

## STEPS FOLLOWED TO COMPLETE THE ASSIGNMENT

### Installation of Virtual Box and Ubuntu

- 1) Downloaded and installed **VirtualBox 6.0.18** in my Windows OS.
- 2) Downloaded Image file of **Ubuntu 18.04.4 LTS**.
- 3) Created Virtual machine with **8 GB RAM** and drive size of **128 GB**.
- 4) After starting Ubuntu in the virtual machine, added Guest additions and created a shared Folder for accessing between Windows and Ubuntu.
- 5) Enabled the bidirectional copy-paste and drag-and-drop features in VBox and mounted the shared folder.

### Installation of Java, Apache and PHP

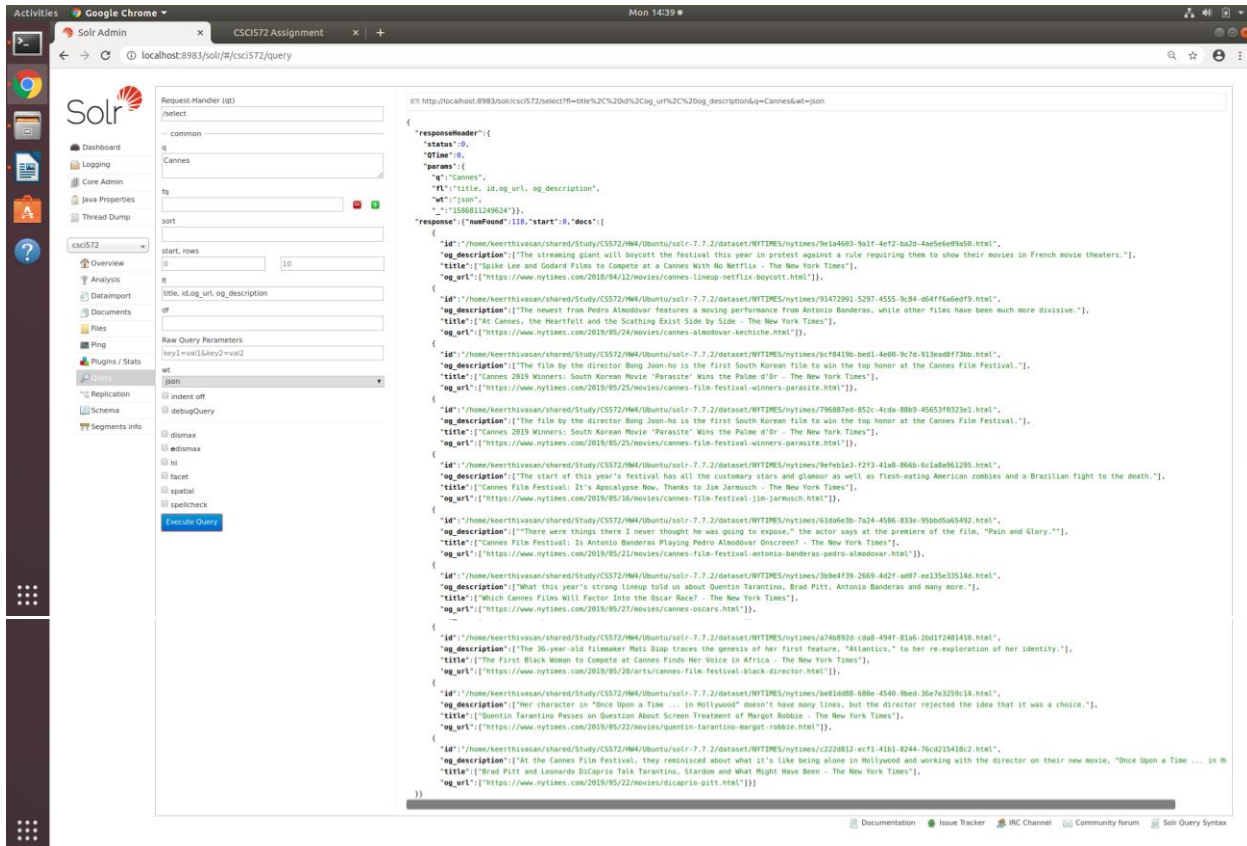
- 1) Installed **Java 11.0.6** in Ubuntu.
- 2) Installed **Apache 2.4.29** and changed the default path of the server using the following steps.
  - `cd /etc/apache2/sites-available`
  - `sudo nano 000-default.conf` => Changed the path in this file
  - `sudo nano apache2.conf` => Added this block

```
<Directory /path/to/shared/folder>
    Options Indexes FollowSymLinks
    AllowOverride None
    Require all granted
</Directory>
```
  - `sudo service apache2 restart`
- 3) Installed **PHP 7.2.24** and set `display_errors = on` in PHP.ini file to display all the errors.

### Installation of Solr

- 1) Downloaded and unpacked **Solr 7.7.2** in the shared folder.
- 2) Created a **core** named "**csci572**" and modified the managed-schema file to populate field data to a single **\_text\_** field.
- 3) Configured Solr to query default from **\_text\_** by defining the **df** field inside requestHandler of **solrconfig.xml** file.
- 4) Using the **TIKA POST** command, fetched and parsed the 16040 documents. Index entries for 14864 documents were created.

