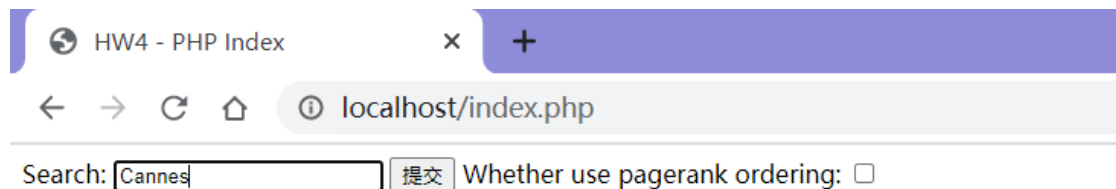## A. Steps to complete the assignment

1. Using Ubuntu 16.04 (in VirtualBox) to setup Solr standalone, and maps port between host machine and virtual machine for host to connect Solr.
2. Change the config of my core, provide html files to Solr and index pages.
3. Extract outgoing links and build DiGraph (all by Python3): using BeautifulSoup4 to extract outgoing links of html files; while extracting, using file_to_url and url_to_file (from URLtoHTML_nytimes_news.csv) to filter links, and adding edges to the DiGraph using the NetworkX library. So get the directed graph of files.
4. Calculate page rank: by the DiGraph created before, using pagerank function to calculate PageRank. The parameters include: alpha=0.85, personalization=None, max_iter=30, tol=1.0e-06, nstart=None, weight='weight', dangling=None.
5. Configure the standalone core to support the external PageRank file and reload it.
6. Build an Apache & PHP server to show the results of the queries.
7. Using Python to compute the similarities of query results.

B. Explain why some pages have higher PageRank values than others

Some pages have higher page rank because they have more pages linking into them, so there PageRanks have a lot of PR(A)/C(A) sum up. For example, pages that are front pages of the site or category, or pages that are on recommendation lists.

C. Screenshots

Initial query page (PHP)

localhost/index.php?q=Cannes

Search: Cannes 搜索 Whether use pagerank ordering: ☐

Results 1 - 10 of 120:

