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**Website Indexed:** Fox News

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### Step 1: Installation of VirtualBox and Ubuntu on Windows Machine

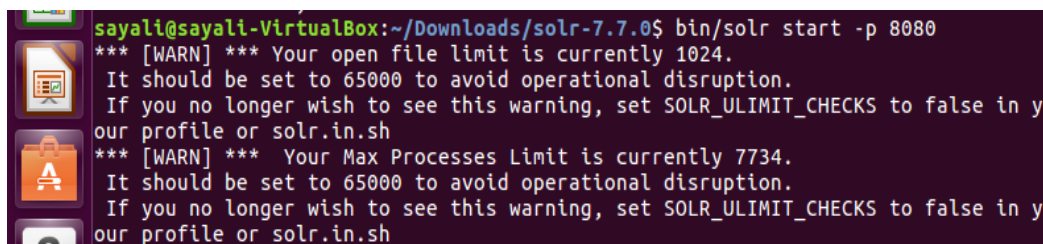
- Downloaded VirtualBox and Ubuntu from the links provided.
- Created a Virtual Machine in VirtualBox:
  - New** -> Name: CSCI572-Linux, Type: Linux, Version: Ubuntu (64-bit); **Next** -> Memory size: 2048 MB; **Next** -> Create a virtual hard disk now; **Create** -> VDI (Virtual Disk Image); **Next** -> Dynamically allocated; **Next** -> File size: 128GB; **Create**.
- Started the virtual machine created above by clicking the **Start** button.
- Selected ubuntu downloaded in Step 1 as the start-up disk->**Start**.
- Clicked on **Install Ubuntu**.
- Provided details like: Name, Computer's name, Username, Password->**Continue**.
- Added guest devices to the machine by following the instructions provided in the pdf.

### Step 2: Installation of Java in Virtual Machine

- Installed Java by following the procedure mentioned in the pdf.

### Step 3: Installation of Solr and Indexing HTML Files

- Downloaded Solr 7.7.0. Unzipped and opened the terminal from the unzipped folder.
- Created a collection on one port and uploaded the provided HTML files for FOX NEWS by following commands as below:
  - **\$ bin/solr start -p 8080** (started Solr on port 8080)

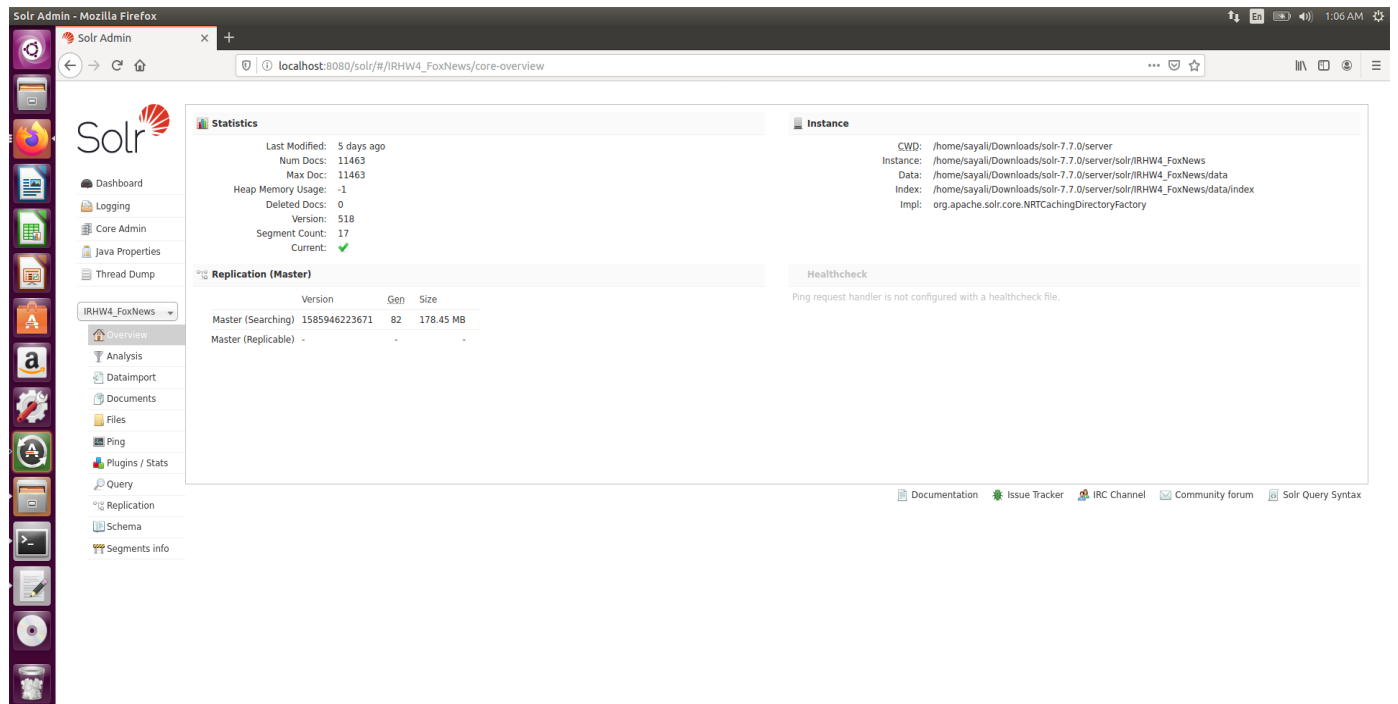
A terminal window screenshot showing the command 'bin/solr start -p 8080' being executed. The output displays two warnings: one about the open file limit (1024 vs 65000) and another about the max processes limit (7734 vs 65000). Both warnings suggest setting 'SOLR\_ULIMIT\_CHECKS' to false in the profile or solr.in.sh file to avoid operational disruption.

```
sayali@sayali-VirtualBox:~/Downloads/solr-7.7.0$ bin/solr start -p 8080
*** [WARN] *** Your open file limit is currently 1024.
It should be set to 65000 to avoid operational disruption.
If you no longer wish to see this warning, set SOLR_ULIMIT_CHECKS to false in y
our profile or solr.in.sh
*** [WARN] *** Your Max Processes Limit is currently 7734.
It should be set to 65000 to avoid operational disruption.
If you no longer wish to see this warning, set SOLR_ULIMIT_CHECKS to false in y
our profile or solr.in.sh
```