## Querying Solr with “Cannes”



The screenshot shows the Solr Admin web interface in a Google Chrome browser. The left sidebar contains navigation links like Dashboard, Logging, Core Admin, Java Properties, Thread Dump, Overview, Analysis, Dataimport, Documents, Files, Ping, Plugins / Stats, Replication, Schema, and Segments info. The main content area displays the 'Request-Handler (q)' configuration for the 'common' core, with the 'q' parameter set to 'Cannes'. The 'sort' parameter is set to 'start, rows'. The 'wt' parameter is set to 'json'. The 'rawQueryParameters' section shows 'key1=val1&key2=val2'. The 'debugQuery' checkbox is checked. The right pane shows the JSON response for the query, which is a list of movie documents from the Cannes Film Festival.

```

{
  "responseHeader": {
    "status": 0,
    "QTime": 18,
    "params": {
      "q": "Cannes",
      "qt": "lucene",
      "wt": "json",
      "start": 0,
      "rows": 10
    }
  },
  "response": {
    "numFound": 128,
    "start": 0,
    "docs": [
      {
        "id": "/home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/WTTIMES/nytimes/9e14683-9a1f-4e12-ba26-4ae5e699a58.html",
        "og_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.",
        "title": "Dislike Lee and Gaudet Films to Compete at a Cannes With No Netflix - The New York Times",
        "og_url": "https://www.nytimes.com/2018/04/12/movies/cannes-lineup-netflix-boycott.html"
      },
      {
        "id": "/home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/WTTIMES/nytimes/91472991-5297-4555-9c84-d64ff6dedf9.html",
        "og_description": "The newest from Pedro Almodovar features a moving performance from Antonio Banderas, while other films have been much more divisive.",
        "title": "At Cannes, the Heartfelt and the Scathing Exist Side by Side - The New York Times",
        "og_url": "https://www.nytimes.com/2018/05/24/movies/cannes-almodovar-kechuche.html"
      },
      {
        "id": "/home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/WTTIMES/nytimes/bcf419b-bed1-4e98-9c76-913ead8773b.html",
        "og_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.",
        "title": "Cannes 2019 Winners: South Korean Movie 'Parasite' Wins the Palme d'Or - The New York Times",
        "og_url": "https://www.nytimes.com/2019/05/25/movies/cannes-film-festival-winners-parasite.html"
      },
      {
        "id": "/home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/WTTIMES/nytimes/796987ed-852c-4cda-8809-4565f832361.html",
        "og_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.",
        "title": "Cannes 2019 Winners: South Korean Movie 'Parasite' Wins the Palme d'Or - The New York Times",
        "og_url": "https://www.nytimes.com/2019/05/25/movies/cannes-film-festival-winners-parasite.html"
      },
      {
        "id": "/home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/WTTIMES/nytimes/1f213-41a8-86d8-61ad9612295.html",
        "og_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.",
        "title": "Cannes Film Festival: It's Apocalypse Now, Thanks to Jim Jarmusch - The New York Times",
        "og_url": "https://www.nytimes.com/2018/05/16/movies/cannes-film-festival-jim-jarmusch.html"
      },
      {
        "id": "/home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/WTTIMES/nytimes/61d6e3b-7a24-4586-833e-958d5f65487.html",
        "og_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.",
        "title": "Cannes Film Festival: Is Antonio Banderas Playing Pedro Almodovar Discreet? - The New York Times",
        "og_url": "https://www.nytimes.com/2019/05/21/movies/cannes-film-festival-antonio-banderas-pedro-almodovar.html"
      },
      {
        "id": "/home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/WTTIMES/nytimes/3b64f39-2669-462f-ad87-e813e3551ad.html",
        "og_description": "What this year's strong lineup told us about Quentin Tarantino, Brad Pitt, Antonio Banderas and many more.",
        "title": "Which Cannes Films Will Factor Into the Oscar Race? - The New York Times",
        "og_url": "https://www.nytimes.com/2019/05/27/movies/cannes-oscars.html"
      },
      {
        "id": "/home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/WTTIMES/nytimes/a740892d-c88-404f-81a6-2b6173481418.html",
        "og_description": "The 36-year-old filmmaker Meli Dip traces the genesis of her first feature, 'Atlantics,' to her re-exploration of her identity.",
        "title": "The First Black Woman to Compete at Cannes Finds Her Voice in Africa - The New York Times",
        "og_url": "https://www.nytimes.com/2019/05/20/arts/cannes-film-festival-black-director.html"
      },
      {
        "id": "/home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/WTTIMES/nytimes/b81d088-688e-4548-b8ed-367e3259c14.html",
        "og_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.",
        "title": "Quentin Tarantino Praises on Quentin About Screen Treatment of Margot Robbie - The New York Times",
        "og_url": "https://www.nytimes.com/2019/05/22/movies/quentin-tarantino-margot-robbie.html"
      },
      {
        "id": "/home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/WTTIMES/nytimes/c22d812-ecf1-41a1-8244-76c351418c2.html",
        "og_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'.",
        "title": "Brad Pitt and Leonardo DiCaprio Talk Tarantino, Stardom and What Might Have Been - The New York Times",
        "og_url": "https://www.nytimes.com/2019/05/22/movies/dicaprio-pitt.html"
      }
    ]
  }
}

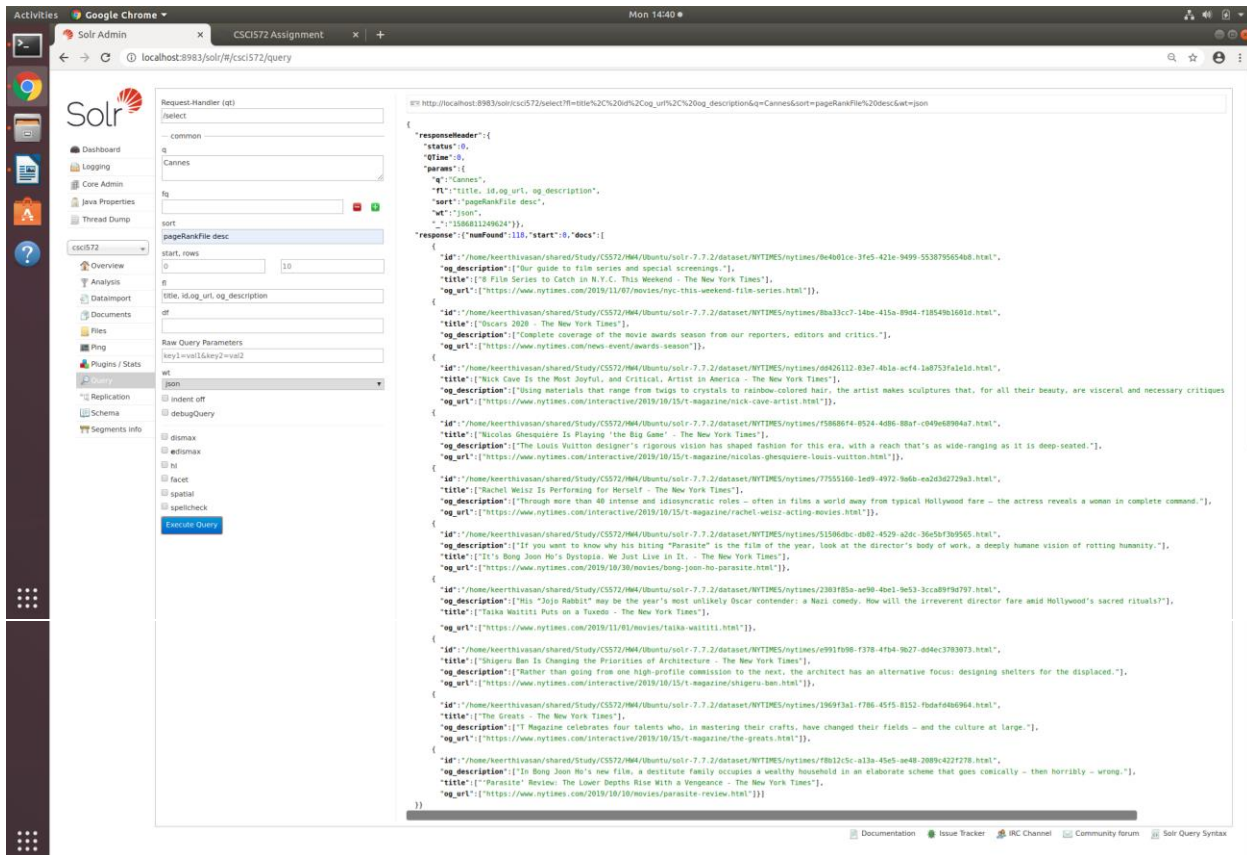
```

## Creation of Edgelist and PageRank

- 1) Using **Jsoup** library, parsed the documents in **JAVA** to extract the Outgoing links and created an **Edgelist** text file (Containing only those links present in the mapping file).
- 2) **NetworkX** is a **Python** library to deal with graphs and complex networks. Using this library, created a **Directional Graph** with Document\_Ids as the Nodes and the Interconnecting links as the Edges by reading from the Edgelist file.
- 3) Calculated the Page Rank of the documents using PageRank function of the DiGraph. The configuration was set as follows:
  - a. Damping factor was set to the default value 0.85.
  - b. Node personalization was not used.
  - c. Max-iterations was set to 30.
  - d. Error tolerance was set at  $10^{-6}$ .
  - e. No starting value was given to the pages.
  - f. Weights correspond to the edges.
- 4) **external\_pageRankFile.txt** file was created and placed in the data folder of the Solr Core.

