# Assignment 4 Tianxin Zhou, Zhou631@usc.edu USCID: 7402563906

### Installation

- Step 1: Install solr 8.0 on Mac OS
  - a. Download solr 8.0 from <a href="http://lucene.apache.org/solr/mirrors-solr-latest-redir.html">http://lucene.apache.org/solr/mirrors-solr-latest-redir.html</a>
  - b. Unpack solr by using following commands: unzip -q solr-7.7.0.zip
  - c. Start solr by using bin/solr start
  - d. Create a new core, the core name is hw4 using the command: bin/solr create -c hw4
  - e. solr is host on localhost:8963/solr# and can be reached by web browser
  - f. Go to the Solr folder which is /Users/tianxin/Downloads/solr-8.0.0 on my laptop. To change the managed-schema as in the assignment required

### Step 2: Indexing

- a. Download zip file from <a href="https://drive.google.com/drive/u/0/folders/1EFkdy9cLjq0hNuC\_bR00U075djtvwrj7?usp=sharing">https://drive.google.com/drive/u/0/folders/1EFkdy9cLjq0hNuC\_bR00U075djtvwrj7?usp=sharing</a>. And I downloaded Yahoo as the requirement
- b. Unzip the data file and use the command: bin/post -c hw4 filetypes html /Users/tianxin/Downloads/Yahoo/yahoo/ to indexing yahoo news html

### solr-8.0.0 — -bash — 80×24 [Tianxins-MacBook-Pro:solr-8.0.0 tianxin\$ bin/post -c hw4 -filetypes html /Users/] tianxin/Downloads/Yahoo/yahoo/ java -classpath /Users/tianxin/Downloads/solr-8.0.0/dist/solr-core-8.0.0.jar -Da uto=yes -Dfiletypes=html -Dc=hw4 -Ddata=files -Drecursive=yes org.apache.solr.ut il.SimplePostTool /Users/tianxin/Downloads/Yahoo/yahoo/ SimplePostTool version 5.0.0 Posting files to [base] url http://localhost:8983/solr/hw4/update... Entering auto mode. File endings considered are html Entering recursive mode, max depth=999, delay=0s Indexing directory /Users/tianxin/Downloads/Yahoo/yahoo (8761 files, depth=0) POSTing file 5ca652a9-8f53-4b86-9e93-61b48de01cca.html (text/html) to [base]/ext POSTing file bc25727b-efdd-4a2f-9f99-660a8699546d.html (text/html) to [base]/ext POSTing file 8bfde0bd-9d2f-4faf-8b0d-eef27e9f619a.html (text/html) to [base]/ext ract POSTing file f9144040-8e27-4afe-af09-93e969693cba.html (text/html) to [base]/ext POSTing file 43a4778b-433a-485f-a876-235b5c491abb.html (text/html) to [base]/ext ract POSTing file 1c1a2d97-7608-4ff0-8658-4e89277d88ee.html (text/html) to [base]/ext POSTing file b617f8e7-1230-4cad-9cde-eeff86a2c52d.html (text/html) to [base]/ext

```
solr-8.0.0 — -bash — 80×24
POSTing file e3afac91-3c98-429d-8085-baa062164759.html (text/html) to [base]/ext
POSTing file f73a14f3-fca7-4245-9f03-5d7a792f1c4b.html (text/html) to [base]/ext
ract
POSTing file 142b17a8-4a3b-41ee-8849-d5de1834084a.html (text/html) to [base]/ext
POSTing file eafa89b9-ac33-4fc6-ad01-4c115630e8f0.html (text/html) to [base]/ext
POSTing file e0c723b1-0b52-4596-9162-251cbb46a5aa.html (text/html) to [base]/ext
ract
POSTing file 7fe58c33-0fda-4cc4-a698-353372aa736f.html (text/html) to [base]/ext
POSTing file 85bffe46-5d8c-4886-8f8f-14da84718d4c.html (text/html) to [base]/ext
POSTing file fcab4f49-cabd-43c4-a209-a25f29bb7bf9.html (text/html) to [base]/ext
POSTing file 3628a28f-2b12-4e83-adc3-a035d462e39d.html (text/html) to [base]/ext
POSTing file 08f17f80-b54d-4de8-b191-deef8c9dbb1a.html (text/html) to [base]/ext
ract
8761 files indexed.
COMMITting Solr index changes to http://localhost:8983/solr/hw4/update...
Time spent: 0:03:13.502
Tianxins-MacBook-Pro:solr-8.0.0 tianxin$
```