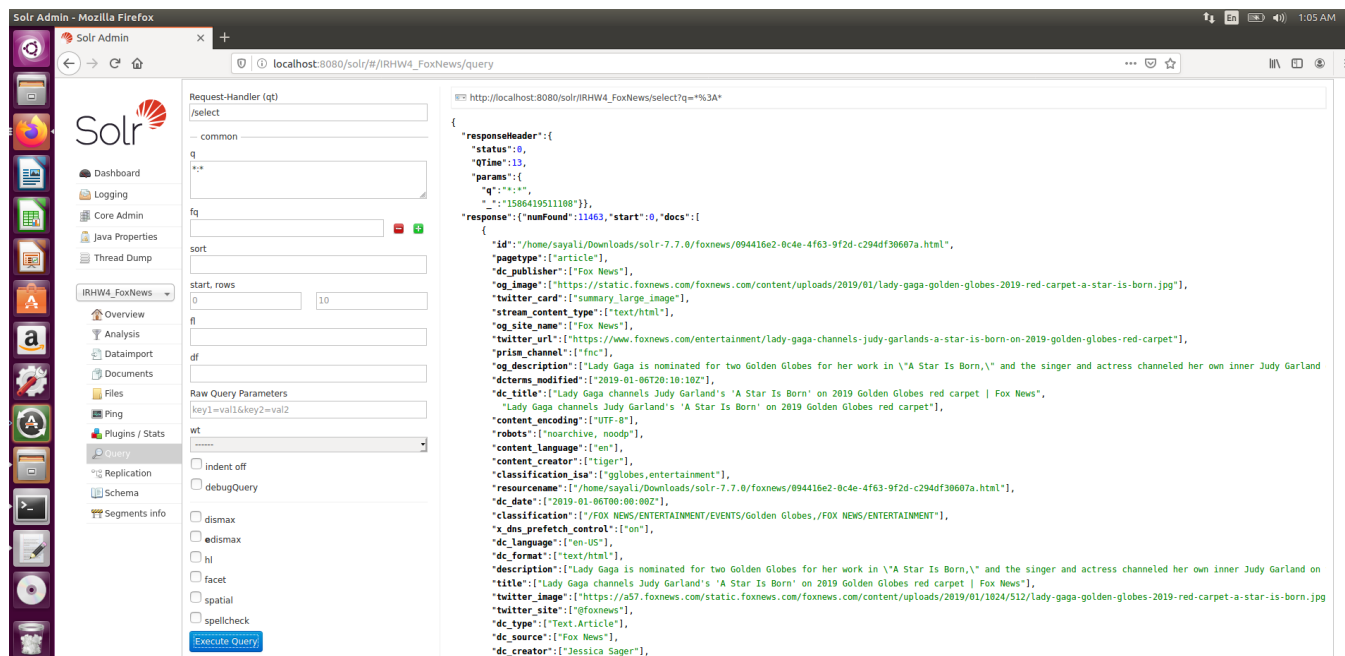
- **\$ bin/solr create -c IRHW4\_FoxNews -p 8080** (created collection named IRHW4\_FoxNews on port 8080)
- Opened the file **managed-schema.xml** located within conf folder of the collection and uncommented the line **<copyField source="\*" dest="\_text\_"/>** to combine all information from different fields into a single field. Saved the changes. Copied the folder containing downloaded HTML files inside the folder of Solr and switched back to terminal.
- **\$ bin/post -c IRHW4\_FoxNews -filetypes html foxnews/ -p 8080** (indexed the files using post tool of Solr)

```
^Csayali@sayali-VirtualBox:~/Downloads/solr-7.7.0$ bin/post -c IRHW4_FOXNEWS -filetypes html foxnews/ -p 8080
java -classpath /home/sayali/Downloads/solr-7.7.0/dist/solr-core-7.7.0.jar -Dauto=yes -Dfiletypes=html -Dport=8080 -Dc=IRHW4_FOXNEWS -Ddata=files -Drecursive=yes org.apache.solr.util.SimplePost
s/
SimplePostTool version 5.0.0
Posting files to [base] url http://localhost:8080/solr/IRHW4_FOXNEWS/update...
Entering auto mode. File endings considered are html
Entering recursive mode, max depth=999, delay=0s
Indexing directory foxnews (11464 files, depth=0)
```

