The response header includes 'status': 10, 'QTime': 1, and 'params' with 'q': 'Cannes', 'fl': 'title,og\_url,og\_description,id', 'sort': 'pageRankFile desc', and '\_': '1586405843958'. The 'response' object shows 144 results, starting at index 0. Each result is a document with fields like id, title, og\_description, and og\_url, corresponding to news articles about Cannes.

**Picture 5: Solr UI for query “Cannes” and PageRank algorithm**

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

PageRank is mainly based on how many external links points to the webpage. The more external links point to the web page, the more important the web page is. Thus, webpages with a larger number of external links that point to this page have a higher PageRank values than others.

## Part 3: Document the flow for any single query using screenshots:

Screenshot: 1. initial page where you enter the query in input box; 2. page which shows the results for Lucene(Default); 3. page which shows the results for PageRank; 4. the actual webpage that opens when clicking on one of the result's link.

1.query: Cannes

Search:   Lucene  PageRank

## Picture 22: initial page for query “Cannes”

Search: Cannes  Lucene  PageRank

Results 1 – 10 of 144:

1. title Cannes Film Festival – Los Angeles Times  
url <https://www.latimes.com/topic/cannes-film-festival>  
description NA  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/570906ea-4a63-47eb-8982-b1d1c84c96dd.html
2. title Cannes: Times critics on everything you need to know about this year's festival – Los Angeles Times  
url <https://www.latimes.com/entertainment/movies/la-et-mn-cannes-wrap-critics-conversation-20190526-story.html>  
description The 72nd Festival de Cannes featured new films by Quentin Tarantino and Terrence Malick, opened with Jim Jarmusch's "The Dead Don't Die" and ended with the Palme d'Or going to "Parasite," a thriller directed by South Korean filmmaker Bong Joon-ho.  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/26ca60fd-075d-428a-a569-648aa22f54a2.html
3. title Cannes 2016: The full list of winners – Los Angeles Times  
url <https://www.latimes.com/entertainment/movies/moviesnow/la-et-mn-cannes-2016-winners-20150524-story.html>  
description Director Jacques Audiard's film "Dheepan," a drama about three Tamil exiles trying to reconstruct their lives in France, has won the top prize at the Cannes Film Festival.  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/d0b46307-f1ca-41b0-b801-dabbd9c99814.html
4. title Bong Joon-ho's 'Parasite' and Mati Diop's 'Atlantics' make history at Cannes Film Festival – Los Angeles Times  
url <https://www.latimes.com/entertainment/movies/la-et-mn-cannes-film-festival-award-winners-20190525-story.html>  
description History was made and history repeated itself, albeit with a wicked twist, when Bong Joon-ho's "Parasite" won the Festival de Cannes' Palme d'Or on Saturday night.  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/b418851c-6897-47f8-bfcd-9c38b715ad7b.html
5. title One thing the Cannes Film Festival jury got right: Bong Joon-ho's 'Parasite' victory – Los Angeles Times  
url <https://www.latimes.com/entertainment/movies/la-et-mn-cannes-parasite-atlantis-awards-20190526-story.html>  
description Times critic Justin Chang is filing dispatches from the 72nd Cannes Film Festival, which runs May 14–25 in France.  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/64e00656-5f91-4bc7-946a-2871ad7cae42.html
6. title Quentin Tarantino gets testy at Cannes over question about women's roles in his films – Los Angeles Times  
url <https://www.latimes.com/entertainment/movies/la-et-mn-cannes-once-upon-a-time-in-hollywood-20190522-story.html>  
description There were plenty of hard questions Quentin Tarantino could have faced but he greeted reporters for the first time following the Cannes premiere of "Once Upon a Time ... in Hollywood."  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/643a9a12-c031-41b6-9fbf-f9359da7a5e6.html
7. title At Cannes, genre filmmaking from 'Parasite' to 'The Wild Goose Lake' turns heads – Los Angeles Times  
url <https://www.latimes.com/entertainment/movies/la-ca-mn-cannes-genre-parasite-wild-goose-lake-tarantino-20190522-story.html>  
description Times critic Justin Chang is filing regular dispatches from the 72nd annual Cannes Film Festival, which runs through Saturday in France.  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/ae77536e-e381-4fe6-8ad7-9fb75ea307d1.html
8. title Review: Abdellatif Kechiche's 'Mektoub, My Love: Intermezzo' is the disaster of the Cannes Film Festival – Los Angeles Times  
url <https://www.latimes.com/entertainment/movies/la-et-mn-cannes-mektoub-my-love-intermezzo-abdellatif-kechiche-20190523-story.html>  
description Times critic Justin Chang is filing regular dispatches from the 72nd Cannes Film Festival, which runs May 14–25 in France.  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/6c8bb62d-9a2e-4eb1-9e39-0702f4ca02bb.html
9. title Quentin Tarantino shocks Cannes again with epic 'Once Upon a Time ... in Hollywood' – Los Angeles Times  
url <https://www.latimes.com/entertainment/movies/la-et-mn-cannes-quentin-tarantino-once-upon-a-time-in-hollywood-20190521-story.html>  
description Times critic Justin Chang is filing regular dispatches from the 72nd annual Cannes Film Festival, which runs May 14–25 in France.  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/24290574-b025-4e8f-bdfb-76274a0d7fa6.html
10. title Robert Eggers, director of the smart and scary 'The Lighthouse,' sees comfort in horror – Los Angeles Times  
url <https://www.latimes.com/entertainment/movies/la-et-mn-cannes-robert-eggers-the-lighthouse-robert-pattinson-20190524-story.html>  
description "The Witch" director Robert Eggers' eerie new movie "The Lighthouse," with Robert Pattinson and Willem Dafoe, caused a sensation at the Cannes Film Festival.  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/92b6b8e6-e668-45ef-aee6-093cf812282d.html