- c. Go to solr admin page and reload on core dashboard.
- Step 3: Setup PHP environment and application
  - a. Use homebrew to install <a href="mailto:php@7.2">php@7.2</a> by using then command: brew install <a href="mailto:php@7.2">php@7.2</a>
  - b. Start Apache by using command: sudo apachectl start
  - c. Go to /etc/apache2/ and find httpd.conf. uncomment the line: LoadModule php7\_module libexec/apache2/libphp7.so
  - d. Start with the sample code in the assignment pdf and code for displaying url, id, title, and description. Add radio buttons for two algorithm: lucene and pageRank
  - e. Add additional parameters: sort => pageRankFile.txt desc for pageRank
- Step 4: Generate Edge List
  - a. Use java to Create a directed graph using the mapping file and extracted URLs. Vertices in the graph are webpage files and detected edge between two files represent a link between two. Use Jsoup library and URLtoHTML\_yahoo\_news.csv for help.

b. Generate the Edgelist.txt

- Step 5: Generate external\_pageRankFile.txt
  - a. Download and install the NetworkX from <a href="http://networkx.github.io">http://networkx.github.io</a>
  - b. Write the program to computer page rank for each file by using
     G = nx.read\_edgelist("edgeList.txt",
     create\_using=nx.DiGraph())
     PR = nx.pagerank(G, alpha=0.85, personalization=None,
     max\_iter=30,tol=1e-06, nstart=None, weight='weight',
     dangling=None)
- Step 6: Modify managed-schema and solrconfig.xml
  - a. Open /Users/tianxin/Downloads/solr-8.0.0/server/solr/hw4/conf

  - d. Place the external-PageRankFile.txt in data file
  - e. Reload hw4 core again on solr admin.

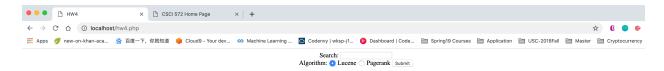
# Why some pages have higher PageRank values than others?

Explanation:

PageRank works by counting the number and quality of links to a page to determine a rough estimate of how important the website is. PageRank assigns a score to a web paged based on the number and quality of links to or from the page. So, in our case, PageRank algorithm uses edgelist.txt to compute the PageRank values. Thus, some pages have higher values if they are pointed by other high value pages. Thus, some pages have higher PageRank values than others

# Screenshots of documenting the flow for a single query (I use Venezuela here)

Initial page:



### Result from Lucene:

Search: Venezuela
Algorithm: • Lucene Pagerank Submit

### Results 1 - 10 of 126:

### 1. Title: Anti-Maduro protests continue in Venezuela

The: Agit: Maduro procests continue in venezuela

URL: https://www.yahoo.com/usw/ani-maduro-protests-continue-venezuela-slideshow-wp-132714046.html

ID: //disers/tianxin/Downloads/Yahoo/yahoo/d71c/38-9dth-4781-bc1b-46282cee5b5.html

Description: Opponents of President Nicolas Maduro staged stri-ma and roadblocks across Venezuela on Monday, May 15, to press for elections, sparking new unrest

2. Title: Venezuela braces for more protests after election
URL: https://www.yahoo.com/news/venezuela-braces-more-protests-election-slideshow-wp-143135783.html
ID: // Users/taixmi/Dow/hoads/yahoo/qahoo/2do/2do-3-4-cd-4781-a3e7-52d7ff12c1cl.html
Description: Venezuelan President Nicolas Maduro on Monday celebrated the election of a new legislative superbody that is expected to give the ruling Socialist Party sweeping powers and mocked U.S. criticism that the vote was an affront to
democracy. At least 10 people were killed on Sunday in protests against the unpopular Maduro, who in insists the new body known as the constituent assembly will bring peace after four months of protests that have killed more than 120 people. Countries across the Americas, as well as the European Union, denounced the creation of the assembly, which will have the power to rewrite the constitution.