- 5) Added a field entry in **managed-schema** to refer this PageRank score while querying. Also defined **Listeners** in **solrconfig.xml** file to reload the external file when either a searcher is loaded or when a new searcher is started.
- 6) Reloaded the csci572 core and added **"pageRankFile desc"** in the **sort** field to enable searching via PageRank score instead of Lucene's default TF-IDF scores.

### Querying Solr with "PageRankFile Desc" and "Cannes"



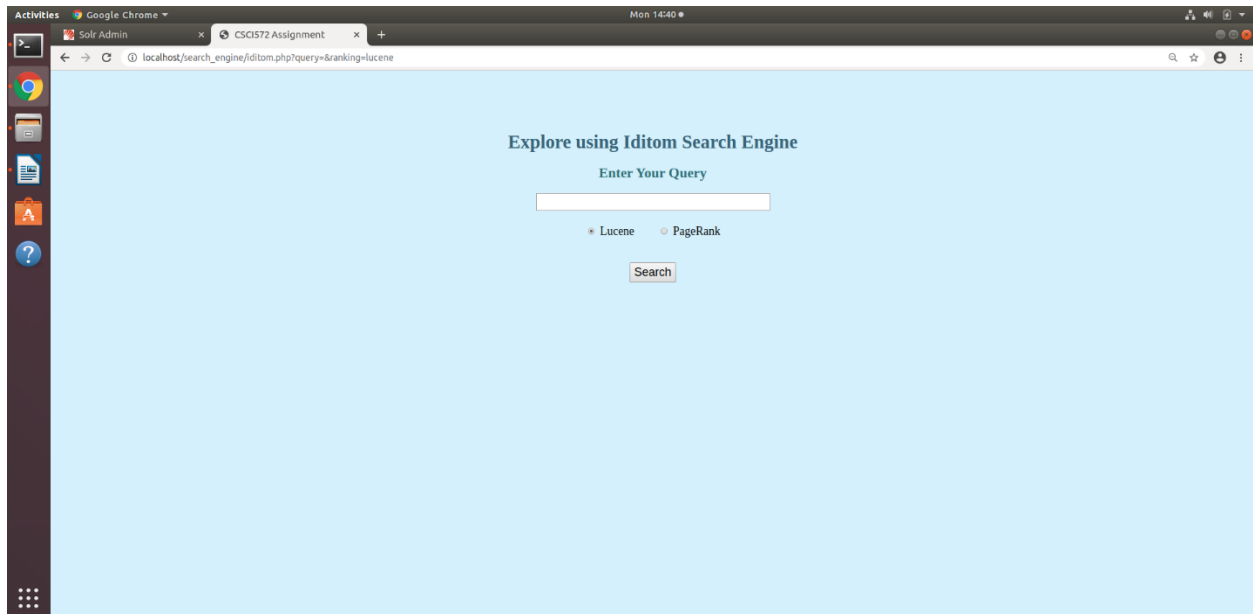
The screenshot shows the Solr Admin interface in a web browser. The left sidebar contains navigation links like Dashboard, Logging, Core Admin, etc. The main area shows a query for 'Cannes' with the sort field set to 'pageRankFile desc'. The results are displayed in a table with columns: id, title, url, og\_description, and og\_url. The results show various articles related to the Cannes Film Festival, including 'Our guide to film series and special screenings', 'Complete coverage of the movie awards season from our reporters, editors and critics', and 'The Louis Vuitton designer's rigorous vision has shaped fashion for this era'.

### EXPLANATION OF WHY SOME PAGES HAVE HIGHER PAGE RANK VALUES

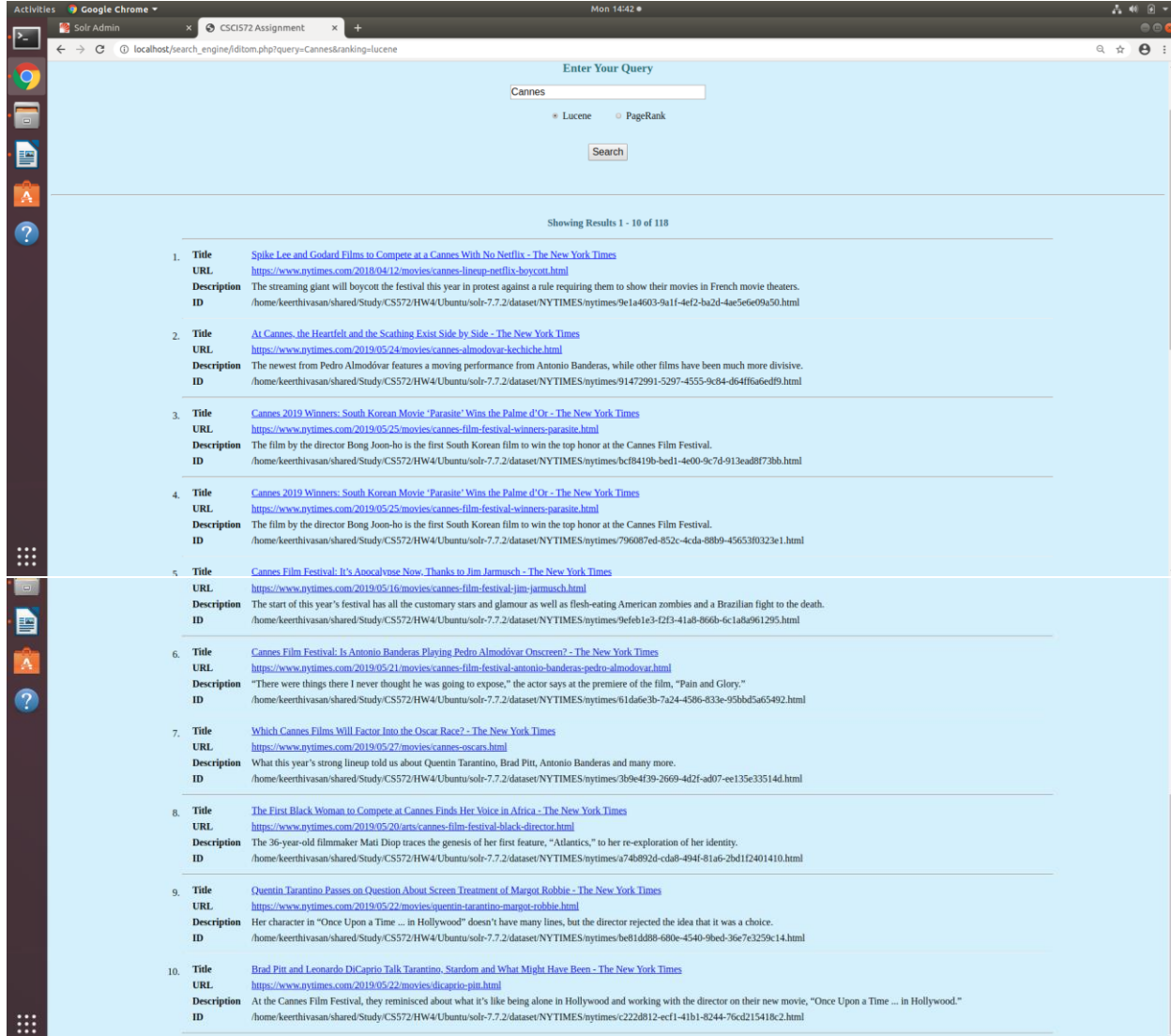
Page Rank is an algorithm which measures the importance of a webpage by tracking the number of links received from other webpages. By observing the Page rank scores of the Query results, we infer that the Homepage and the Category pages are prone to get a higher score since many pages have external links to them. Hence these Parent pages can end up being displayed in the top results even when are not very relevant to the actual query. This is one of the reasons for combining Page rank value with other scores such as TF-IDF to yield relevant results.