## Picture 23: Lucene results for query “Cannes”

Search: Cannes  Lucene  PageRank

Results 1 – 10 of 144:

1. title HTML Sitemap – Los Angeles Times  
url <https://www.latimes.com/sitemap>  
description NA  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/e998ba09-d6d1-43c2-bcf8-f4f5ea4ceb7.html
2. title Por fin llega "Joker". Aquí un resumen de todo el drama que ha provocado – Los Angeles Times  
url <https://www.latimes.com/espanol/entretenimiento/articulo/2019-10-04/por-fin-llega-joker-aqui-un-resumen-de-todo-el-drama-que-ha-provocado>  
description "Joker", la nueva historia de origen villano de Warner Bros. protagonizada por Joaquin Phoenix, ha suscitado mucho interés y controversia.  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/1028fd3c-2c92-4757-9dfc-72c48b76c54a.html
3. title Four documentaries to watch as the race to the Oscars begins – Los Angeles Times  
url <https://www.latimes.com/entertainment-arts/movies/story/2019-11-08/documentaries-apollo-11-the-cave-sea-of-shadows-honeyland>  
description The Cave,'Apollo 11,' Honeyland' and 'Sea of Shadows' explore vastly different worlds with equal intensity  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/8311c79f-826e-47d3-9120-77a6307aa7f2.html
4. title Chloe Sevigny's five favorite frocks – Los Angeles Times  
url <https://www.latimes.com/lifestyle/gallery/chloe-sevignys-five-favorite-frocks>  
description Actor-director Chloe Sevigny recaps some of her most memorable red-carpet moments.  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/67366330-8ccc-4ccf-ba43-b742cce044d7.html
5. title Film Festivals – Los Angeles Times  
url <https://www.latimes.com/topic/film-festivals>  
description Los Angeles Times coverage of film festivals, including Toronto, Telluride, Sundance, Cannes and more.  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/dff198af-5e51-4edf-af23-054ad64b2616.html
6. title Cannes Film Festival – Los Angeles Times  
url <https://www.latimes.com/topic/cannes-film-festival>  
description NA  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/570906ea-4a63-47eb-8982-b1d1c84c96dd.html
7. title Genaro Molina – Los Angeles Times  
url <https://www.latimes.com/people/genaro-molina>  
description NA  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/c03e849d-711d-420b-9ae4-cb555cbc957c.html
8. title Whitney Houston's best friend reveals their lesbian affair – Los Angeles Times  
url <https://www.latimes.com/entertainment-arts/music/story/2019-11-06/whitney-houston-lesbian-relationship-robyn-crawford>  
description Robyn Crawford, Whitney Houston's best friend for years, says in a new memoir that they had a physical relationship — until the late singer got a record deal.  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/0d36326f-ea41-46b1-adf2-erc06696e8e0.html
9. title As Apple, Disney and HBO start streaming, how will movies change? – Los Angeles Times  
url <https://www.latimes.com/entertainment-arts/movies/story/2019-10-31/apple-disney-hbo-max-streaming-movies>  
description As new players like Apple, Disney and HBO bring their firepower to the streaming wars, many are wondering what implications will be for movies.  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/3553f55e-a7a7-41bf-aae2-bccca7bb1c30.html
10. title Column Fast fashion is hurting the planet, and you can stop it – Los Angeles Times  
url <https://www.latimes.com/opinion/story/2019-09-17/patt-morrison-dana-thomas-fast-fashion-environment>  
description Did you know it takes 5,000 gallons of water to make a T-shirt and jeans? Patt Morrison talks with Dana Thomas about her book "Fashionopolis."  
id /Users/suguo/Desktop/CSCI572/hw4/crawl\_data/46465c76-e46f-4374-96dd-74492755f261.html

## Picture 24: PageRank results for query “Cannes”

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One thing the Cannes Film Festival [shouldn't do](#) is let the 'Parasite' victory

May 26, 2019

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Picture 25: actual webpage - <https://www.latimes.com/topic/cannes-film-festival>

**Part 4: A table containing list of URLs of the top ten results produced by both ranking methods for each query. The blue link is the overlapped link between two ranking methods.**