3. Title: Power out, water scarce, looting: What is Trump administration's next move in Venezuela?
URL: https://news.yahoo.com/power-water-scarce-looting-venezuela-185817628.html
Dr. //Lesrs/tianxin/Downloads/Yahoo/yahoo/Yaboo/Y

5. Title: Engineer: Satellite suggests fire caused Venezuela outage
URL: https://news.yahoo.com/engineer-satellite-suggests-fire-caused-venezuela-outage-212757391.html
ID: //Jsers/tianxin/Downloads/Yahoo/yahoo/b6268ad3-95b1-49c0-a3df-4a3ff14b2ee6.html
Description: CARACAS, Venezuela (AP) — In the week since a massive blackout left millions in Venezuela without power, both the government and opposition have put forward disputing theories on what caused the outage without providing any evidence.

6. Title: Anti-Maduro protests continue in Venezuela
URL: https://www.yahoo.com/news/anti-maduro-protests-continue-venezuela-slideshow-wp-132714046.html
ID: //Lsers/tainari/Downloads/váhoo/yahoo/7a356840-cad8-4bfd-99e8-ae0b3a02dc/74.html
Description: Opponents of President Nicolas Maduro staged sit-ins and roadblocks across Venezuela on Monday, May 15, to press for elections, sparking new unrest.

7. Title: Anti-Maduro protests continue in Venezuela
URL: https://www.yaboo.com/news/anti-maduro-protests-continue-venezuela-slideshow-wp-132714046.html
ID: //Users/tiansim/Downloads/Yaboo/yaboo/ada/2a;74-dbcf-439c-9252-1a024620ea84.html
Description: Opponents of President Nicolas Maduro staged sit-ins and roadblocks across Venezuela on Monday, May 15, to press for elections, sparking new unrest.

URL: https://www.yalnoc.com/news/anti-madure-protests-continue-venezuela-slideshow-wp-132714046.html
ID: //lsers/tianxin/Downloads/Yalnoc/yalnoc/26985c5-a77a-4166-a19f-2758e38633e.html
Description: Opponents of President Nicolas Maduro staged sit-ins and roadolocks across Venezuela on Monday, May 15, to press for elections, sparking new unrest.

9. Title: Anti-Maduro protests continue in Venezuela
URL: https://www.yahoo.com/news/anti-maduro-protests-continue-venezuela-slideshow-wp-132714046.html
ID: //Lesrs/tiansim/Downloads/yahoo/yahoo/ffac4e68-c2a1-4a0e-a79e-36476f130048.html
Description: Opponents of President Nicolas Maduro staged sit-ins and roadblocks across Venezuela on Monday, May 15, to press for elections, sparking new unrest.

### 10. Title: Anti-Maduro protests continue in Venezuela

The: Attre-Binding Process Continue: In Standards (1982) (

## Result from PageRank:

Scarch: Venezuela
Algorithm: Lucene Pagerank Submit

### Results 1 - 10 of 126:

### 1. Title: Science | Yahoo News - Latest News & Headlines

URL: https://www.yahoo.com/news/science/
ID: //Josers/tianxin/Downloads/Yahoo/yahoo/7385d91-7903-4110-a92f-90faa0380179.html
Description: The latest news and headlines from Yahoo! News. Get breaking news stories and in-depth coverage with videos and photos

2. Title: How a CIA agent trained agents who found Soviet missiles in Cuba
URL: https://news.yahoo.com/operation-cobn-untold-story-cia-officer-trained-network-agents-found-soviet-missiles-cuba-100005794.html

| Dis. / Insertiation/Downloads/Yahooyahoo/fail/3094-669-0422-bal-36/d8l/14/f36.html
| Description: The canoe had been the idea of Tom Hewitt, the agents' case officer in the CIA's huge Miami station, where he waited for word of the mission. It would be Hewitt's job to guide their actions from afar, now that they were back in their

3. Title: PHOTOS: Malnourished Venezuelans hope urgently needed aid arrives soon
URL: https://news.yahoo.com/photos-malnourished-venezuelans-hope-urgently-needed-aid-arrives-soon-184505075.html
Dis. //diservitamin/Downloads/vahoo.yahoo/55584706-601a-4486e-a74-ffte/0797be56.html
Description: Yaneidi Guzman has lost a third of her weight over the past three years as Venezuela's economic collapse made food unaffordable and she now hopes the opposition will succeed in bringing urgently needed foreign aid to the South American country.