## Web Client and Web Server

### Search Engine Home Page



## Querying Lucene



Enter Your Query

Cannes

\* Lucene \* PageRank

Search

Showing Results 1 - 10 of 118

- Title** [Spike Lee and Godard Films to Compete at a Cannes With No Netflix - The New York Times](https://www.nytimes.com/2018/04/12/movies/cannes-lineup-netflix-boycott.html)

**URL** <https://www.nytimes.com/2018/04/12/movies/cannes-lineup-netflix-boycott.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.

**ID** /home/keerthivasan/shared/Study/CS572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/9e1a4603-9a1f-4e12-ba2d-4ae5e6e09a50.html
- Title** [At Cannes, the Heartfelt and the Scathing Exist Side by Side - The New York Times](https://www.nytimes.com/2019/05/24/movies/cannes-almodovar-kechiche.html)

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- Title** [Cannes 2019 Winners: South Korean Movie 'Parasite' Wins the Palme d'Or - The New York Times](https://www.nytimes.com/2019/05/25/movies/cannes-film-festival-winners-parasite.html)

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- Title** [Cannes 2019 Winners: South Korean Movie 'Parasite' Wins the Palme d'Or - The New York Times](https://www.nytimes.com/2019/05/25/movies/cannes-film-festival-winners-parasite.html)

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- Title** [Cannes Film Festival: It's Anacalvise Now, Thanks to Jim Jarmusch - The New York Times](https://www.nytimes.com/2019/05/16/movies/cannes-film-festival-jim-jarmusch.html)

**URL** <https://www.nytimes.com/2019/05/16/movies/cannes-film-festival-jim-jarmusch.html>

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- Title** [Cannes Film Festival: Is Antonio Banderas Playing Pedro Almodóvar Onscreen? - The New York Times](https://www.nytimes.com/2019/05/21/movies/cannes-film-festival-antonio-banderas-pedro-almodovar.html)

**URL** <https://www.nytimes.com/2019/05/21/movies/cannes-film-festival-antonio-banderas-pedro-almodovar.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."

**ID** /home/keerthivasan/shared/Study/CS572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/61dafc3b-7a24-4586-833e-95b8d5af5492.html
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**URL** <https://www.nytimes.com/2019/05/22/movies/cannes-oscars.html>

**Description** What this year's strong lineup told us about Quentin Tarantino, Brad Pitt, Antonio Banderas and many more.

**ID** /home/keerthivasan/shared/Study/CS572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/3b9e4f39-2669-462f-ad07-ee135e33514d.html
- Title** [The First Black Woman to Compete at Cannes Finds Her Voice in Africa - The New York Times](https://www.nytimes.com/2019/05/20/arts/cannes-film-festival-black-director.html)

**URL** <https://www.nytimes.com/2019/05/20/arts/cannes-film-festival-black-director.html>

**Description** The 36-year-old filmmaker Mati Diop traces the genesis of her first feature, "Atlantics," to her re-exploration of her identity.

**ID** /home/keerthivasan/shared/Study/CS572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/a74b892d-cda8-494f-81a6-2bd1f2401410.html
- Title** [Quentin Tarantino Passes on Question About Screen Treatment of Margot Robbie - The New York Times](https://www.nytimes.com/2019/05/22/movies/quentin-tarantino-margot-robbie.html)

**URL** <https://www.nytimes.com/2019/05/22/movies/quentin-tarantino-margot-robbie.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.

**ID** /home/keerthivasan/shared/Study/CS572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/be81dd88-680e-4540-9bed-36e7c3259c14.html
- Title** [Brad Pitt and Leonardo DiCaprio Talk Tarantino, Stardom and What Might Have Been - The New York Times](https://www.nytimes.com/2019/05/22/movies/dicaprio-pitt.html)

**URL** <https://www.nytimes.com/2019/05/22/movies/dicaprio-pitt.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."

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## Clicking First Link

Activities Google Chrome Mon 14:43


Solr Admin Spike Lee and Godard Film

nytimes.com/2018/04/12/movies/cannes-lineup-netflix-boycott.html

MOVIES The New York Times

ADVERTISMENT

*Spike Lee and Godard Films to Compete at a Cannes With No Netflix*



Waiting for securepubads.g.doubleclick.net...

Showing Results 1 - 10 of 118

- 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>

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**ID** /home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/9e1a4603-9a1f-4ef2-ba2d-4ae5e6e09a50.html

## Querying PageRank

Activities Google Chrome Mon 14:42

Solr Admin x CSCI572 Assignment x

localhost/search\_engine/ldtom.php?query=Cannes&ranking=pageRank

### Explore using Iditom Search Engine

Enter Your Query

Cannes

Lucene PageRank

Search

Showing Results 1 - 10 of 118

- Title** [The New York Times in Print for Sunday, May 19, 2019 - The New York Times](#)

**URL** <https://www.nytimes.com/issue/todayspaper/2019.05.19/todays-new-york-times>

**Description** Today's Paper

**ID** /home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/6c2f866e-f337-4b50-a17f-b7fe025afcd1.html
- Title** [The New York Times in Print for Sunday, May 20, 2018 - The New York Times](#)

**URL** <https://www.nytimes.com/issue/todayspaper/2018.05.20/todays-new-york-times>

**Description** Today's Paper

**ID** /home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/552793f5-9da1-48af-ac7f-7976db106c67.html
- Title** [Roman Polanski Accused of Rape by Former German Actress - The New York Times](#)

**URL** <https://www.nytimes.com/2017/10/03/movies/roman-polanski-rape-accusation.html>

**Description** The former German actress, Renate Langer, said she was raped at 15 in a house in Switzerland where she had gone in hopes of getting a part in a film.