1.query: Cannes

#	Lucene	PageRank
1	<a href="https://www.latimes.com/topic/cannes-film-festival">https://www.latimes.com/topic/cannes-film-festival</a>	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	<a href="https://www.latimes.com/topic/film-festivals">https://www.latimes.com/topic/film-festivals</a>
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-goose-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	<a href="https://www.latimes.com/entertainment/movies/la-et-mn-cannes-robert-eggers-the-lighthouse-robert-pattinson-20190524-story.html">https://www.latimes.com/entertainment/movies/la-et-mn-cannes-robert-eggers-the-lighthouse-robert-pattinson-20190524-story.html</a>	<a href="https://www.latimes.com/opinion/story/2019-09-17/patt-morrison-dana-thomas-fast-fashion-environment">https://www.latimes.com/opinion/story/2019-09-17/patt-morrison-dana-thomas-fast-fashion-environment</a>
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2.query: Congress

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

9	<a href="https://www.latimes.com/politics/la-na-pol-congress-mueller-pressure-impeachment-20190529-story.html">https://www.latimes.com/politics/la-na-pol-congress-mueller-pressure-impeachment-20190529-story.html</a>	<a href="https://www.latimes.com/opinion/story/2019-11-08/impeachment-trump-republicans-toomey">https://www.latimes.com/opinion/story/2019-11-08/impeachment-trump-republicans-toomey</a>
10	<a href="https://www.latimes.com/politics/la-pol-ca-richest-in-congress-darrell-issa-story.html">https://www.latimes.com/politics/la-pol-ca-richest-in-congress-darrell-issa-story.html</a>	<a href="https://www.latimes.com/politics/story/2019-11-08/alexander-vindman-fiona-hill-impeachment-transcripts">https://www.latimes.com/politics/story/2019-11-08/alexander-vindman-fiona-hill-impeachment-transcripts</a>

3.query: Democrats

#	Lucene	PageRank
1	<a href="https://www.latimes.com/politics/story/2019-11-07/house-democrats-subpoena-mick-mulvaney-in-impeachment-probe">https://www.latimes.com/politics/story/2019-11-07/house-democrats-subpoena-mick-mulvaney-in-impeachment-probe</a>	<a href="https://www.latimes.com/california">https://www.latimes.com/california</a>
2	<a href="https://www.latimes.com/opinion/story/2019-11-05/impeachment-donald-trump-democrats-political-cost-elections">https://www.latimes.com/opinion/story/2019-11-05/impeachment-donald-trump-democrats-political-cost-elections</a>	<a href="https://www.latimes.com/opinion">https://www.latimes.com/opinion</a>
3	<a href="https://www.latimes.com/politics/story/2019-11-03/iowa-democrats-candidate-beat-trump">https://www.latimes.com/politics/story/2019-11-03/iowa-democrats-candidate-beat-trump</a>	<a href="https://www.latimes.com/politics">https://www.latimes.com/politics</a>
4	<a href="https://www.latimes.com/politics/story/2019-10-17/democrats-quick-impeachment-timing-complicated">https://www.latimes.com/politics/story/2019-10-17/democrats-quick-impeachment-timing-complicated</a>	<a href="https://www.latimes.com/politics/story/2019-11-08/michael-bloomberg-files-papers-for-2020-democratic-presidential-primary">https://www.latimes.com/politics/story/2019-11-08/michael-bloomberg-files-papers-for-2020-democratic-presidential-primary</a>
5	<a href="https://www.latimes.com/politics/story/2019-10-08/impeachment-trump-democrats-whistleblower-identity-testimony">https://www.latimes.com/politics/story/2019-10-08/impeachment-trump-democrats-whistleblower-identity-testimony</a>	<a href="https://www.latimes.com/politics/story/2019-11-08/democratic-primary-debate-moves-from-ucla-to-loyola-marymount-university">https://www.latimes.com/politics/story/2019-11-08/democratic-primary-debate-moves-from-ucla-to-loyola-marymount-university</a>
6	<a href="https://www.latimes.com/politics/story/2019-09-24/democrats-and-pelosi-appear-close-to-tipping-point-on-impeachment">https://www.latimes.com/politics/story/2019-09-24/democrats-and-pelosi-appear-close-to-tipping-point-on-impeachment</a>	<a href="https://www.latimes.com/politics/story/2019-11-08/elizabeth-warren-used-bare-knuckle-tactics-to-take-down-an-obama-nominee">https://www.latimes.com/politics/story/2019-11-08/elizabeth-warren-used-bare-knuckle-tactics-to-take-down-an-obama-nominee</a>
7	<a href="https://www.latimes.com/politics/story/2019-09-29/trump-allies-and-democrats-reveal-the-deep-divisions-over-impeachment-inquiry">https://www.latimes.com/politics/story/2019-09-29/trump-allies-and-democrats-reveal-the-deep-divisions-over-impeachment-inquiry</a>	<a href="https://www.latimes.com/opinion/story/2019-11-09/elizabeth-warren-trump">https://www.latimes.com/opinion/story/2019-11-09/elizabeth-warren-trump</a>