4. Title: Beto O'Rourke jumps into 2020 presidential race
URL: https://news.yahoo.com/beto--rourke-jumping-into-2020-presidential-race-235309920.html
ID: //Users/tianxin/Downloads/Yahoo/yahoo/0468db21-1d76-410d-830o-2fb2bcaff49c.html
Description: The former Texas congressman announced his candidacy on Thursday.

5. Title: Trump, a self-proclaimed champion of Americans detained abroad-quiet on former Marine held in Russia
URL: https://news.yahoc.com/trump-a-self/proclaimed-champion-of-americans-detained-abroad-quiet-on-former-marine-held-in-russia-130000990.html

ID: //disers/timexiin/Downloads/Yahocyahocy/Selfcras-626-44-49a-30-62-e74431 Ribbod hum?

Description: David Mellan, a lawyer who specializes in information and technology, was diving into books about Russian negotiation tactics and using Google Translate to glean clues about how his twin brother got wrapped up in what he views as a fabricated spyring scandal. Meanwhile, Paul Wheelan turned a year older

### 6. Title: The top 10 undercovered stories of 2016

The: In tag 10 unnercovered some of 2019

Wilk: https://www.yahoo.com/news/the-top-10-undercovered-stories-of-2016-100009854.html

ID: //users/tianxim/Downloads/Yahoo/yahoo/13944318-1147-4165-bc-40-blaas/3a4e-68/.html

Description: Big stories dominated the news in 2016 like no other year. Donald Trump won. The U.K. backed the Brexit. Right-wing populism surged around the globe. And more.

7. Title: Venezuela opposition calls nationwide strike against Maduro
URL: <a href="https://www.yahoo.com/news/maduro-urges-peaceful-opposition-vote-venezuela-012524217.html">https://www.yahoo.com/news/maduro-urges-peaceful-opposition-vote-venezuela-012524217.html</a>
ID: //Jsers/tianxiin/Downloads/Yahoo yahoo/821c/Toad-8186-4334-800b-67c884021a22.html
Description: Venezuela's opposition called a nationwide strike for Thursday to press President Nicolas Maduro to back off a rewriting of the constitution, ratcheting up tensions after an unofficial vote rejecting Maduro's plan and amid months of deadly protests. The strike call, issued on Monday, was part

### 8. Title: U.S. top court backs Trump on travel ban targeting Muslim-majority national

The: 3-stycout was fund on travel and ageing my assummation you was a second of the se

9. Title: The CIA's communications suffered a catastrophic compromise
URL: https://newsy.aphoo.com/ciae-communications-suffered-catastrophic-compromise-started-iran-090018710.html
IDs: //users/tainain/TDownloads/Yahoo/yahoo/88406-bea/884-094b-fil-dfl dds6304a66.html
Description: From around 2009 to 2013, the U.S. intelligence community experienced crippling intelligence failures related to its secret internet-based communications system, a key means for remote messaging between CIA officers and their sources.

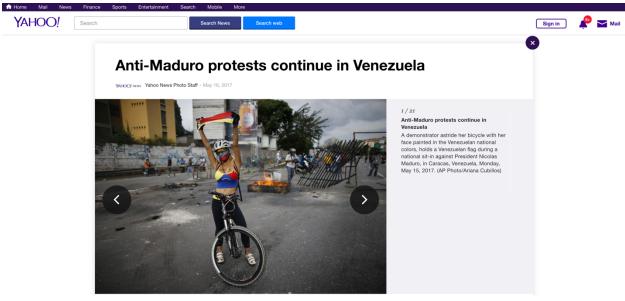
### 10. Title: In close House race, Republican Karen Handel gets help from Paul Ryan

The. In close from the component state in tuning goes neigh from each year. Bull-ryan-20451019 html

[Dr. Alger-Yanaxin Downloads Yahoo) yahoo 95137548-4564-4612-8604-99471 (Aff6ff63.html

[Description: The word "Trump" is conspicuously absent in Karen Handel's freet campaign against Democrat Jon Ossoff in Georgia's Sixth Congressional District.