**ID** /home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/a1860762-aa54-47dc-af6a-28edcb75c2f5.html
- Title** [The New York Times in Print for Sunday, May 13, 2018 - The New York Times](#)

**URL** <https://www.nytimes.com/issue/todayspaper/2018.05.13/todays-new-york-times>

**Description** Today's Paper

**ID** /home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/b91f623-4beb-42d5-891b-2c872087d369.html
- Title** [Roman Polanski's New Film Will Compete at Venice Film Festival - The New York Times](#)

**URL** <https://www.nytimes.com/2019/07/25/arts/venice-film-festival-roman-polanski.html>

**Description** The latest movie from the director, who fled the United States in 1978 while awaiting sentencing for statutory rape, deals with a famous miscarriage of justice, the Dreyfus affair.

**ID** /home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/bf9b315-97ca-428a-9334-a0b637a27f5d.html
- 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>

**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.

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- Title** [Fall Movies 2019: Here's What's Coming Soon to Theaters - The New York Times](#)

**URL** <https://www.nytimes.com/2019/09/06/movies/fall-movies.html>

**Description** We've picked out the films you need to know about, from the most anticipated ("The Irishman," "Star Wars") to the most curious ("Cats," paws down).

**ID** /home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/81f2c85f-155d-4e22-b69b-bf275fa3d67.html
- Title** [La desgracia de los milénials que #AmanSuTrabajo - Español](#)

**URL** <https://www.nytimes.com/es/2019/02/04/milenial-trabajo-sueldos/>

**Description** He visto a las mentes más brillantes de mi generación trabajar jornadas de 18 horas para luego alardear de ello en Instagram. ¿Cuándo se convirtió la adicción al trabajo en un estilo de vida?

**ID** /home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/dc3d1f27-24c6-4e74-9def-6f6a060da125.html
- Title** [In Oscar Bid, Netflix Will Release 3 Movies in Theaters First - The New York Times](#)

**URL** <https://www.nytimes.com/2018/10/31/business/netflix-theater-streaming-release.html>

**Description** A limited number of cinemas will receive an exclusive period of one to three weeks to play the films — a departure from Netflix's streaming model.

**ID** /home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/ec374306-a5ad-4df9-800e-51954502a0e9.html
- Title** [Francis Lai, Who Wrote the 'Love Story' Theme, Is Dead at 86 - The New York Times](#)

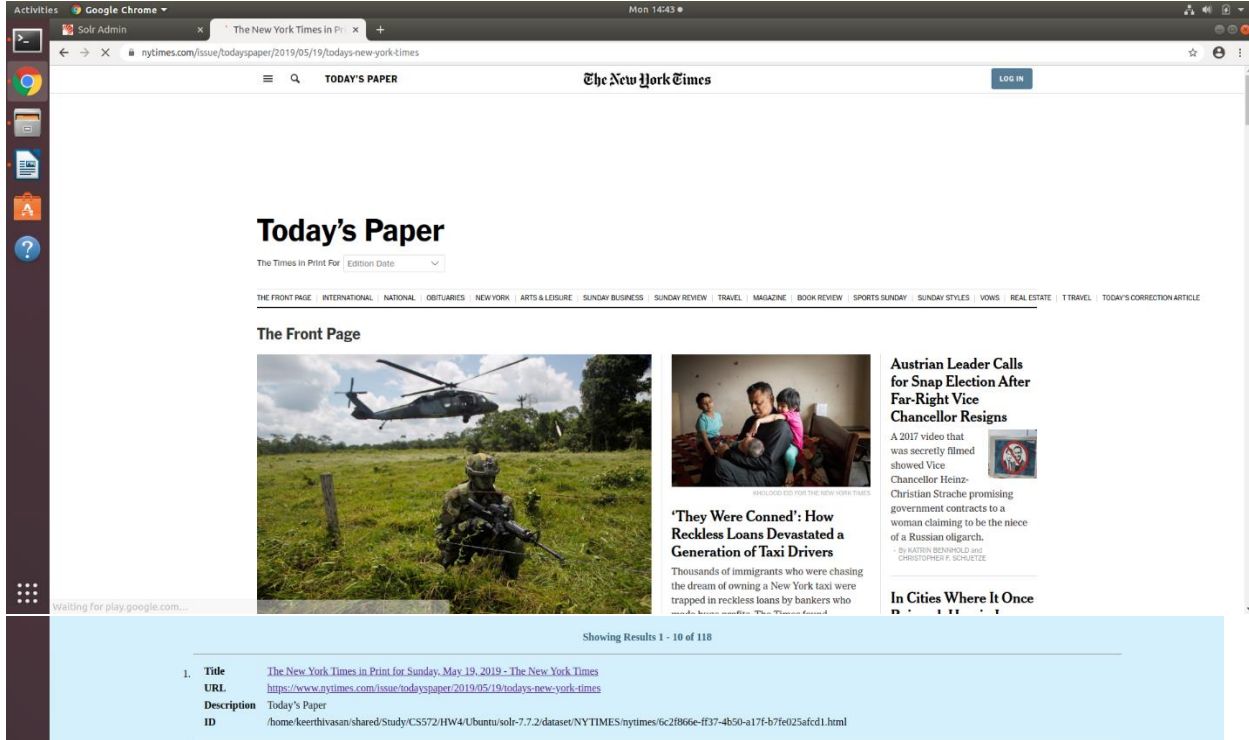
**URL** <https://www.nytimes.com/2018/11/08/obituaries/francis-lai-dead.html>

**Description** His more than 100 movie scores also included "A Man and a Woman," whose distinctive title song was a hit on both sides of the Atlantic.

**ID** /home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/dc56d1d2-faad-4688-8cd2-e61e1320e37d.html



## Clicking First Link



Activities Google Chrome Mon 14:43

Solr Admin x The New York Times in Print x

nytimes.com/issue/todayspaper/2019/05/19/todays-new-york-times



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### Today's Paper

The Times in Print For Edition Date

THE FRONT PAGE INTERNATIONAL NATIONAL OBITUARIES NEW YORK ARTS & LEISURE SUNDAY BUSINESS SUNDAY REVIEW TRAVEL MAGAZINE BOOK REVIEW SPORTS SUNDAY SUNDAY STYLES VOWS REAL ESTATE IT TRAVEL TODAY'S CORRECTION ARTICLE

#### The Front Page

#### 'They Were Conned': How Reckless Loans Devastated a Generation of Taxi Drivers

Thousands of immigrants who were chasing the dream of owning a New York taxi were trapped in reckless loans by bankers who

#### Austrian Leader Calls for Snap Election After Far-Right Vice Chancellor Resigns

A 2017 video that was secretly filmed showed Vice Chancellor Heinz-Christian Strache promising government contracts to a woman claiming to be the niece of a Russian oligarch.