1. Title: Cannes 2019 Winners: South Korean Movie 'Parasite' Wins the Palme d' Or - The New York Times
   URL: https://www.nytimes.com/2019/05/25/movies/cannes-film-festival-winners-parasite.html
   ID: /home/wzm/data/crawl_data/bcf8419b-bed1-4e00-9c7d-913ead8f73bb.html
   Description: The film by the director Bong Joon-ho is the first South Korean film to win the top honor at the Cannes Film Festival.
2. Title: Cannes 2019 Winners: South Korean Movie 'Parasite' Wins the Palme d' Or - The New York Times
   URL: https://www.nytimes.com/2019/05/25/movies/cannes-film-festival-winners-parasite.html
   ID: /home/wzm/data/crawl_data/796087ed-852c-4cda-88b9-45653f0323e1.html
   Description: The film by the director Bong Joon-ho is the first South Korean film to win the top honor at the Cannes Film Festival.
3. Title: Spike Lee and Godard Films to Compete at a Cannes With No Netflix - The New York Times
   URL: https://www.nytimes.com/2018/04/12/movies/cannes-lineup-netflix-boycott.html
   ID: /home/wzm/data/crawl_data/9e1a4603-9a1f-4ef2-ba2d-4ae5e6e09a50.html
   Description: The streaming giant will boycott the festival this year in protest against a rule requiring them to show their movies in French movie theaters.
4. Title: At Cannes, the Heartfelt and the Scathing Exist Side by Side - The New York Times
   URL: https://www.nytimes.com/2019/05/24/movies/cannes-almodovar-kechiche.html
   ID: /home/wzm/data/crawl_data/91472991-5297-4555-9c84-d64ff6a6edf9.html
   Description: The newest from Pedro Almodóvar features a moving performance from Antonio Banderas, while other films have been much more divisive.
5. Title: Cannes Film Festival: It' s Apocalypse Now, Thanks to Jim Jarmusch - The New York Times
   URL: https://www.nytimes.com/2019/05/16/movies/cannes-film-festival-jim-jarmusch.html
   ID: /home/wzm/data/crawl_data/9efeb1e3-f2f3-41a8-866b-6c1a8a961295.html
   Description: The start of this year' s festival has all the customary stars and glamour as well as flesh-eating American zombies and a Brazilian fight to the death.
6. Title: Cannes Film Festival: Is Antonio Banderas Playing Pedro Almodóvar Onscreen? - The New York Times
   URL: https://www.nytimes.com/2019/05/21/movies/cannes-film-festival-antonio-banderas-pedro-almodovar.html
   ID: /home/wzm/data/crawl_data/61da6e3b-7a24-4586-833e-95bbd5a65492.html
   Description: "There were things there I never thought he was going to expose," the actor says at the premiere of the film, "Pain and Glory."
7. Title: Which Cannes Films Will Factor Into the Oscar Race? - The New York Times
   URL: https://www.nytimes.com/2019/05/27/movies/cannes-oscars.html
   ID: /home/wzm/data/crawl_data/3b9e4f39-2669-4d2f-ad07-ee135e33514d.html
   Description: What this year' s strong lineup told us about Quentin Tarantino, Brad Pitt, Antonio Banderas and many more.
8. Title: The First Black Woman to Compete at Cannes Finds Her Voice in Africa - The New York Times
   URL: https://www.nytimes.com/2019/05/20/arts/cannes-film-festival-black-director.html
   ID: /home/wzm/data/crawl_data/a74b892d-cda8-494f-81a6-2bd1f2401410.html
   Description: The 36-year-old filmmaker Mati Diop traces the genesis of her first feature, "Atlantics," to her re-exploration of her identity.
9. Title: Quentin Tarantino Passes on Question About Screen Treatment of Margot Robbie - The New York Times
   URL: https://www.nytimes.com/2019/05/22/movies/quentin-tarantino-margot-robbie.html
   ID: /home/wzm/data/crawl_data/be81dd88-680e-4540-9bed-36e7e3259c14.html
   Description: Her character in "Once Upon a Time ... in Hollywood" doesn' t have many lines, but the director rejected the idea that it was a choice.
10. Title: Brad Pitt and Leonardo DiCaprio Talk Tarantino, Stardom and What Might Have Been - The New York Times
    URL: https://www.nytimes.com/2019/05/22/movies/dicaprio-pitt.html
    ID: /home/wzm/data/crawl_data/e75aeb71-c4a8-4424-8285-b638de51d8f9.html
    Description: At the Cannes Film Festival, they reminisced about what it' s like being alone in Hollywood and working with the director on their new movie, "Once Upon a Time ... in Hollywood."
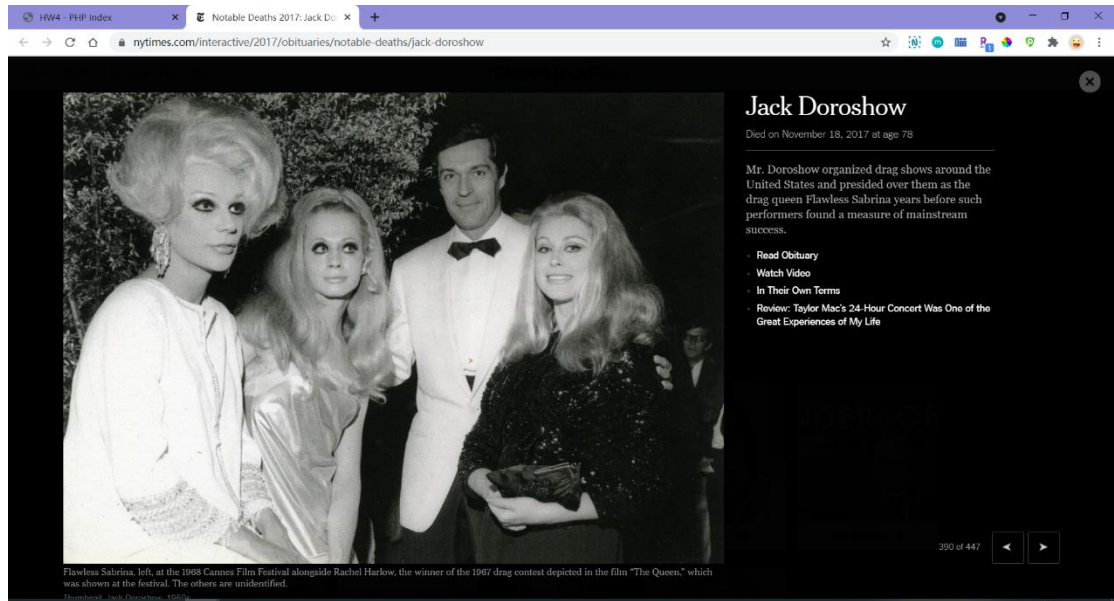
Results for Lucene (Default)

localhost/index.php?q=Cannes&order=pagerank

Search: Cannes 搜索 Whether use pagerank ordering: ☑

Results 1 - 10 of 120:

1. Title: Notable Deaths 2017: Jack Doroshow - The New York Times
   URL: https://www.nytimes.com/interactive/2017/obituaries/notable-deaths-jack-doroshow
   ID: /home/wzm/data/crawl_data/62e5354b-418e-448c-a7a2-22ea2c023b25.html
   Description: Mr. Doroshow organized drag shows around the United States and presided over them as the drag queen Flawless Sabrina years before such performers found a measure of mainstream success.
2. Title: Notable Deaths 2016: Abbas Kiarostami - The New York Times
   URL: https://www.nytimes.com/interactive/2016/obituaries/notable-deaths-abbas-kiarostami
   ID: /home/wzm/data/crawl_data/33a7e488-70ad-44d5-8674-2ba1f1c3655d.html
   Description: Mr. Kiarostami was often hailed as Iran' s greatest filmmaker. His searching, parablelike dramas of ordinary people and their problems reflected a poetic vision and a philosophical turn of mind. His 1997 film "Taste of Cherry" won the Palme d' Or at the Cannes Film Festival.
3. Title: Harvey Weinstein Paid Off Sexual Harassment Accusers for Decades - The New York Times
   URL: https://www.nytimes.com/2017/10/05/us/harvey-weinstein-harassment-allegations.html
   ID: /home/wzm/data/crawl_data/218685fb-824a-4c7f-a494-f9554817813c.html
   Description: An investigation by The New York Times found allegations stretching back to 1990 about Mr. Weinstein' s treatment of women in Hollywood.
4. Title: Nick Cave Is the Most Joyful, and Critical, Artist in America - The New York Times
   URL: https://www.nytimes.com/interactive/2019/10/15/t-magazine/nick-cave-artist.html
   ID: /home/wzm/data/crawl_data/dd426112-03e7-4b1a-acf4-1a8753fa1e1d.html
   Description: Using materials that range from twigs to crystals to rainbow-colored hair, the artist makes sculptures that, for all their beauty, are visceral and necessary critiques of racial injustice.
5. Title: Opinion | Among the Mangroves, a Girl Learns to Swim - The New York Times
   URL: https://www.nytimes.com/2018/09/18/opinion/colombia-swimming-lesson-mangroves-dulce.html
   ID: /home/wzm/data/crawl_data/8cedb6dc-aae6-4319-9eab-a1b89bec8b34.html
   Description: In a small Colombian village, a mother guides her daughter through a rite of passage.
6. Title: 'Parasite' Review: The Lower Depths Rise With a Vengeance - The New York Times
   URL: https://www.nytimes.com/2019/10/10/movies/parasite-review.html
   ID: /home/wzm/data/crawl_data/f8b12c5c-a13a-45e5-ae48-2089c422f278.html
   Description: In Bong Joon Ho' s new film, a destitute family occupies a wealthy household in an elaborate scheme that goes comically — then horribly — wrong.
7. Title: Oscars 2020 - The New York Times
   URL: https://www.nytimes.com/news-event/awards-season
   ID: /home/wzm/data/crawl_data/8ba33cc7-14be-415a-8bd4-f18549b1601d.html
   Description: Complete coverage of the movie awards season from our reporters, editors and critics.
8. Title: Harvey Weinstein Paid Off Sexual Harassment Accusers for Decades - The New York Times
   URL: https://www.nytimes.com/2017/10/05/us/harvey-weinstein-harassment-allegations.html
   ID: /home/wzm/data/crawl_data/3089034f-52be-4fb8-8f45-87c63d2ce893.html
   Description: An investigation by The New York Times found allegations stretching back to 1990 about Mr. Weinstein' s treatment of women in Hollywood.
9. Title: Rachel Weisz Is Performing for Herself - The New York Times
   URL: https://www.nytimes.com/interactive/2019/10/15/t-magazine/rachel-weisz-acting-movies.html
   ID: /home/wzm/data/crawl_data/77555160-1ed9-4972-9a6b-ea2d3d2729a3.html
   Description: Through more than 40 intense and idiosyncratic roles — often in films a world away from typical Hollywood fare — the actress reveals a woman in complete command.
10. Title: Nicolas Ghesquière Is Playing 'the Big Game' - The New York Times
    URL: https://www.nytimes.com/interactive/2019/10/15/t-magazine/nicolas-ghesquiere-louis-vuitton.html
    ID: /home/wzm/data/crawl_data/f58686f4-0524-4d86-88af-c049e68904a7.html
    Description: The Louis Vuitton designer' s rigorous vision has shaped fashion for this era, with a reach that' s as wide-ranging as it is deep-seated.