- Verified if the Solr UI works well on port 8080.



- Ran a basic query to verify if the indexing is done correctly.



#### Step 4: Extracting URLs from HTML Files

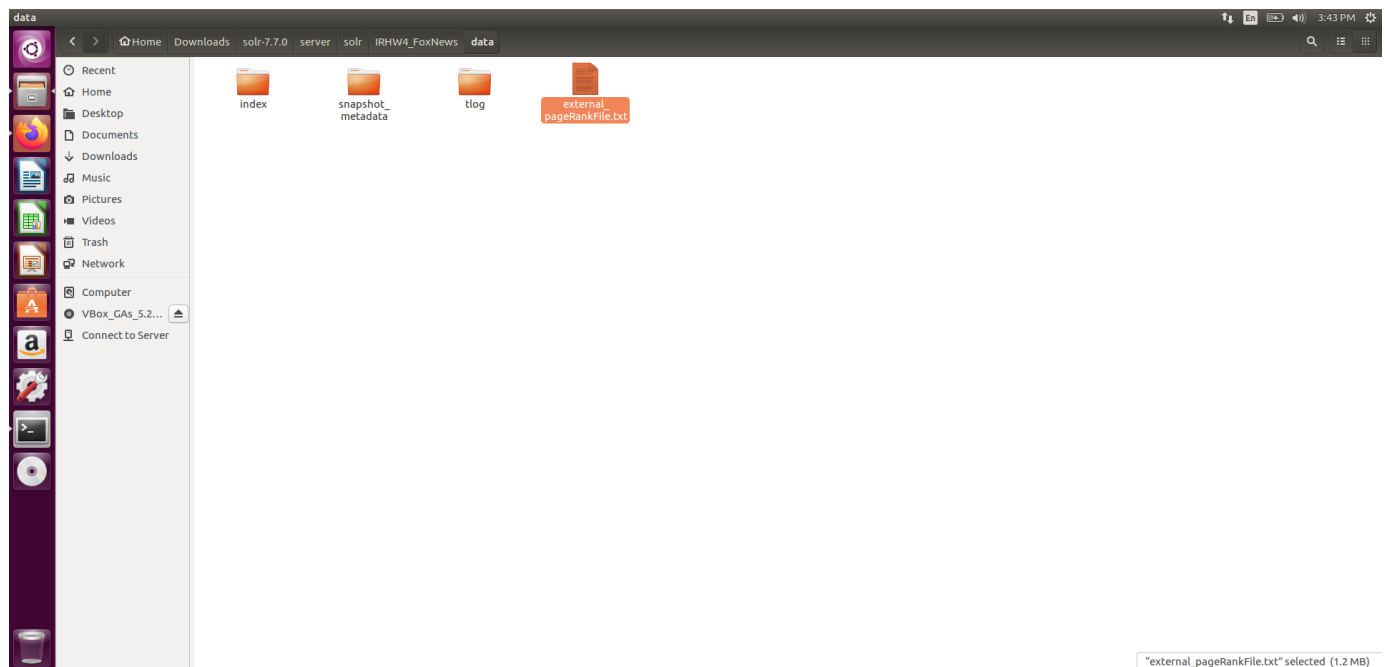
- Downloaded **jsoup-1.11.3.jar** and **opencsv-5.1.jar** required to parse HTML pages and read CSV file respectively.
- Wrote Java code to extract outgoing URLs from each downloaded HTML file and create an edge between the current page and the outgoing page.
- Created an **edgeList.txt** file that represents an edge between an HTML page and its outgoing HTML page.