By HARRIS BENKOWITZ and CHRISTOPHER F. SCHUTZKE

#### In Cities Where It Once

Showing Results 1 - 10 of 118

- Title** The New York Times in Print for Sunday, May 19, 2019 - The New York Times  
**URL** <https://www.nytimes.com/issue/todayspaper/2019/05/19/todays-new-york-times>  
**Description** Today's Paper  
**ID** /home/keerthivasan/shared/Study/CSCI572/HW4/Ubuntu/solr-7.7.2/dataset/NYTIMES/nytimes/6c2f866e-f37-4b50-a17f-b7e025afcd1.html

## QUERY RESULTS OVERLAPS BETWEEN LUCENE AND PAGERANK

Query	Number of Overlaps
Cannes	0
Congress	0
Democrats	0
Patriot Movement	0
Republicans	0
Senate	0
Olympics 2020	0
Stock	0
Virus	0



**QUERY RESULTS****1. Cannes**

Lucene	PageRank
<a href="https://www.nytimes.com/2018/04/12/movies/cannes-lineup-netflix-boycott.html">https://www.nytimes.com/2018/04/12/movies/cannes-lineup-netflix-boycott.html</a>	<a href="https://www.nytimes.com/2019/11/07/movies/nyc-this-weekend-film-series.html">https://www.nytimes.com/2019/11/07/movies/nyc-this-weekend-film-series.html</a>
<a href="https://www.nytimes.com/2019/05/24/movies/cannes-almodovar-kechiche.html">https://www.nytimes.com/2019/05/24/movies/cannes-almodovar-kechiche.html</a>	<a href="https://www.nytimes.com/news-event/awards-season">https://www.nytimes.com/news-event/awards-season</a>
<a href="https://www.nytimes.com/2019/05/25/movies/cannes-film-festival-winners-parasite.html">https://www.nytimes.com/2019/05/25/movies/cannes-film-festival-winners-parasite.html</a>	<a href="https://www.nytimes.com/interactive/2019/10/15/t-magazine/nick-cave-artist.html">https://www.nytimes.com/interactive/2019/10/15/t-magazine/nick-cave-artist.html</a>
<a href="https://www.nytimes.com/2019/05/25/movies/cannes-film-festival-winners-parasite.html">https://www.nytimes.com/2019/05/25/movies/cannes-film-festival-winners-parasite.html</a>	<a href="https://www.nytimes.com/interactive/2019/10/15/t-magazine/nicolas-ghesquiere-louis-vuitton.html">https://www.nytimes.com/interactive/2019/10/15/t-magazine/nicolas-ghesquiere-louis-vuitton.html</a>
<a href="https://www.nytimes.com/2019/05/16/movies/cannes-film-festival-jim-jarmusch.html">https://www.nytimes.com/2019/05/16/movies/cannes-film-festival-jim-jarmusch.html</a>	<a href="https://www.nytimes.com/interactive/2019/10/15/t-magazine/rachel-weisz-acting-movies.html">https://www.nytimes.com/interactive/2019/10/15/t-magazine/rachel-weisz-acting-movies.html</a>
<a href="https://www.nytimes.com/2019/05/21/movies/cannes-film-festival-antonio-banderas-pedro-almodovar.html">https://www.nytimes.com/2019/05/21/movies/cannes-film-festival-antonio-banderas-pedro-almodovar.html</a>	<a href="https://www.nytimes.com/2019/10/30/movies/bong-joon-ho-parasite.html">https://www.nytimes.com/2019/10/30/movies/bong-joon-ho-parasite.html</a>
<a href="https://www.nytimes.com/2019/05/27/movies/cannes-oscars.html">https://www.nytimes.com/2019/05/27/movies/cannes-oscars.html</a>	<a href="https://www.nytimes.com/2019/11/01/movies/tai-ika-waititi.html">https://www.nytimes.com/2019/11/01/movies/tai-ika-waititi.html</a>
<a href="https://www.nytimes.com/2019/05/20/arts/cannes-film-festival-black-director.html">https://www.nytimes.com/2019/05/20/arts/cannes-film-festival-black-director.html</a>	<a href="https://www.nytimes.com/interactive/2019/10/15/t-magazine/shigeru-ban.html">https://www.nytimes.com/interactive/2019/10/15/t-magazine/shigeru-ban.html</a>
<a href="https://www.nytimes.com/2019/05/22/movies/quentin-tarantino-margot-robbie.html">https://www.nytimes.com/2019/05/22/movies/quentin-tarantino-margot-robbie.html</a>	<a href="https://www.nytimes.com/interactive/2019/10/15/t-magazine/the-greats.html">https://www.nytimes.com/interactive/2019/10/15/t-magazine/the-greats.html</a>
<a href="https://www.nytimes.com/2019/05/22/movies/di-caprio-pitt.html">https://www.nytimes.com/2019/05/22/movies/di-caprio-pitt.html</a>	<a href="https://www.nytimes.com/2019/10/10/movies/parasite-review.html">https://www.nytimes.com/2019/10/10/movies/parasite-review.html</a>