Results for PageRank (Default)

When click on a link

D. A table containing list of URLs of the top ten results

Cannes	default	pagerank
0	https://www.nytimes.com/2019/05/25/movies/cannes-film-festival-winners-parasite.html	https://www.nytimes.com/interactive/2017/obituaries/notable-deaths/jack-doroshow
1	https://www.nytimes.com/2019/05/25/movies/cannes-film-festival-winners-parasite.html	https://www.nytimes.com/interactive/2016/obituaries/notable-deaths/abbas-kiarostami
2	https://www.nytimes.com/2018/04/12/movies/cannes-lineup-netflix-boycott.html	https://www.nytimes.com/2017/10/05/us/harvey-weinstein-harassment-allegations.html
3	https://www.nytimes.com/2019/05/24/movies/cannes-almodovar-kechiche.html	https://www.nytimes.com/interactive/2019/10/15/t-magazine/nick-cave-artist.html
4	https://www.nytimes.com/2019/05/16/movies/cannes-film-festival-jim-jarmusch.html	https://www.nytimes.com/2018/09/18/opinion/colombia-swimming-lesson-mangroves-dulce.html
5	https://www.nytimes.com/2019/05/21/movies/cannes-film-festival-antonio-banderas-pedro-almodovar.html	https://www.nytimes.com/2019/10/10/movies/parasite-review.html
6	https://www.nytimes.com/2019/05/27/movies/cannes-oscars.html	https://www.nytimes.com/news-event/awards-season
7	https://www.nytimes.com/2019/05/20/arts/cannes-film-festival-black-director.html	https://www.nytimes.com/2017/10/05/us/harvey-weinstein-harassment-allegations.html
8	https://www.nytimes.com/2019/05/22/movies/quentin-tarantino-margot-	https://www.nytimes.com/interactive/2019/10/15/t-magazine/rachel-weisz-acting-

		robbie.html	movies.html
	9	https://www.nytimes.com/2019/05/22/movies/dicaprio-pitt.html	https://www.nytimes.com/interactive/2019/10/15/t-magazine/nicolas-ghesquiere-louis-vuitton.html
Congress		**default**	**pagerank**
	0	https://www.nytimes.com/interactive/2019/us/politics/trump-impeachment-congress-list.html	https://www.nytimes.com
	1	https://www.nytimes.com/2019/11/05/magazine/congress-president-impeachment.html	https://www.nytimes.com/video/us/politics/100000006067682/president-trump-impeach-questions-answers-michael-cohen.html
	2	https://www.nytimes.com/2019/11/05/magazine/congress-president-impeachment.html	https://www.nytimes.com/video/us/politics/100000005524412/paul-manafort-fraud-laundering-scandal.html
	3	https://www.nytimes.com/2019/07/25/us/politics/mueller-impeachment.html	https://www.nytimes.com/section/magazine
	4	https://www.nytimes.com/2019/09/07/us/politics/congress-assault-weapons-ban.html	https://www.nytimes.com/section/t-magazine
	5	https://www.nytimes.com/2018/11/21/obituaries/james-billington-dead.html	https://www.nytimes.com/issue/todayspaper/2019/11/10/todays-new-york-times
	6	https://www.nytimes.com/2019/07/26/us/politics/donald-trump-impeachment.html	https://www.nytimes.com/section/jobs
	7	https://www.nytimes.com/2019/08/07/us/politics/foreign-aid-freeze-congress.html	https://www.nytimes.com/2017/10/30/us/politics/paul-manafort.html
	8	https://www.nytimes.com/2018/07/30/obituaries/ron-dellums-forceful-liberal-in-congress-for-27-years-dies-at-82.html	https://www.nytimes.com/2018/08/22/us/politics/offense-impeachable-constitution.html
	9	https://www.nytimes.com/2017/12/21/world/americas/peru-president-impeachment.html	https://www.nytimes.com/interactive/2017/04/19/crosswords/CROSSWORDS-sports-names.html
Democrats		**default**	**pagerank**
	0	https://www.nytimes.com/2018/09/04/us/politics/ayanna-pressley-massachusetts.html	https://www.nytimes.com/video
	1	https://www.nytimes.com/2018/11/07/us/politics/election-history-firsts-blackburn-pressley.html	https://www.nytimes.com
	2	https://www.nytimes.com/2019/10/16/us/politics/democrats-impeachment.html	https://www.nytimes.com/video/us/politics/100000006067682/president-trump-