#### Step 5: Calculating Page Rank

- Installed pip using the command **python get-pip.py**
- Installed network library using command **pip install networkx==2.2**
- Wrote a python code to form a graph with the provided edges and calculate page rank using the graph and the following attributes: **alpha=0.85, personalization=None, max\_iter=30, tol=1e-06, nstart=None, weight='weight', dangling=None**
- Created **external\_pageRankFile.txt** file which represents page rank for each HTML file using the above code.

#### Step 6: Configuration settings in xml files of Solr

- Placed the above **external\_pageRankFile.txt** inside data folder of the created core.



- Modified the **managed-schema.xml** file to add a field names **pageRankFile** which refers to the page rank score for each HTML file. Added the following lines to the file:  
**<fieldType name="external" keyField="id" defVal="0" class="solr.ExternalFileField"/>**  
**<field name="pageRankFile" type="external" stored="false" indexed="false"/>**
- Modified **solrconfig.xml** file to define event listeners to load the external file in the searcher thus enabling us to use an external Page ranking algorithm within Solr. The following lines were added:

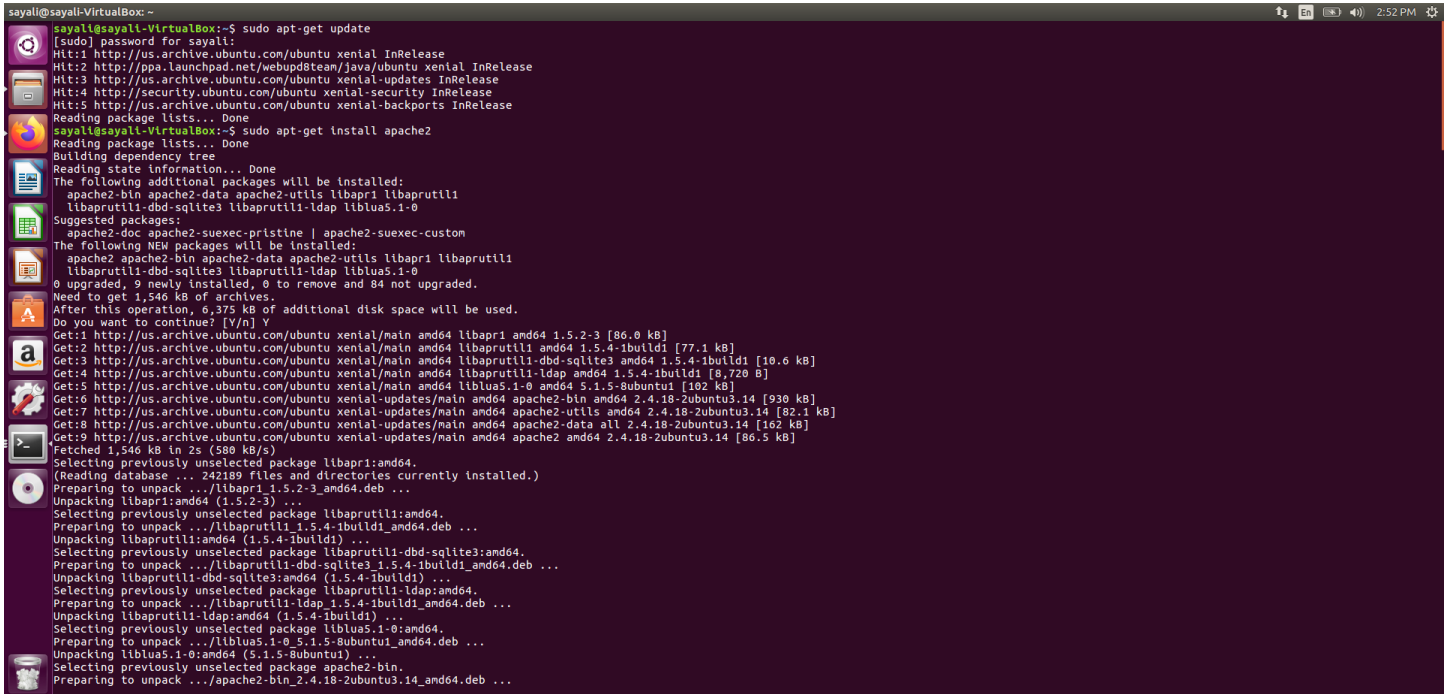
```
<listener event="newSearcher" class="org.apache.solr.schema.ExternalFileFieldReloader"/>
<listener event="firstSearcher" class="org.apache.solr.schema.ExternalFileFieldReloader"/>
```