## 2. Congress

Lucene	PageRank
<a href="https://www.nytimes.com/interactive/2019/us/politics/trump-impeachment-congress-list.html">https://www.nytimes.com/interactive/2019/us/politics/trump-impeachment-congress-list.html</a>	<a href="https://www.nytimes.com">https://www.nytimes.com</a>
<a href="https://www.nytimes.com/2019/11/05/magazine/congress-president-impeachment.html">https://www.nytimes.com/2019/11/05/magazine/congress-president-impeachment.html</a>	<a href="https://www.nytimes.com/section/magazine">https://www.nytimes.com/section/magazine</a>
<a href="https://www.nytimes.com/2019/11/05/magazine/congress-president-impeachment.html">https://www.nytimes.com/2019/11/05/magazine/congress-president-impeachment.html</a>	<a href="https://www.nytimes.com/section/t-magazine">https://www.nytimes.com/section/t-magazine</a>
<a href="https://www.nytimes.com/2019/07/25/us/politics/mueller-impeachment.html">https://www.nytimes.com/2019/07/25/us/politics/mueller-impeachment.html</a>	<a href="https://www.nytimes.com/issue/todayspaper/2019/11/10/todays-new-york-times">https://www.nytimes.com/issue/todayspaper/2019/11/10/todays-new-york-times</a>
<a href="https://www.nytimes.com/2019/07/26/us/politics/donald-trump-impeachment.html">https://www.nytimes.com/2019/07/26/us/politics/donald-trump-impeachment.html</a>	<a href="https://www.nytimes.com/section/jobs">https://www.nytimes.com/section/jobs</a>
<a href="https://www.nytimes.com/2018/09/17/us/politics/bloomberg-president-2020-democrat.html">https://www.nytimes.com/2018/09/17/us/politics/bloomberg-president-2020-democrat.html</a>	<a href="https://www.nytimes.com/video/us/politics/10000005524412/paul-manafort-fraud-laundry-scandal.html">https://www.nytimes.com/video/us/politics/10000005524412/paul-manafort-fraud-laundry-scandal.html</a>
<a href="https://www.nytimes.com/2018/11/21/obituaries/james-billington-dead.html">https://www.nytimes.com/2018/11/21/obituaries/james-billington-dead.html</a>	<a href="https://www.nytimes.com/video/us/politics/10000006067682/president-trump-impeach-questions-answers-michael-cohen.html">https://www.nytimes.com/video/us/politics/10000006067682/president-trump-impeach-questions-answers-michael-cohen.html</a>
<a href="https://www.nytimes.com/2019/09/07/us/politics/congress-assault-weapons-ban.html">https://www.nytimes.com/2019/09/07/us/politics/congress-assault-weapons-ban.html</a>	<a href="https://www.nytimes.com/video/us/politics/10000006639814/presidential-candidates-campaigns.html">https://www.nytimes.com/video/us/politics/10000006639814/presidential-candidates-campaigns.html</a>
<a href="https://www.nytimes.com/2019/08/07/us/politics/foreign-aid-freeze-congress.html">https://www.nytimes.com/2019/08/07/us/politics/foreign-aid-freeze-congress.html</a>	<a href="https://www.nytimes.com/video/opinion/10000006210828/russia-disinformation-fake-news.html">https://www.nytimes.com/video/opinion/10000006210828/russia-disinformation-fake-news.html</a>
<a href="https://www.nytimes.com/1973/05/13/archives/constitutional-erin-ah-thi-nk-the-senate-is-determined-to-recover.html">https://www.nytimes.com/1973/05/13/archives/constitutional-erin-ah-thi-nk-the-senate-is-determined-to-recover.html</a>	<a href="https://www.nytimes.com/video/opinion/10000006188105/countering-disinformation-active-measures.html">https://www.nytimes.com/video/opinion/10000006188105/countering-disinformation-active-measures.html</a>

### 3. Democrats

Lucene	PageRank
<a href="https://www.nytimes.com/2018/09/04/us/politics/ayanna-pressley-massachusetts.html">https://www.nytimes.com/2018/09/04/us/politics/ayanna-pressley-massachusetts.html</a>	<a href="https://www.nytimes.com">https://www.nytimes.com</a>
<a href="https://www.nytimes.com/2018/11/07/us/politics/election-history-firsts-blackburn-pressley.html">https://www.nytimes.com/2018/11/07/us/politics/election-history-firsts-blackburn-pressley.html</a>	<a href="https://www.nytimes.com/video">https://www.nytimes.com/video</a>
<a href="https://www.nytimes.com/2019/10/16/us/politics/democrats-impeachment.html">https://www.nytimes.com/2019/10/16/us/politics/democrats-impeachment.html</a>	<a href="https://www.nytimes.com/section/magazine">https://www.nytimes.com/section/magazine</a>
<a href="https://www.nytimes.com/2019/09/29/us/politics/pelosi-trump-impeachment.html">https://www.nytimes.com/2019/09/29/us/politics/pelosi-trump-impeachment.html</a>	<a href="https://www.nytimes.com/section/politics">https://www.nytimes.com/section/politics</a>
<a href="https://www.nytimes.com/2018/01/23/us/politics/impeach-trump-democrats-tom-steyer.html">https://www.nytimes.com/2018/01/23/us/politics/impeach-trump-democrats-tom-steyer.html</a>	<a href="https://www.nytimes.com/section/us">https://www.nytimes.com/section/us</a>
<a href="https://www.nytimes.com/2019/09/24/us/politics/trump-democrats.html">https://www.nytimes.com/2019/09/24/us/politics/trump-democrats.html</a>	<a href="https://www.nytimes.com/section/opinion">https://www.nytimes.com/section/opinion</a>
<a href="https://www.nytimes.com/2019/10/28/us/politics/trump-impeachment-subpoena-house.html">https://www.nytimes.com/2019/10/28/us/politics/trump-impeachment-subpoena-house.html</a>	<a href="https://www.nytimes.com/issue/todayspaper/2019/11/10/todays-new-york-times">https://www.nytimes.com/issue/todayspaper/2019/11/10/todays-new-york-times</a>
<a href="https://www.nytimes.com/issue/magazine/2019/06/25/the-61619-issue">https://www.nytimes.com/issue/magazine/2019/06/25/the-61619-issue</a>	<a href="https://www.nytimes.com/section/opinion/columnists">https://www.nytimes.com/section/opinion/columnists</a>
<a href="https://www.nytimes.com/2019/11/05/opinion/trump-democrats-2020.html">https://www.nytimes.com/2019/11/05/opinion/trump-democrats-2020.html</a>	<a href="https://www.nytimes.com/section/upshot">https://www.nytimes.com/section/upshot</a>
<a href="https://www.nytimes.com/2019/09/11/opinion/black-voters-democrats-2020-election.html">https://www.nytimes.com/2019/09/11/opinion/black-voters-democrats-2020-election.html</a>	<a href="https://www.nytimes.com/news-event/2020-election">https://www.nytimes.com/news-event/2020-election</a>

**4. Patriot Movement**

Lucene	PageRank
<a href="https://www.nytimes.com/2019/08/14/opinion/joe-walsh-trump-primary.html">https://www.nytimes.com/2019/08/14/opinion/joe-walsh-trump-primary.html</a>	<a href="https://www.nytimes.com">https://www.nytimes.com</a>
<a href="https://www.nytimes.com/1976/08/27/archives/lewis-michaux-92-dies-ran-bookstore-in-harlem.html">https://www.nytimes.com/1976/08/27/archives/lewis-michaux-92-dies-ran-bookstore-in-harlem.html</a>	<a href="https://www.nytimes.com/video">https://www.nytimes.com/video</a>
<a href="https://www.nytimes.com/2019/05/15/us/politics/us-iraq-embassy-evacuation.html">https://www.nytimes.com/2019/05/15/us/politics/us-iraq-embassy-evacuation.html</a>	<a href="https://www.nytimes.com/video/opinion">https://www.nytimes.com/video/opinion</a>
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<a href="https://www.nytimes.com/2019/10/27/obituaries/john-conyers-jr-dead.html">https://www.nytimes.com/2019/10/27/obituaries/john-conyers-jr-dead.html</a>	<a href="https://www.nytimes.com/section/opinion">https://www.nytimes.com/section/opinion</a>
<a href="https://www.nytimes.com/2018/12/29/obituaries/shehu-shagari-dead.html">https://www.nytimes.com/2018/12/29/obituaries/shehu-shagari-dead.html</a>	<a href="https://www.nytimes.com/section/technology">https://www.nytimes.com/section/technology</a>
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<a href="https://www.nytimes.com/2019/09/23/opinion/democrats-republicans.html">https://www.nytimes.com/2019/09/23/opinion/democrats-republicans.html</a>	<a href="https://www.nytimes.com/video/opinion/100000006525694/stonewall-the-making-of-a-monument.html">https://www.nytimes.com/video/opinion/100000006525694/stonewall-the-making-of-a-monument.html</a>
<a href="https://www.nytimes.com/2019/10/30/opinion/alexander-vindman-trump-ukraine.html">https://www.nytimes.com/2019/10/30/opinion/alexander-vindman-trump-ukraine.html</a>	<a href="https://www.nytimes.com/2019/11/01/arts/television/new-to-stream-netflix.html">https://www.nytimes.com/2019/11/01/arts/television/new-to-stream-netflix.html</a>