		impeach-questions-answers-michael-cohen.html
3	https://www.nytimes.com/2018/01/23/us/politics/impeach-trump-democrats-tom-steyer.html	https://www.nytimes.com/video/opinion/100000006064751/coal-miner-to-trump-coal-mining-isnt-coming-back.html
4	https://www.nytimes.com/2019/09/29/us/politics/pelosi-trump-impeachment.html	https://www.nytimes.com/section/magazine
5	https://www.nytimes.com/2019/09/24/us/politics/trump-democrats.html	https://www.nytimes.com/section/us
6	https://www.nytimes.com/2019/10/28/us/politics/trump-impeachment-subpoena-house.html	https://www.nytimes.com/issue/todayspaper/2019/11/10/todays-new-york-times
7	https://www.nytimes.com/2019/11/05/opinion/trump-democrats-2020.html	https://www.nytimes.com/section/opinion/columnists
8	https://www.nytimes.com/2019/11/01/us/politics/house-republican-box-prank.html	https://www.nytimes.com/section/opinion
9	https://www.nytimes.com/2019/07/20/us/politics/trump-democrats-socialists.html	https://www.nytimes.com/section/politics
Patriot Movement	**default**	**pagerank**
0	https://www.nytimes.com/2019/08/14/opinion/joe-walsh-trump-primary.html	https://www.nytimes.com/video
1	https://www.nytimes.com/1976/08/27/archives/lewis-michaux-92-dies-ran-bookstore-in-harlem.html	https://www.nytimes.com
2	https://www.nytimes.com/2019/05/15/us/politics/us-iraq-embassy-evacuation.html	https://www.nytimes.com/section/t-magazine
3	https://www.nytimes.com/2019/01/07/obituaries/moshe-arens-dead.html	https://www.nytimes.com/section/technology
4	https://www.nytimes.com/2019/10/27/obituaries/john-conyers-jr-dead.html	https://www.nytimes.com/issue/todayspaper/2019/11/10/todays-new-york-times
5	https://www.nytimes.com/2018/12/29/obituaries/shehu-shagari-dead.html	https://www.nytimes.com/section/opinion
6	https://www.nytimes.com/2019/10/22/sports/football/jets-patriots.html	https://www.nytimes.com/section/lens
7	https://www.nytimes.com/2019/10/30/opinion/alexander-vindman-trump-ukraine.html	https://www.nytimes.com/video/opinion
8	https://www.nytimes.com/2019/09/23/opinion/democrats-republicans.html	https://www.nytimes.com/2019/11/01/arts/television/new-to-stream-netflix.html