- Reloaded the index through the Solr UI.

## Step 7: Installation of Apache and PHP

- Executed the following command in terminal:

- `$ sudo apt-get update`
- `$ sudo apt-get apache2`



```
sayali@sayali-VirtualBox: ~
sayali@sayali-VirtualBox:~$ sudo apt-get update
[sudo] password for sayali:
Hit:1 http://us.archive.ubuntu.com/ubuntu xenial InRelease
Hit:2 http://ppa.launchpad.net/webupd8team/java/ubuntu xenial InRelease
Hit:3 http://us.archive.ubuntu.com/ubuntu xenial-updates InRelease
Hit:4 http://security.ubuntu.com/ubuntu xenial-security InRelease
Hit:5 http://us.archive.ubuntu.com/ubuntu xenial-backports InRelease
Reading package lists... Done
sayali@sayali-VirtualBox:~$ sudo apt-get install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1
  libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.1-0
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1
  libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.1-0
0 upgraded, 9 newly installed, 0 to remove and 84 not upgraded.
Need to get 1,546 kB of archives.
After this operation, 6,375 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://us.archive.ubuntu.com/ubuntu xenial/main amd64 libapr1 amd64 1.5.2-3 [86.0 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu xenial/main amd64 libaprutil1 amd64 1.5.4-1build1 [77.1 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu xenial/main amd64 libaprutil1-dbd-sqlite3 amd64 1.5.4-1build1 [10.6 kB]
Get:4 http://us.archive.ubuntu.com/ubuntu xenial/main amd64 libaprutil1-ldap amd64 1.5.4-1build1 [8,720 B]
Get:5 http://us.archive.ubuntu.com/ubuntu xenial/main amd64 liblua5.1-0 amd64 5.1.5-8ubuntu1 [162 kB]
Get:6 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 apache2-bin amd64 2.4.18-2ubuntu3.14 [930 kB]
Get:7 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 apache2-utils amd64 2.4.18-2ubuntu3.14 [82.1 kB]
Get:8 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 apache2-data all 2.4.18-2ubuntu3.14 [162 kB]
Get:9 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 apache2 amd64 2.4.18-2ubuntu3.14 [86.5 kB]
Fetched 1,546 kB in 2s (580 kB/s)
Selecting previously unselected package libapr1:amd64.
(Reading database ... 242189 files and directories currently installed.)
Preparing to unpack .../libapr1_1.5.2-3_amd64.deb ...
Unpacking libapr1:amd64 (1.5.2-3) ...
Selecting previously unselected package libaprutil1:amd64.
Preparing to unpack .../libaprutil1_1.5.4-1build1_amd64.deb ...
Unpacking libaprutil1:amd64 (1.5.4-1build1) ...
Selecting previously unselected package libaprutil1-dbd-sqlite3:amd64.
Preparing to unpack .../libaprutil1-dbd-sqlite3_1.5.4-1build1_amd64.deb ...
Unpacking libaprutil1-dbd-sqlite3:amd64 (1.5.4-1build1) ...
Selecting previously unselected package libaprutil1-ldap:amd64.
Preparing to unpack .../libaprutil1-ldap_1.5.4-1build1_amd64.deb ...
Unpacking libaprutil1-ldap:amd64 (1.5.4-1build1) ...
Selecting previously unselected package liblua5.1-0:amd64.
Preparing to unpack .../liblua5.1-0_5.1.5-8ubuntu1_amd64.deb ...
Unpacking liblua5.1-0:amd64 (5.1.5-8ubuntu1) ...
Selecting previously unselected package apache2-bin.
Preparing to unpack .../apache2-bin_2.4.18-2ubuntu3.14_amd64.deb ...
```