# First link from Lucene result:



Tables of Top 10 results for each query by Lucene and PageRank

### 1. Venezuela

Lucene	PageRank
https://www.yahoo.com/news/anti- maduro-protests-continue-venezuela- slideshow-wp-132714046.html	https://www.yahoo.com/news/science/
https://www.yahoo.com/news/venezuela- braces-more-protests-election- slideshow-wp-143135783.html	https://news.yahoo.com/operation- cobra-untold-story-cia-officer- trained-network-agents-found- soviet-missiles-cuba-100005794.html
https://news.yahoo.com/power-water- scarce-looting-venezuela- 185817628.html	https://news.yahoo.com/photos- malnourished-venezuelans-hope- urgently-needed-aid-arrives-soon- 184505075.html
https://www.yahoo.com/news/anti- maduro-protests-continue-venezuela- slideshow-wp-132714046.html	https://news.yahoo.com/beto-o- rourke-jumping-into-2020- presidential-race-235309920.html
https://news.yahoo.com/engineer- satellite-suggests-fire-caused- venezuela-outage-212757391.html	https://news.yahoo.com/trump-a-selfproclaimed-champion-of-americans-detained-abroad-quiet-on-former-marine-held-in-russia-130000990.html

https://www.yahoo.com/news/anti-	https://www.yahoo.com/news/the-top-
maduro-protests-continue-venezuela-	10-undercovered-stories-of-2016-
slideshow-wp-132714046.html	100009854.html
https://www.yahoo.com/news/anti-	https://www.yahoo.com/news/maduro-
maduro-protests-continue-venezuela-	urges-peaceful-opposition-vote-
slideshow-wp-132714046.html	venezuela-012524217.html
https://www.yahoo.com/news/anti-	https://news.yahoo.com/u-top-court-
maduro-protests-continue-venezuela-	backs-trump-travel-ban-targeting-
slideshow-wp-132714046.html	142429044.html
https://www.yahoo.com/news/anti-maduro-protests-continue-venezuela-slideshow-wp-132714046.html	https://news.yahoo.com/cias- communications-suffered- catastrophic-compromise-started- iran-090018710.html
https://www.yahoo.com/news/anti-	https://www.yahoo.com/news/close-
maduro-protests-continue-venezuela-	house-race-republican-karen-handel-
slideshow-wp-132714046.html	gets-help-paul-ryan-220451019.html

# 2. Senate

Lucene	PageRank
https://www.yahoo.com/news/senate -skinny-repeal-obamacare-falls- apart-senate-floor-mccain- defects-072042708.html	https://www.yahoo.com/news/
https://www.yahoo.com/news/senate -judiciary-committee-vote- kavanaugh-slideshow-wp- 170920887.html	https://www.yahoo.com/news/originals/
https://www.yahoo.com/news/senate -judiciary-committee-vote- kavanaugh-slideshow-wp- 170920887.html	https://www.yahoo.com/news
https://www.yahoo.com/news/senate -judiciary-committee-vote- kavanaugh-slideshow-wp- 170920887.html	https://news.yahoo.com/russians- targeted-reagan-presidential-campaign- heres-cia-stop-100048764.html
https://www.yahoo.com/news/jeff- session-testifies-senate-hearing- slideshow-wp-191620787.html	https://www.yahoo.com/news/politics/
https://www.yahoo.com/news/protes ters-across-country-oppose-gops- slideshow-wp-133309283.html	https://www.yahoo.com/news/tagged/skulld uggery
https://www.yahoo.com/news/kavana ugh-ford-testify-senate- judiciary-slideshow-wp- 145913238.html	https://www.yahoo.com/news/topics
https://www.yahoo.com/news/paul- ryan-premature-say-whether-house- pass-senate-healthcare-bill- 174352395.html	https://news.yahoo.com/habitat-for-sale- an-oil-and-gas-group-calls-the-tune-at- the-interior-department-215244528.html
https://www.yahoo.com/news/cbo- likely-say-millions-lose- coverage-senate-health-care-bill- 215135603.html	https://news.yahoo.com/maverick- republican-william-weld-looking-run- malignant-narcissist-trump- 142709863.html