9	https://www.nytimes.com/by/jaclyn-peiser	https://www.nytimes.com/2018/08/07/opinion/deafness-cochlear-implants.html
Republicans	**default**	**pagerank**
0	https://www.nytimes.com/2019/10/24/us/politics/senate-republicans-trump.html	https://www.nytimes.com
1	https://www.nytimes.com/2019/11/04/us/politics/trump-republicans-impeachment.html	https://www.nytimes.com/video/us/politics/100000006067682/president-trump-impeach-questions-answers-michael-cohen.html
2	https://www.nytimes.com/2019/11/04/us/politics/trump-republicans-impeachment.html	https://www.nytimes.com/section/us
3	https://www.nytimes.com/2019/10/04/us/politics/republicans-trump-defense.html	https://www.nytimes.com/issue/todayspaper/2019/11/10/todays-new-york-times
4	https://www.nytimes.com/by/catie-edmondson	https://www.nytimes.com/section/politics
5	https://www.nytimes.com/interactive/2019/08/14/magazine/republicans-racism-african-americans.html	https://www.nytimes.com/section/upshot
6	https://www.nytimes.com/2019/10/08/us/politics/republicans-trump-syria.html	https://www.nytimes.com/news-event/2020-election
7	https://www.nytimes.com/2019/10/31/us/politics/house-impeachment-partisan-vote.html	https://www.nytimes.com/2017/10/30/us/politics/paul-manafort.html
8	https://www.nytimes.com/2019/11/06/us/trump-senate-republicans-courts.html	https://www.nytimes.com/2018/08/22/us/politics/offense-impeachable-constitution.html
9	https://www.nytimes.com/2019/11/06/us/trump-senate-republicans-courts.html	https://www.nytimes.com/interactive/2019/us/politics/2020-presidential-candidates.html
Senate	**default**	**pagerank**
0	https://www.nytimes.com/2019/10/01/us/politics/senate-trump-impeachment.html	https://www.nytimes.com/video/opinion/100000006064751/coal-miner-to-trump-coal-mining-isnt-coming-back.html
1	https://www.nytimes.com/2019/10/24/us/politics/senate-republicans-trump.html	https://www.nytimes.com/section/us
2	https://www.nytimes.com/2019/10/26/us/trump-senate-presidency.html	https://www.nytimes.com/issue/todayspaper/2019/11/10/todays-new-york-times
3	https://www.nytimes.com/2019/08/03/us/politics/senate-votes-mcconnell.html	https://www.nytimes.com/section/climate
4	https://www.nytimes.com/2019/08/22/us/politics/john-hickenlooper-senate-	https://www.nytimes.com/news-event/2020-election

	2020.html	
5	https://www.nytimes.com/2019/08/31/us/politics/senate-race-2020.html	https://www.nytimes.com/times-journeys/tour-type/small-group/
6	https://www.nytimes.com/by/carl-hulse	https://www.nytimes.com/times-journeys/trip-type/politics-and-perspective/
7	https://www.nytimes.com/2019/11/08/us/impeachment-senate-democrats.html	https://www.nytimes.com/2018/08/22/us/politics/offense-impeachable-constitution.html
8	https://www.nytimes.com/2019/10/18/us/politics/mcconnell-impeachment-senate.html	https://timesjourneys.nytimes.com/tour-type/
9	https://www.nytimes.com/2019/11/06/us/trump-senate-republicans-courts.html	https://www.nytimes.com/interactive/2019/us/politics/2020-presidential-candidates.html
Olympics 2020	**default**	**pagerank**
0	https://www.nytimes.com/2019/10/01/travel/what-you-need-to-know-the-tokyo-2020-olympics.html	https://www.nytimes.com/video
1	https://www.nytimes.com/2018/02/15/learning/should-technology-in-sports-be-limited.html	https://www.nytimes.com
2	https://www.nytimes.com/2018/02/15/learning/should-technology-in-sports-be-limited.html	https://www.nytimes.com/video/world/middleeast/100000001253159/2011-arab-spring.html
3	https://www.nytimes.com/2017/12/05/sports/olympics/ioc-russia-winter-olympics.html	https://www.nytimes.com/video/opinion/100000006033259/between-sound-and-silence.html
4	https://www.nytimes.com/2018/04/23/sports/breakdancing-olympics.html	https://www.nytimes.com/video/opinion/100000005675688/my-dead-dads-porno-tapes.html
5	https://www.nytimes.com/2016/08/02/sports/olympics/rare-show-of-discord-between-ioc-and-world-anti-doping-agency-over-russian-scandal.html	https://www.nytimes.com/video/opinion/100000006048561/calving-season.html
6	https://www.nytimes.com/2016/12/08/sports/great-moments-in-cheerleading-could-the-olympics-be-next.html	https://www.nytimes.com/video/us/politics/100000006067682/president-trump-impeach-questions-answers-michael-cohen.html
7	https://www.nytimes.com/2019/09/23/sports/olympics/russia-doping-wada.html	https://www.nytimes.com/video/us/politics/100000005524412/paul-manafort-fraud-laundering-scandal.html
8	https://www.nytimes.com/2017/12/11/sp	https://www.nytimes.com/video/opinion/10