- `$ sudo apt install php libapache2-mod-php`

```
sayali@sayali-VirtualBox:~$ sudo apt install php libapache2-mod-php
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libapache2-mod-php7.0 php-common php7.0 php7.0-common php7.0-json
  php7.0-opcache php7.0-readline
Suggested packages:
  php-pear
The following NEW packages will be installed:
  libapache2-mod-php libapache2-mod-php7.0 php php-common php7.0 php7.0-cli
  php7.0-common php7.0-json php7.0-opcache php7.0-readline
0 upgraded, 10 newly installed, 0 to remove and 84 not upgraded.
Need to get 3,477 kB of archives.
After this operation, 13.9 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 php-common all 1:35ubuntu6.1 [10.8 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 php7.0-common amd64 7.0.33-0ubuntu0.16.04.12 [844 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 php7.0-json amd64 7.0.33-0ubuntu0.16.04.12 [16.9 kB]
Get:4 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 php7.0-opcache amd64 7.0.33-0ubuntu0.16.04.12 [77.1 kB]
Get:5 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 php7.0-readline amd64 7.0.33-0ubuntu0.16.04.12 [12.8 kB]
Get:6 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 php7.0-cli amd64 7.0.33-0ubuntu0.16.04.12 [1,283 kB]
Get:7 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 libapache2-mod-php7.0 amd64 7.0.33-0ubuntu0.16.04.12 [1,225 kB]
Get:8 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 libapache2-mod-php all 1:7.0+35ubuntu6.1 [2,990 B]
Get:9 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 php7.0 all 7.0.33-0ubuntu0.16.04.12 [1,290 B]
Get:10 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 php all 1:7.0+35ubuntu6.1 [2,862 B]
Fetched 3,477 kB in 5s (648 kB/s)
Selecting previously unselected package php-common.
(Reading database ... 242875 files and directories currently installed.)
Preparing to unpack .../php-common-1x3a35ubuntu6.1_all.deb ...
Unpacking php-common (1:35ubuntu6.1) ...
Selecting previously unselected package php7.0-common.
Preparing to unpack .../php7.0-common-7.0.33-0ubuntu0.16.04.12_and64.deb ...
Unpacking php7.0-common (7.0.33-0ubuntu0.16.04.12) ...
Selecting previously unselected package php7.0-json.
Preparing to unpack .../php7.0-json-7.0.33-0ubuntu0.16.04.12_and64.deb ...
Unpacking php7.0-json (7.0.33-0ubuntu0.16.04.12) ...
Selecting previously unselected package php7.0-opcache.
Preparing to unpack .../php7.0-opcache-7.0.33-0ubuntu0.16.04.12_and64.deb ...
Unpacking php7.0-opcache (7.0.33-0ubuntu0.16.04.12) ...
Selecting previously unselected package php7.0-readline.
Preparing to unpack .../php7.0-readline-7.0.33-0ubuntu0.16.04.12_and64.deb ...
Unpacking php7.0-readline (7.0.33-0ubuntu0.16.04.12) ...
Selecting previously unselected package php7.0-cli.
Preparing to unpack .../php7.0-cli-7.0.33-0ubuntu0.16.04.12_and64.deb ...
Unpacking php7.0-cli (7.0.33-0ubuntu0.16.04.12) ...
Selecting previously unselected package libapache2-mod-php7.0.
Preparing to unpack .../libapache2-mod-php7.0-7.0.33-0ubuntu0.16.04.12_and64.deb ...
Unpacking libapache2-mod-php7.0 (7.0.33-0ubuntu0.16.04.12) ...
Selecting previously unselected package libapache2-mod-php.
Preparing to unpack .../libapache2-mod-php-1x3a7.0+35ubuntu6.1_all.deb ...
Unpacking libapache2-mod-php (1:7.0+35ubuntu6.1) ...
```