https://www.yahoo.com/news/trump-	https://www.yahoo.com/news/politics
senate-republicans-look-like-	
fools-dont-dump-60-vote-rule-	
135937103.html	

# 3. Democrats

Lucene	PageRank
https://www.yahoo.com/news/midterms/house	https://www.yahoo.com/news/
https://www.yahoo.com/news/midterms/house/seat	https://www.yahoo.com/news/originals/
https://www.yahoo.com/news/democrats- rolling-2018-midterms-message-next-week- 191517316.html	https://www.yahoo.com/news
https://www.yahoo.com/news/will- democrats-filibuster-gorsuch-republicans- dont-think-so-111241581.html	https://news.yahoo.com/russians- targeted-reagan-presidential- campaign-heres-cia-stop- 100048764.html
https://www.yahoo.com/news/white-house- tries-tag-democrats-blame-possible- shutdown-203618659.html	https://news.yahoo.com/ann- coulter-lunatic-trump-challenged- 2020-right-165049018.html
https://www.yahoo.com/news/democrats- hope-better-deal-message-will-resonate- 190849661.html	https://www.yahoo.com/news/politics/
https://www.yahoo.com/news/democrats- 2018-many-candidates-many-candidates- 162905320.html	https://news.yahoo.com/habitat- for-sale-an-oil-and-gas-group- calls-the-tune-at-the-interior- department-215244528.html
https://www.yahoo.com/news/democrats-vow-fight-lifetime-keep-brett-kavanaugh-off-supreme-court-051334537.html	https://news.yahoo.com/maverick- republican-william-weld-looking- run-malignant-narcissist-trump- 142709863.html
https://www.yahoo.com/news/mcconnell- plan-fails-will-democrats-republicans- work-together-fix-health-care- 220450895.html	https://www.yahoo.com/news/politics
https://www.yahoo.com/news/democrats- wrest-power-away-republicans-state-level- 183309710.html	https://news.yahoo.com/democrat- predicts-house-will-get-trumps- tax-returns-complications- 142301949.html

# 4. Republicans

Lucene	PageRank
https://www.yahoo.com/news/midte rms/house	https://www.yahoo.com/news/
https://www.yahoo.com/news/midte rms/house/seat	https://www.yahoo.com/news/tagged/photos/
https://www.yahoo.com/news/mccon nell-plan-fails-will-democrats- republicans-work-together-fix- health-care-220450895.html	https://www.yahoo.com/news/originals/

https://www.yahoo.com/news/grim-	https://www.yahoo.com/news
warnings-white-house-	
republicans-ahead-election-	
171354295election.html	
https://www.yahoo.com/news/democ	https://news.yahoo.com/russians-targeted-
rats-wrest-power-away-	reagan-presidential-campaign-heres-cia-
republicans-state-level-	stop-100048764.html
183309710.html	
https://www.yahoo.com/news/repub	https://www.yahoo.com/news/politics/
licans-rush-obamacare-repeal-	
and-replace-through-house-	
committees-233538837.html	
https://www.yahoo.com/news/gop-	https://www.yahoo.com/news/tagged/when%20
obamacare-replacement-narrowly-	presidents%20lead/
passes-out-of-committee-after-3-	
republicans-defect-	
145519718.html	
https://www.yahoo.com/news/wi	https://www.yahoo.com/news/tagged/sku
ll-democrats-filibuster-	llduggery
gorsuch-republicans-dont-	
think-so-111241581.html	
https://www.yahoo.com/news/ho	https://www.yahoo.com/news/world/
use-republicans-reveal-	Treeps://www.yanooreom/news/worea/
•	
obamacare-replacement-bill-	
013510100.html	
https://news.yahoo.com/down-	https://www.yahoo.com/news/science/
ticket-5-republicans-finally-	
000000015.html	