8	<a href="https://www.latimes.com/politics/story/2019-08-01/assignment-post-debate-health-care-analysis-new-story">https://www.latimes.com/politics/story/2019-08-01/assignment-post-debate-health-care-analysis-new-story</a>	<a href="https://www.latimes.com/opinion/story/2019-11-09/devin-nunes-impeachment-witness-list">https://www.latimes.com/opinion/story/2019-11-09/devin-nunes-impeachment-witness-list</a>
9	<a href="https://www.latimes.com/nation/ct-democrats-economic-plan-20170824-story.html">https://www.latimes.com/nation/ct-democrats-economic-plan-20170824-story.html</a>	<a href="https://www.latimes.com/politics/story/2019-11-08/steve-bannon-roger-stone-trump-campaign-wikileaks">https://www.latimes.com/politics/story/2019-11-08/steve-bannon-roger-stone-trump-campaign-wikileaks</a>
10	<a href="https://www.latimes.com/california/story/2019-10-21/california-independent-voters-can-cast-ballots-for-democrats-not-trump-march-2020-primary">https://www.latimes.com/california/story/2019-10-21/california-independent-voters-can-cast-ballots-for-democrats-not-trump-march-2020-primary</a>	<a href="https://www.latimes.com/opinion/story/2019-11-08/impeachment-trump-republicans-toomey">https://www.latimes.com/opinion/story/2019-11-08/impeachment-trump-republicans-toomey</a>

#### 4.query: Patriot Movement

#	Lucene	PageRank
1	<a href="https://www.latimes.com/archives/la-xpm-2012-oct-23-la-me-russell-means-20121023-story.html">https://www.latimes.com/archives/la-xpm-2012-oct-23-la-me-russell-means-20121023-story.html</a>	<a href="https://www.latimes.com/environment">https://www.latimes.com/environment</a>
2	<a href="https://www.latimes.com/staff/megan-garvey">https://www.latimes.com/staff/megan-garvey</a>	<a href="https://www.latimes.com/science">https://www.latimes.com/science</a>
3	<a href="https://www.latimes.com/archives/la-xpm-2001-jun-10-mn-8792-story.html">https://www.latimes.com/archives/la-xpm-2001-jun-10-mn-8792-story.html</a>	<a href="https://www.latimes.com/california/story/2019-11-09/prop-187-anniversary-commemoration">https://www.latimes.com/california/story/2019-11-09/prop-187-anniversary-commemoration</a>
4	<a href="https://www.latimes.com/entertainment-arts/books/story/2019-10-25/shadowlands-anthony-mccann-oregon-standoff">https://www.latimes.com/entertainment-arts/books/story/2019-10-25/shadowlands-anthony-mccann-oregon-standoff</a>	<a href="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">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</a>
5	<a href="https://www.latimes.com/sports/highschool/story/2019-11-06/girls-tennis-southern-section-playoff-results-and-updated-pairings">https://www.latimes.com/sports/highschool/story/2019-11-06/girls-tennis-southern-section-playoff-results-and-updated-pairings</a>	<a href="https://www.latimes.com/entertainment-arts/story/2019-11-09/theater-things-to-do-in-la-this-week-nov-10-17-dr-seusss-how-the-grinch-stole-christmas-old-globe-key-largo-andy-garcia-geffen-playhouse">https://www.latimes.com/entertainment-arts/story/2019-11-09/theater-things-to-do-in-la-this-week-nov-10-17-dr-seusss-how-the-grinch-stole-christmas-old-globe-key-largo-andy-garcia-geffen-playhouse</a>
6	<a href="https://www.latimes.com/politics/story/2019-09-20/bernie-sanders-muslim-voters-2020">https://www.latimes.com/politics/story/2019-09-20/bernie-sanders-muslim-voters-2020</a>	<a href="https://www.latimes.com/food/story/2019-11-07/kung-pao-chicken-history-recipe-gong-bao">https://www.latimes.com/food/story/2019-11-07/kung-pao-chicken-history-recipe-gong-bao</a>
7	<a href="https://www.latimes.com/sports/nba/la-sp-nba-best-game-ever-20181222-story.html">https://www.latimes.com/sports/nba/la-sp-nba-best-game-ever-20181222-story.html</a>	<a href="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">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</a>

8	<a href="https://www.latimes.com/sports/highschool/story/2019-11-06/girls-tennis-southern-section-playoff-results-and-updated-pairings">https://www.latimes.com/sports/highschool/story/2019-11-06/girls-tennis-southern-section-playoff-results-and-updated-pairings</a>	<a href="https://www.latimes.com/topic/column-one">https://www.latimes.com/topic/column-one</a>
9	<a href="https://www.latimes.com/entertainment/movies/lat-mn-july-4-box-office-history-20180629-story.html">https://www.latimes.com/entertainment/movies/lat-mn-july-4-box-office-history-20180629-story.html</a>	<a href="https://www.latimes.com/topic/mexico-americas">https://www.latimes.com/topic/mexico-americas</a>
10	<a href="https://www.latimes.com/entertainment/movies/lat-mn-july-4-box-office-history-20180629-story.html">https://www.latimes.com/entertainment/movies/lat-mn-july-4-box-office-history-20180629-story.html</a>	<a href="https://www.latimes.com/topic/museums">https://www.latimes.com/topic/museums</a>