- \$ sudo systemctl restart apache2

## Step 8: Query Box using PHP

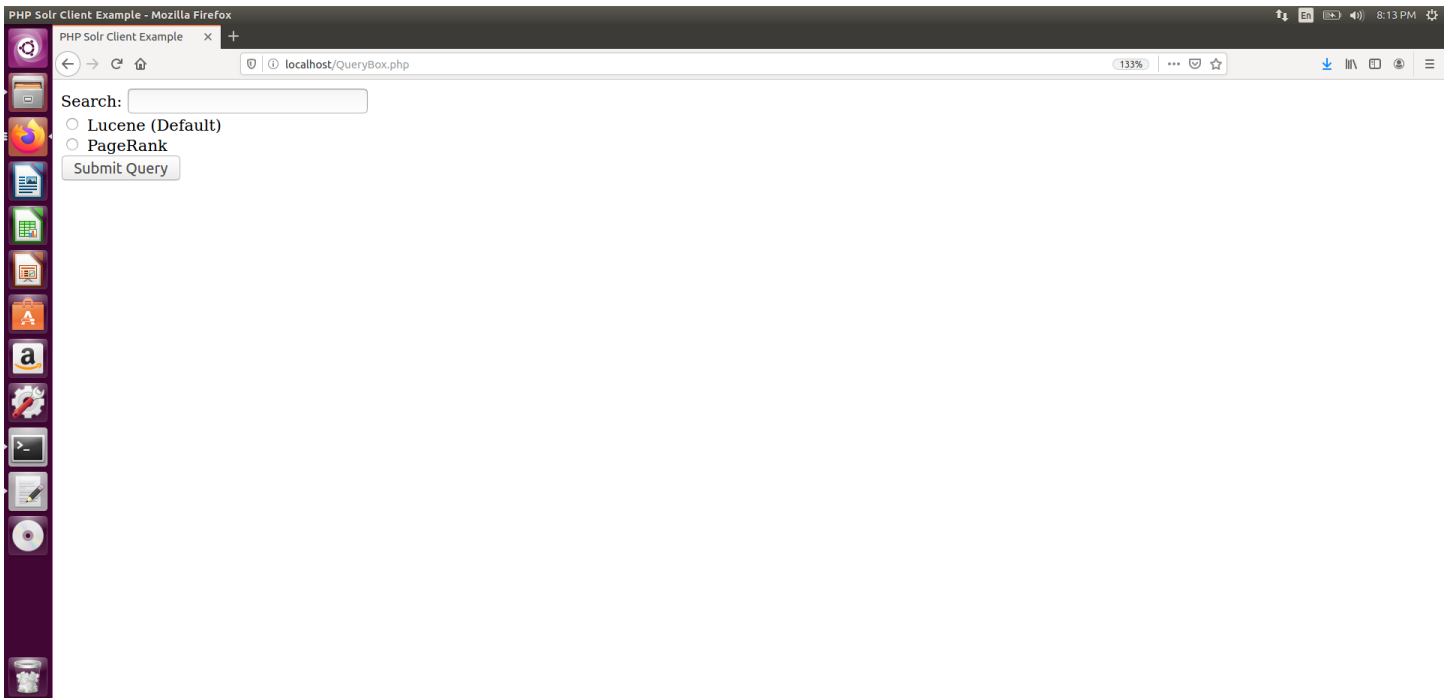
- Cloned the git repository <https://github.com/PTCInc/solr-php-client.git> in the path: **var/www/html/**
- Placed the provided URL mapping csv file in the same path.
- Created a .php file using the sample code and made necessary changes such as changing the port number of Solr, adding radio buttons for page rank selection, limiting the fields to be displayed, and the search strategy to be used.
- Also modified **Service.php** file present in Apache/solr folder of the cloned git repo in order to reflect correct port number and path on which Solr is running.

```