# 5. Patriot Movement

Lucene	PageRank
https://www.yahoo.com/news/jeffers	https://www.yahoo.com/news
ons-tree-liberty-blood-	
schoolchildren-171918999.html	
https://www.yahoo.com/news/wing-	https://www.yahoo.com/news/tagged
patriot-prayer-rally-counter-	/through-her-eyes
slideshow-wp-212529094.html	
https://www.yahoo.com/news/wing-	https://news.yahoo.com/crackdown-
patriot-prayer-rally-counter-	opioids-victims-people-need-live-
slideshow-wp-212529094.html	100058361.html
https://www.yahoo.com/news/wing-	https://news.yahoo.com/admissions
patriot-prayer-rally-counter-	-scam-adds-insult-injury-
slideshow-wp-212529094.html	minority-applicants-
	202405114.html
https://www.yahoo.com/news/wing-	https://news.yahoo.com/death-
patriot-prayer-rally-counter-	penalty-outlawed-203116351.html
slideshow-wp-212529094.html	

https://www.yahoo.com/n	https://news.yahoo.com/ilhan-
ews/wing-patriot-prayer-rally-	omar-and-andre-carson-respond-to-
counter-slideshow-wp-	horror-of-new-zealand-massacre-
212529094.html	of-muslims-171412117.html
https://www.yahoo.com/news/wing-	https://news.yahoo.com/latest-
patriot-prayer-rally-counter-	students-delhi-protest-cleaner-
slideshow-wp-212529094.html	143006709.html
https://www.yahoo.com/news/wing- patriot-prayer-rally-counter- slideshow-wp-212529094.html	https://news.yahoo.com/photos-in- gaza-women-walk-thin-line- between-hope-and-despair- 132405730.html
https://www.yahoo.com/news/wing-	https://www.yahoo.com/news/2016-
patriot-prayer-rally-counter-	pictures-news-slideshow-wp-
slideshow-wp-212529094.html	100040397.html
https://www.yahoo.com/news/wing-	https://news.yahoo.com/trump-
patriot-prayer-rally-counter-	mocks-beto-o-rourkes-crazy-hand-
slideshow-wp-212529094.html	gestures-183443014.html

# 6. Oscar 2019

Lucene	PageRank
https://news.yahoo.com/spike- lee-pushes-back-trump-spat- continues-oscar-speech- 162915413.html	https://www.yahoo.com/news/
https://news.yahoo.com/skulldug gery-power-vice-000835154.html	https://www.yahoo.com/news/tagged/photos/
<pre>https://www.yahoo.com/news/topi cs/star-wars</pre>	https://www.yahoo.com/news/originals/
https://news.yahoo.com/trump- bashes-spike-lee-racist-hit- oscars-123716258.html	https://www.yahoo.com/news
https://www.yahoo.com/news/topics/royal-family	https://news.yahoo.com/russians-targeted- reagan-presidential-campaign-heres-cia- stop-100048764.html
https://news.yahoo.com/kamala- harris-trump-racist- 185542673.html	https://news.yahoo.com/ann-coulter-lunatic- trump-challenged-2020-right-165049018.html
https://news.yahoo.com/the- names-behind-the-college- cheating-charges-141742295.html	https://www.yahoo.com/news/politics/
<pre>https://www.yahoo.com/news/topi cs/technology</pre>	https://www.yahoo.com/news/tagged/when%20presidents%20lead/
https://news.yahoo.com/gore-us- getting-close-political-shift- climate-change-223933667 politics.html	https://news.yahoo.com/us-grounds-boeing- 737-max-amid-growing-safety-200009938.html
https://www.yahoo.com/news/here s-know-orlando-victims- 000000001.html	https://www.yahoo.com/news/tagged/skulldug gery