##### 5.query: Republicans

#	Lucene	PageRank
1	<a href="https://www.latimes.com/opinion/story/2019-10-23/house-republicans-storm-hearing-impeachment">https://www.latimes.com/opinion/story/2019-10-23/house-republicans-storm-hearing-impeachment</a>	<a href="https://www.latimes.com">https://www.latimes.com</a>
2	<a href="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">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</a>	<a href="https://www.latimes.com/opinion">https://www.latimes.com/opinion</a>
3	<a href="https://www.latimes.com/opinion/story/2019-11-08/impeachment-trump-republicans-toomey">https://www.latimes.com/opinion/story/2019-11-08/impeachment-trump-republicans-toomey</a>	<a href="https://www.latimes.com/opinion/la-letter-to-the-editor-htmlstory.html">https://www.latimes.com/opinion/la-letter-to-the-editor-htmlstory.html</a>
4	<a href="https://www.latimes.com/politics/story/2019-10-04/vulnerable-senate-republicans-impeachment">https://www.latimes.com/politics/story/2019-10-04/vulnerable-senate-republicans-impeachment</a>	<a href="https://www.latimes.com/opinion/story/2019-11-09/facebook-twitter-political-ads-lies">https://www.latimes.com/opinion/story/2019-11-09/facebook-twitter-political-ads-lies</a>
5	<a href="https://www.latimes.com/california/story/2019-10-16/california-republicans-democrats-wildfires-homelessness">https://www.latimes.com/california/story/2019-10-16/california-republicans-democrats-wildfires-homelessness</a>	<a href="https://www.latimes.com/opinion/story/2019-11-08/berlin-wall-30th-anniversary-cold-war-donald-trump">https://www.latimes.com/opinion/story/2019-11-08/berlin-wall-30th-anniversary-cold-war-donald-trump</a>
6	<a href="https://www.latimes.com/politics/story/2019-10-23/impeachment-deposition-room-stormed-by-republicans">https://www.latimes.com/politics/story/2019-10-23/impeachment-deposition-room-stormed-by-republicans</a>	<a href="https://www.latimes.com/politics/story/2019-11-08/elizabeth-warren-used-bare-knuckle-tactics-to-take-down-an-obama-nominee">https://www.latimes.com/politics/story/2019-11-08/elizabeth-warren-used-bare-knuckle-tactics-to-take-down-an-obama-nominee</a>
7	<a href="https://www.latimes.com/opinion/story/2019-09-17/california-republicans-trump-fundraising-president">https://www.latimes.com/opinion/story/2019-09-17/california-republicans-trump-fundraising-president</a>	<a href="https://www.latimes.com/opinion/story/2019-11-09/elizabeth-warren-trump">https://www.latimes.com/opinion/story/2019-11-09/elizabeth-warren-trump</a>

8	<a href="https://www.latimes.com/politics/story/2019-10-28/katie-hill-resignation-trump-obstacle-for-republicans">https://www.latimes.com/politics/story/2019-10-28/katie-hill-resignation-trump-obstacle-for-republicans</a>	<a href="https://www.latimes.com/opinion/story/2019-11-09/devin-nunes-impeachment-witness-list">https://www.latimes.com/opinion/story/2019-11-09/devin-nunes-impeachment-witness-list</a>
9	<a href="https://www.latimes.com/opinion/story/2019-11-06/trump-republicans-democrats-predictions-polling-2020">https://www.latimes.com/opinion/story/2019-11-06/trump-republicans-democrats-predictions-polling-2020</a>	<a href="https://www.latimes.com/opinion/story/2019-11-09/satuc-college-admissions">https://www.latimes.com/opinion/story/2019-11-09/satuc-college-admissions</a>
10	<a href="https://www.latimes.com/politics/story/2019-11-06/republicans-election-trump-candidate-loses-kentucky">https://www.latimes.com/politics/story/2019-11-06/republicans-election-trump-candidate-loses-kentucky</a>	<a href="https://www.latimes.com/opinion/story/2019-11-08/impeachment-trump-republicans-toomey">https://www.latimes.com/opinion/story/2019-11-08/impeachment-trump-republicans-toomey</a>