## 5. Republicans

Lucene	PageRank
<a href="https://www.nytimes.com/by/catie-edmondson">https://www.nytimes.com/by/catie-edmondson</a>	<a href="https://www.nytimes.com">https://www.nytimes.com</a>
<a href="https://www.nytimes.com/2019/10/24/us/politics/senate-republicans-trump.html">https://www.nytimes.com/2019/10/24/us/politics/senate-republicans-trump.html</a>	<a href="https://www.nytimes.com/section/politics">https://www.nytimes.com/section/politics</a>
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<a href="https://www.nytimes.com/2019/11/04/us/politics/trump-republicans-impeachment.html">https://www.nytimes.com/2019/11/04/us/politics/trump-republicans-impeachment.html</a>	<a href="https://www.nytimes.com/issue/todayspaper/2019/11/10/todays-new-york-times">https://www.nytimes.com/issue/todayspaper/2019/11/10/todays-new-york-times</a>
<a href="https://www.nytimes.com/2019/10/31/us/politics/house-impeachment-partisan-vote.html">https://www.nytimes.com/2019/10/31/us/politics/house-impeachment-partisan-vote.html</a>	<a href="https://www.nytimes.com/section/upshot">https://www.nytimes.com/section/upshot</a>
<a href="https://www.nytimes.com/2019/11/04/us/politics/trump-republicans-impeachment.html">https://www.nytimes.com/2019/11/04/us/politics/trump-republicans-impeachment.html</a>	<a href="https://www.nytimes.com/news-event/2020-election">https://www.nytimes.com/news-event/2020-election</a>
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<a href="https://www.nytimes.com/2019/11/06/us/trump-senate-republicans-courts.html">https://www.nytimes.com/2019/11/06/us/trump-senate-republicans-courts.html</a>	<a href="https://www.nytimes.com/2019/11/09/us/politics/virginia-elections-democrats-republicans.html">https://www.nytimes.com/2019/11/09/us/politics/virginia-elections-democrats-republicans.html</a>

**6. Senate**

Lucene	PageRank
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<a href="https://www.nytimes.com/2019/10/26/us/trump-senate-presidency.html">https://www.nytimes.com/2019/10/26/us/trump-senate-presidency.html</a>	<a href="https://www.nytimes.com/section/climate">https://www.nytimes.com/section/climate</a>
<a href="https://www.nytimes.com/2019/08/03/us/politics/senate-votes-mcconnell.html">https://www.nytimes.com/2019/08/03/us/politics/senate-votes-mcconnell.html</a>	<a href="https://www.nytimes.com/news-event/2020-election">https://www.nytimes.com/news-event/2020-election</a>
<a href="https://www.nytimes.com/2019/08/22/us/politics/john-hickenlooper-senate-2020.html">https://www.nytimes.com/2019/08/22/us/politics/john-hickenlooper-senate-2020.html</a>	<a href="https://www.nytimes.com/video/opinion/100000006064751/coal-miner-to-trump-coal-mining-isnt-coming-back.html">https://www.nytimes.com/video/opinion/100000006064751/coal-miner-to-trump-coal-mining-isnt-coming-back.html</a>
<a href="https://www.nytimes.com/2019/11/08/us/impeachment-senate-democrats.html">https://www.nytimes.com/2019/11/08/us/impeachment-senate-democrats.html</a>	<a href="https://timesjourneys.nytimes.com/tour-type/">https://timesjourneys.nytimes.com/tour-type/</a>
<a href="https://www.nytimes.com/2019/10/24/us/politics/senate-republicans-trump.html">https://www.nytimes.com/2019/10/24/us/politics/senate-republicans-trump.html</a>	<a href="https://www.nytimes.com/times-journeys/tour-type/small-group/">https://www.nytimes.com/times-journeys/tour-type/small-group/</a>
<a href="https://www.nytimes.com/2019/08/31/us/politics/senate-race-2020.html">https://www.nytimes.com/2019/08/31/us/politics/senate-race-2020.html</a>	<a href="https://www.nytimes.com/times-journeys/trip-type/politics-and-perspective/">https://www.nytimes.com/times-journeys/trip-type/politics-and-perspective/</a>
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**7. Olympics 2020**

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<a href="https://www.nytimes.com/2017/12/05/sports/olympics/ioc-russia-winter-olympics.html">https://www.nytimes.com/2017/12/05/sports/olympics/ioc-russia-winter-olympics.html</a>	<a href="https://www.nytimes.com/section/arts/television">https://www.nytimes.com/section/arts/television</a>
<a href="https://www.nytimes.com/video/sports/olympics/100000005750317/johnny-weir-tara-lipinski-figure-skating.html">https://www.nytimes.com/video/sports/olympics/100000005750317/johnny-weir-tara-lipinski-figure-skating.html</a>	<a href="https://www.nytimes.com/video/opinion">https://www.nytimes.com/video/opinion</a>
<a href="https://www.nytimes.com/video/sports/olympics/100000005750317/johnny-weir-tara-lipinski-figure-skating.html">https://www.nytimes.com/video/sports/olympics/100000005750317/johnny-weir-tara-lipinski-figure-skating.html</a>	<a href="https://www.nytimes.com/es/">https://www.nytimes.com/es/</a>
<a href="https://www.nytimes.com/video/sports/olympics/100000005752444/south-korea-speedskaters.html">https://www.nytimes.com/video/sports/olympics/100000005752444/south-korea-speedskaters.html</a>	<a href="https://www.nytimes.com/section/magazine">https://www.nytimes.com/section/magazine</a>
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<a href="https://www.nytimes.com/2018/04/23/sports/breakdancing-olympics.html">https://www.nytimes.com/2018/04/23/sports/breakdancing-olympics.html</a>	<a href="https://www.nytimes.com/section/politics">https://www.nytimes.com/section/politics</a>
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<a href="https://www.nytimes.com/by/donald-g-mcneil-jr">https://www.nytimes.com/by/donald-g-mcneil-jr</a>	<a href="https://www.nytimes.com/section/health">https://www.nytimes.com/section/health</a>
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