# 7. Channel

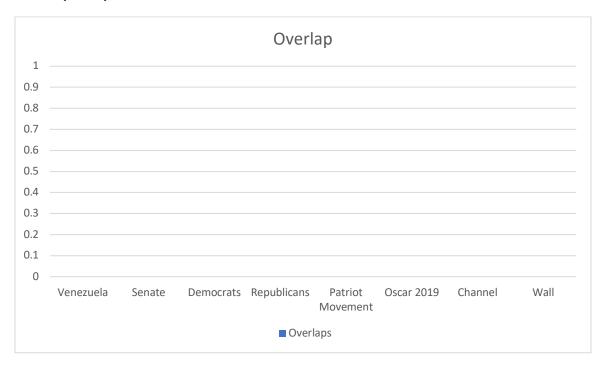
Lucene	PageRank
https://www.yahoo.com/news/topics/fox -news-channel	https://www.yahoo.com/news/topics
https://www.yahoo.com/news/topics/cnn	https://news.yahoo.com/crackdown- opioids-victims-people-need-live- 100058361.html
https://www.yahoo.com/news/service-charlottesville-victim-heather-heyer-call-righteous-action-172114070.html	https://news.yahoo.com/operation- cobra-untold-story-cia-officer- trained-network-agents-found-soviet- missiles-cuba-100005794.html
https://www.yahoo.com/news/topics/meg yn-kelly	https://www.yahoo.com/news/skulldugge ry-washington-think-tank-says-no- saudi-funds-124450269.html
<pre>https://www.yahoo.com/news/topics/mar ijuana-legalization</pre>	<pre>https://www.yahoo.com/news/topics/pre sident-trump</pre>
https://www.yahoo.com/news/topics/space-exploration	https://news.yahoo.com/rory-mcilroy- blames-pga-tour-slow-play-epidemic- 004543461.html
https://www.yahoo.com/news/topics/health	https://news.yahoo.com/the-names- behind-the-college-cheating-charges- 141742295.html
https://www.yahoo.com/news/topics/sex -crimes	https://news.yahoo.com/death-toll- rises-nine-collapsed-lagos-school- building-074812489.html
<pre>https://www.yahoo.com/news/topics/san ctuary-cities</pre>	<pre>https://www.yahoo.com/news/topics/jar ed-kushner</pre>
https://www.yahoo.com/news/topics/ada m-rippon	https://www.yahoo.com/news/fire- trump-says-misspoke-russian- interference-u-s-election- 192113980.html

# 8.Wall

Lucene	PageRank
https://www.yahoo.com/news/wa ll-wall-trump-defends-border- plan-kelly-suggests-changed- 145144558.html	https://www.yahoo.com/news/
https://www.yahoo.com/news/im agining-trumps-big-beautiful- wall-might-183350584.html	https://www.yahoo.com/news/tagged/photos/
https://www.yahoo.com/news/go p-leaders-back-at-least-12- billion-for-border-wall- 153042941.html	https://www.yahoo.com/news/originals/
https://www.yahoo.com/news/tr umps-big-beautiful-wall- collides-congress- 102804089.html	https://www.yahoo.com/news

https://www.yahoo.com/news/border-wall-funding-threatens-government-shutdown-budget-battle-heats-180534239.html	https://news.yahoo.com/russians-targeted- reagan-presidential-campaign-heres-cia-stop- 100048764.html
https://www.yahoo.com/news/on -the-border-waiting-for-the- big-beautiful-wall- 225959295.html	https://news.yahoo.com/ann-coulter-lunatic- trump-challenged-2020-right-165049018.html
https://www.yahoo.com/news/sa nders-calls-obamas-400k-wall- street-speaking-fee- unfortunate-150857262.html	https://www.yahoo.com/news/politics/
https://www.yahoo.com/news/st eve-king-has-a-model-of-the- border-wall-he-wants-to- build-to-protect-our- superior-civilization- 183248446.html	https://www.yahoo.com/news/tagged/when%20pres idents%20lead/
https://www.yahoo.com/news/re building-great-wall-china- slideshow-wp-163045771.html	<pre>https://www.yahoo.com/news/tagged/skulldugger y</pre>
https://www.yahoo.com/news/re building-great-wall-china- slideshow-wp-163045771.html	https://www.yahoo.com/news/world/

## Overlap Graph:



0 overlap for all of queries