#### 6.query: Senate

#	Lucene	PageRank
1	<a href="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/politics/story/2019-11-07/gop-is-already-thinking-about-how-to-turn-a-senate-impeachment-trial-to-trumps-advantage</a>	<a href="https://www.latimes.com/">https://www.latimes.com/</a>
2	<a href="https://www.latimes.com/politics/story/2019-10-30/california-donors-spend-millions-on-2020-senate-races-across-the-country">https://www.latimes.com/politics/story/2019-10-30/california-donors-spend-millions-on-2020-senate-races-across-the-country</a>	<a href="https://www.latimes.com/opinion">https://www.latimes.com/opinion</a>
3	<a href="https://www.latimes.com/politics/story/2019-10-04/vulnerable-senate-republicans-impeachment">https://www.latimes.com/politics/story/2019-10-04/vulnerable-senate-republicans-impeachment</a>	<a href="https://www.latimes.com/california/story/2019-11-09/prop-187-anniversary-commemoration">https://www.latimes.com/california/story/2019-11-09/prop-187-anniversary-commemoration</a>
4	<a href="https://www.latimes.com/politics/la-na-pol-kavanaugh-hearing-20180927-story.html">https://www.latimes.com/politics/la-na-pol-kavanaugh-hearing-20180927-story.html</a>	<a href="https://www.latimes.com/opinion/la-letter-to-the-editor-htmlstory.html">https://www.latimes.com/opinion/la-letter-to-the-editor-htmlstory.html</a>
5	<a href="https://www.latimes.com/nation/la-pol-scotus-confirmation-votes-over-the-years-20181005-htmlstory.html">https://www.latimes.com/nation/la-pol-scotus-confirmation-votes-over-the-years-20181005-htmlstory.html</a>	<a href="https://www.latimes.com/opinion/story/2019-11-09/facebook-twitter-political-ads-lies">https://www.latimes.com/opinion/story/2019-11-09/facebook-twitter-political-ads-lies</a>
6	<a href="https://www.latimes.com/politics/story/2019-08-14/2020-senate-control-presidential-race">https://www.latimes.com/politics/story/2019-08-14/2020-senate-control-presidential-race</a>	<a href="https://www.latimes.com/opinion/story/2019-11-08/berlin-wall-30th-anniversary-cold-war-donald-trump">https://www.latimes.com/opinion/story/2019-11-08/berlin-wall-30th-anniversary-cold-war-donald-trump</a>
7	<a href="https://www.latimes.com/politics/story/2019-08-14/john-hickenlooper-quits-presidential-race-for-senate-run">https://www.latimes.com/politics/story/2019-08-14/john-hickenlooper-quits-presidential-race-for-senate-run</a>	<a href="https://www.latimes.com/politics/story/2019-11-08/elizabeth-warren-used-bare-knuckle-tactics-to-take-down-an-obama-nominee">https://www.latimes.com/politics/story/2019-11-08/elizabeth-warren-used-bare-knuckle-tactics-to-take-down-an-obama-nominee</a>

8	<a href="https://www.latimes.com/politics/story/2019-10-30/california-donors-spend-millions-on-2020-senate-races-across-the-country">https://www.latimes.com/politics/story/2019-10-30/california-donors-spend-millions-on-2020-senate-races-across-the-country</a>	<a href="https://www.latimes.com/opinion/story/2019-11-09/elizabeth-warren-trump">https://www.latimes.com/opinion/story/2019-11-09/elizabeth-warren-trump</a>
9	<a href="https://www.latimes.com/politics/la-na-pol-william-barr-senate-confirm-attorney-general-20190214-story.html">https://www.latimes.com/politics/la-na-pol-william-barr-senate-confirm-attorney-general-20190214-story.html</a>	<a href="https://www.latimes.com/opinion/story/2019-11-09/devin-nunes-impeachment-witness-list">https://www.latimes.com/opinion/story/2019-11-09/devin-nunes-impeachment-witness-list</a>
10	<a href="https://www.latimes.com/opinion/story/2019-10-15/wmcaleen-homeland-security-trump-nielsen-senate-acting-secretary">https://www.latimes.com/opinion/story/2019-10-15/wmcaleen-homeland-security-trump-nielsen-senate-acting-secretary</a>	<a href="https://www.latimes.com/opinion/story/2019-11-09/satuc-college-admissions">https://www.latimes.com/opinion/story/2019-11-09/satuc-college-admissions</a>