		orts/olympics/fastest-color.html	0000006055559/sanctuary-city-hotline.html
	9	https://www.nytimes.com/2019/11/01/sports/olympics/enriqueta-basilio-71-dies-first-woman-to-light-olympic-flame.html	https://www.nytimes.com/video/opinion/100000006064751/coal-miner-to-trump-coal-mining-isnt-coming-back.html
Stock		**default**	**pagerank**
	0	https://www.nytimes.com/interactive/2017/10/04/us/bump-stock-las-vegas-gun.html	https://www.nytimes.com/issue/todayspaper/2019/11/10/todays-new-york-times
	1	https://www.nytimes.com/2018/12/16/technology/tech-workers-company-stock-shareholder-activism.html	https://www.nytimes.com/section/world
	2	https://www.nytimes.com/2019/05/02/business/tesla-stock-fundraising.html	https://www.nytimes.com/section/business
	3	https://www.nytimes.com/2019/05/10/technology/uber-stock-price-ipo.html	https://www.nytimes.com/section/automobiles
	4	https://www.nytimes.com/2019/11/04/business/under-armour-stock-investigation.html	https://www.nytimes.com/section/upshot
	5	https://www.nytimes.com/2019/10/24/style/rebag-clair-handbag-stock-market.html	https://www.nytimes.com/times-journeys/travel/egypt/
	6	https://www.nytimes.com/2019/10/28/business/stock-market-record.html	https://www.nytimes.com/section/fashion
	7	https://www.nytimes.com/2019/05/30/technology/uber-stock-earnings.html	https://www.nytimes.com/times-journeys/travel-experience/greenwich-village-old-new-and-delicious/
	8	https://www.nytimes.com/2018/11/12/obituaries/david-pearson-nascar-dead.html	https://www.nytimes.com/interactive/2019/04/10/t-magazine/terrence-mcnally-interview.html
	9	https://www.nytimes.com/2019/09/20/technology/airbnb-employees-ipo-payouts.html	https://www.nytimes.com/section/world/middleeast
Virus		**default**	**pagerank**
	0	https://www.nytimes.com/2019/11/09/science/seals-distemper.html	https://www.nytimes.com/es/
	1	https://www.nytimes.com/2019/10/28/us/politics/kay-hagan-dead.html	https://www.nytimes.com/section/us
	2	https://www.nytimes.com/2019/10/25/health/predict-usaid-viruses.html	https://www.nytimes.com/section/science
	3	https://www.nytimes.com/2019/02/05/us/politics/trump-hiv-aids-plan.html	https://www.nytimes.com/section/world
	4	https://www.nytimes.com/video/opinion/100000006210828/russia-	https://www.nytimes.com/section/health

		disinformation-fake-news.html	
5	https://www.nytimes.com/video/opinion/100000006210828/russia-disinformation-fake-news.html	https://www.nytimes.com/section/climate
6	https://www.nytimes.com/by/donald-g-mcneil-jr	https://www.nytimes.com/2019/08/01/business/vas-narasimhan-novartis-corner-office.html
7	https://www.nytimes.com/2019/09/27/well/live/when-is-the-best-time-to-get-your-flu-shot.html	https://www.nytimes.com/interactive/2016/obituaries/notable-deaths/da-henderson
8	https://www.nytimes.com/2019/01/23/neediest-cases/daughter-cmv.html	https://www.nytimes.com/2018/11/12/opinion/russia-meddling-disinformation-fake-news-elections.html
9	https://www.nytimes.com/2019/02/04/us/politics/trump-hiv-aids-plan.html	https://www.nytimes.com/video/opinion/100000006188105/countering-disinformation-active-measures.html

E. Overlap

My result shows that there is no overlap.

This is because that the default (Lucene) algorithm may give more relevant pages compared to PageRank algorithm. PageRank focus more on 'vote', that is, it relates to how much pages are related to other pages, but may not focus on the relevance to the query.