#### 7.query: Olympics 2020

#	Lucene	PageRank
1	<a href="https://www.latimes.com/sports/olympics/story/2019-08-15/2020-tokyo-olympics-searching-for-answers-amid-heat-wave">https://www.latimes.com/sports/olympics/story/2019-08-15/2020-tokyo-olympics-searching-for-answers-amid-heat-wave</a>	<a href="https://www.latimes.com/">https://www.latimes.com/</a>
2	<a href="https://www.latimes.com/sports/olympics">https://www.latimes.com/sports/olympics</a>	<a href="https://www.latimes.com/sitemap">https://www.latimes.com/sitemap</a>
3	<a href="https://www.latimes.com/people/david-wharton">https://www.latimes.com/people/david-wharton</a>	<a href="https://www.latimes.com/sports">https://www.latimes.com/sports</a>
4	<a href="https://www.latimes.com/people/david-wharton">https://www.latimes.com/people/david-wharton</a>	<a href="https://www.latimes.com/opinio">https://www.latimes.com/opinio</a>
5	<a href="https://www.latimes.com/sports/olympics/story/2019-10-16/2020-tokyo-olympics-marathon-sapporo-avoid-heat">https://www.latimes.com/sports/olympics/story/2019-10-16/2020-tokyo-olympics-marathon-sapporo-avoid-heat</a>	<a href="https://www.latimes.com/business">https://www.latimes.com/business</a>
6	<a href="https://www.latimes.com/sports/olympics/story/2019-07-31/deadly-heat-wave-2020-summer-olympics-tokyo">https://www.latimes.com/sports/olympics/story/2019-07-31/deadly-heat-wave-2020-summer-olympics-tokyo</a>	<a href="https://www.latimes.com/entertainment-arts">https://www.latimes.com/entertainment-arts</a>
7	<a href="https://www.latimes.com/sports/story/2019-11-05/ioc-anti-doping-2020-tokyo-olympics">https://www.latimes.com/sports/story/2019-11-05/ioc-anti-doping-2020-tokyo-olympics</a>	<a href="https://www.latimes.com/world-nation">https://www.latimes.com/world-nation</a>
8	<a href="https://www.latimes.com/sports/olympics/story/2019-10-10/naomi-osaka-chooses-japan-over-u-s-2020-tokyo-olympics">https://www.latimes.com/sports/olympics/story/2019-10-10/naomi-osaka-chooses-japan-over-u-s-2020-tokyo-olympics</a>	<a href="https://www.latimes.com/environment">https://www.latimes.com/environment</a>
9	<a href="https://www.latimes.com/sports/story/2019-07-23/tokyos-rough-road-to-2020-summer-olympics">https://www.latimes.com/sports/story/2019-07-23/tokyos-rough-road-to-2020-summer-olympics</a>	<a href="https://www.latimes.com/newsroom-directory">https://www.latimes.com/newsroom-directory</a>

10	<a href="https://www.latimes.com/people/david-wharton">https://www.latimes.com/people/david-wharton</a>	<a href="https://www.latimes.com/politics">https://www.latimes.com/politics</a>
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8.query: Stock

#	Lucene	PageRank
1	<a href="https://www.latimes.com/business/story/2019-11-06/uber-lock-up-period-ends-with-falling-stock-protests">https://www.latimes.com/business/story/2019-11-06/uber-lock-up-period-ends-with-falling-stock-protests</a>	<a href="https://www.latimes.com/">https://www.latimes.com/</a>
2	<a href="https://www.latimes.com/business/la-fi-lyft-stock-20190401-story.html">https://www.latimes.com/business/la-fi-lyft-stock-20190401-story.html</a>	<a href="https://www.latimes.com/business">https://www.latimes.com/business</a>
3	<a href="https://www.latimes.com/business/la-fi-hy-tesla-stock-20160518-snap-story.html">https://www.latimes.com/business/la-fi-hy-tesla-stock-20160518-snap-story.html</a>	<a href="https://www.latimes.com/business/real-estate">https://www.latimes.com/business/real-estate</a>
4	<a href="https://www.latimes.com/business/story/2019-11-06/uber-lock-up-period-ends-with-falling-stock-protests">https://www.latimes.com/business/story/2019-11-06/uber-lock-up-period-ends-with-falling-stock-protests</a>	<a href="https://www.latimes.com/business/real-estate/story/2019-11-09/hulu-looking-for-alaska-landry-bender">https://www.latimes.com/business/real-estate/story/2019-11-09/hulu-looking-for-alaska-landry-bender</a>
5	<a href="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/story/2019-11-09/stock-managers-who-played-defense-in-2019-are-left-scrambling-to-make-up-ground</a>	<a href="https://www.latimes.com/business/story/2019-11-08/trump-china-tariffs">https://www.latimes.com/business/story/2019-11-08/trump-china-tariffs</a>
6	<a href="https://www.latimes.com/business/la-fi-uber-ipostock-trading-price-20190510-story.html">https://www.latimes.com/business/la-fi-uber-ipostock-trading-price-20190510-story.html</a>	<a href="https://www.latimes.com/business/real-estate/story/2019-11-09/hot-property-very-brady-sale-malibu">https://www.latimes.com/business/real-estate/story/2019-11-09/hot-property-very-brady-sale-malibu</a>
7	<a href="https://www.latimes.com/business/story/2019-09-09/at-t-stock-surges-elliott-reveals-3-2-billion-stake">https://www.latimes.com/business/story/2019-09-09/at-t-stock-surges-elliott-reveals-3-2-billion-stake</a>	<a href="https://www.latimes.com/politics/story/2019-11-08/elizabeth-warren-used-bare-knuckle-tactics-to-take-down-an-obama-nominee">https://www.latimes.com/politics/story/2019-11-08/elizabeth-warren-used-bare-knuckle-tactics-to-take-down-an-obama-nominee</a>
8	<a href="https://www.latimes.com/business/la-fi-stock-market-status-update-20180209-story.html">https://www.latimes.com/business/la-fi-stock-market-status-update-20180209-story.html</a>	<a href="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">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</a>
9	<a href="https://www.latimes.com/business/la-fi-stock-market-correction-20180212-story.html">https://www.latimes.com/business/la-fi-stock-market-correction-20180212-story.html</a>	<a href="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/story/2019-11-09/stock-managers-who-played-defense-in-2019-are-left-scrambling-to-make-up-ground</a>

10	<a href="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/story/2019-11-09/stock-managers-who-played-defense-in-2019-are-left-scrambling-to-make-up-ground</a>	<a href="https://www.latimes.com/business/story/2019-11-08/gap-ceo-was-done-in-by-fashion-missteps-and-fading-brands">https://www.latimes.com/business/story/2019-11-08/gap-ceo-was-done-in-by-fashion-missteps-and-fading-brands</a>
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9.query: Virus

#	Lucene	PageRank
1	<a href="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/espanol/internacional/articulo/2019-11-09/monos-se-volvieron-inmunes-tras-inocularles-virus-del-ebola-con-mutacion</a>	<a href="https://www.latimes.com/terms-of-service">https://www.latimes.com/terms-of-service</a>
2	<a href="https://www.latimes.com/science/sciencenow/lasci-science-of-zika-five-ways-20160223-htmlstory.html">https://www.latimes.com/science/sciencenow/lasci-science-of-zika-five-ways-20160223-htmlstory.html</a>	<a href="https://www.latimes.com/espanol/">https://www.latimes.com/espanol/</a>
3	<a href="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/espanol/internacional/articulo/2019-11-09/monos-se-volvieron-inmunes-tras-inocularles-virus-del-ebola-con-mutacion</a>	<a href="https://www.latimes.com/science">https://www.latimes.com/science</a>
4	<a href="https://www.latimes.com/science/story/2019-10-21/virus-afm-illness-paralyzing-kids">https://www.latimes.com/science/story/2019-10-21/virus-afm-illness-paralyzing-kids</a>	<a href="https://www.latimes.com/espanol/internacional">https://www.latimes.com/espanol/internacional</a>
5	<a href="https://www.latimes.com/science/story/2019-10-21/virus-afm-illness-paralyzing-kids">https://www.latimes.com/science/story/2019-10-21/virus-afm-illness-paralyzing-kids</a>	<a href="https://www.latimes.com/espanol/deportes/articulo/2019-11-09/como-ser-campeon-de-league-of-legends">https://www.latimes.com/espanol/deportes/articulo/2019-11-09/como-ser-campeon-de-league-of-legends</a>
6	<a href="https://www.latimes.com/socal/daily-pilot/news/tn-dpt-me-west-nile-20170707-story.html">https://www.latimes.com/socal/daily-pilot/news/tn-dpt-me-west-nile-20170707-story.html</a>	<a href="https://www.latimes.com/business/story/2019-10-13/body-parts-harvesting-hinders-coroner-autopsies">https://www.latimes.com/business/story/2019-10-13/body-parts-harvesting-hinders-coroner-autopsies</a>
7	<a href="https://www.latimes.com/science/sciencenow/lasci-sn-acute-flaccid-myelitis-polio-20181017-story.html">https://www.latimes.com/science/sciencenow/lasci-sn-acute-flaccid-myelitis-polio-20181017-story.html</a>	<a href="https://www.latimes.com/espanol/mexico/articulo/2019-11-09/crean-en-mexico-plataforma-para-medir-impacto-ambiental-de-basura-electronica">https://www.latimes.com/espanol/mexico/articulo/2019-11-09/crean-en-mexico-plataforma-para-medir-impacto-ambiental-de-basura-electronica</a>
8	<a href="https://www.latimes.com/local/lanow/la-me-lnvirulent-newcastle-disease-outbreak-in-southern-california-20190607-story.html">https://www.latimes.com/local/lanow/la-me-lnvirulent-newcastle-disease-outbreak-in-southern-california-20190607-story.html</a>	<a href="https://www.latimes.com/espanol/internacional/articulo/2019-11-09/el-nuevo-mitsubishi-mirage-pudiera-arribar-a-mediados-del-proximo-ano">https://www.latimes.com/espanol/internacional/articulo/2019-11-09/el-nuevo-mitsubishi-mirage-pudiera-arribar-a-mediados-del-proximo-ano</a>
9	<a href="https://www.latimes.com/world-nation/story/2019-09-04/anti-vaxxers-helping-polio-comeback-pakistan">https://www.latimes.com/world-nation/story/2019-09-04/anti-vaxxers-helping-polio-comeback-pakistan</a>	<a href="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/espanol/internacional/articulo/2019-11-09/monos-se-volvieron-inmunes-tras-inocularles-virus-del-ebola-con-mutacion</a>

10	<a href="https://www.latimes.com/local/obituaries/la-me-deborah-asnis-20150921-story.html">https://www.latimes.com/local/obituaries/la-me-deborah-asnis-20150921-story.html</a>	<a href="https://www.latimes.com/espanol/internacional/articulo/2019-11-09/una-tortuga-tecnologica-para-detectar-microplasticos-en-los-oceanos">https://www.latimes.com/espanol/internacional/articulo/2019-11-09/una-tortuga-tecnologica-para-detectar-microplasticos-en-los-oceanos</a>
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**Part 5: An overlap graph showing the amount of overlap between the two ranking strategies for all queries.**