Service.php (/var/www/html/solr-php-client/Apache/Solr) - gedit

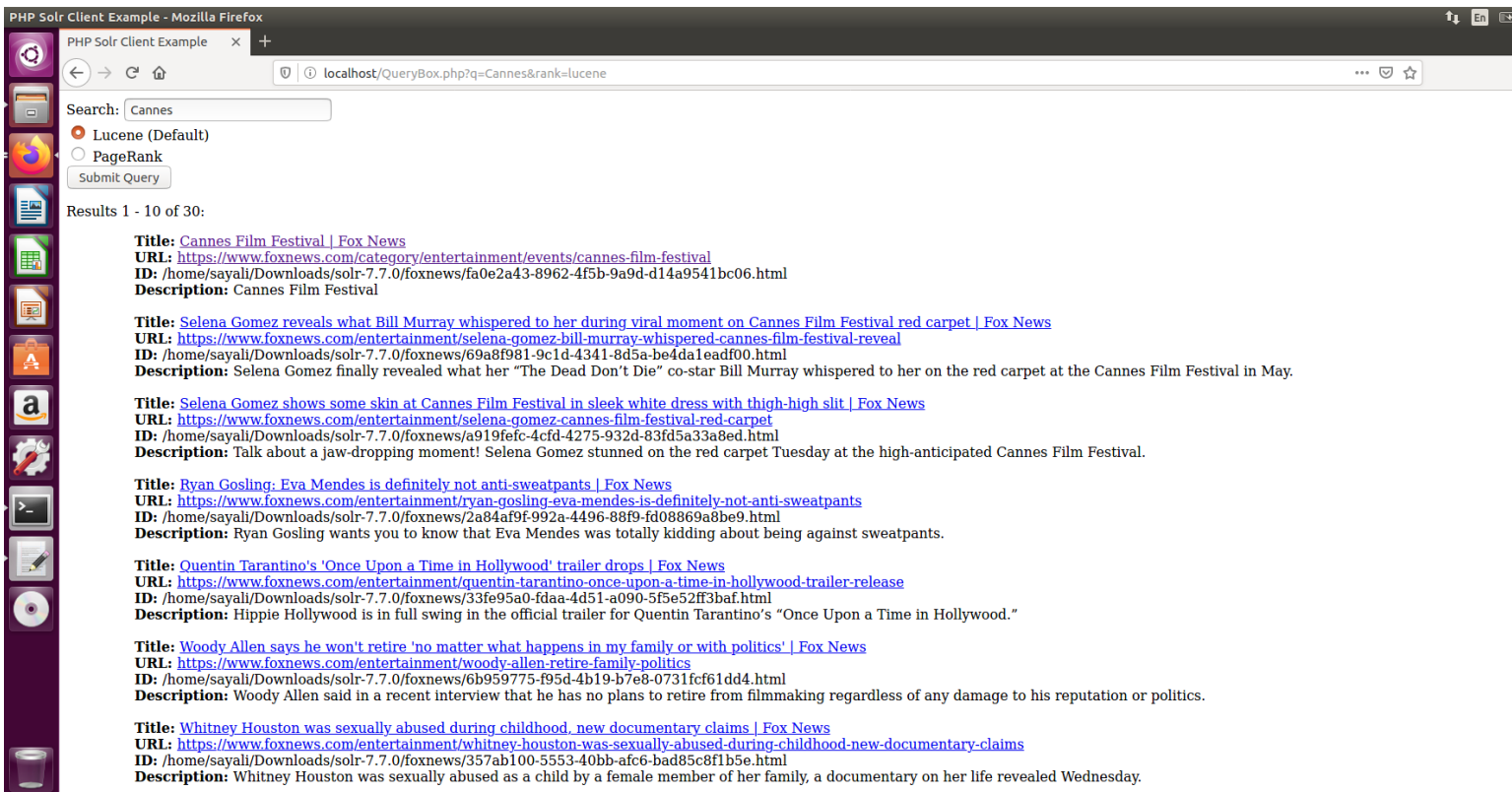
/**
 * Constructor. All parameters are optional and will take on default values
 * if not specified.
 *
 * @param string $host
 * @param string $port
 * @param string $path
 * @param Apache_Solr_HttpTransport_Interface $httpTransport
 * @param string $protocol
 */
public function __construct($host = 'localhost', $port = 8080, $path = '/solr/IRHM4_FoxNews/query', $httpTransport = false, $protocol = 'http')
{
    $this->setHost($host);
    $this->setPort($port);
    $this->setPath($path);
    $this->setProtocol($protocol);
}
```

- Below are the screenshots of the UI:

## Initial Query Page:

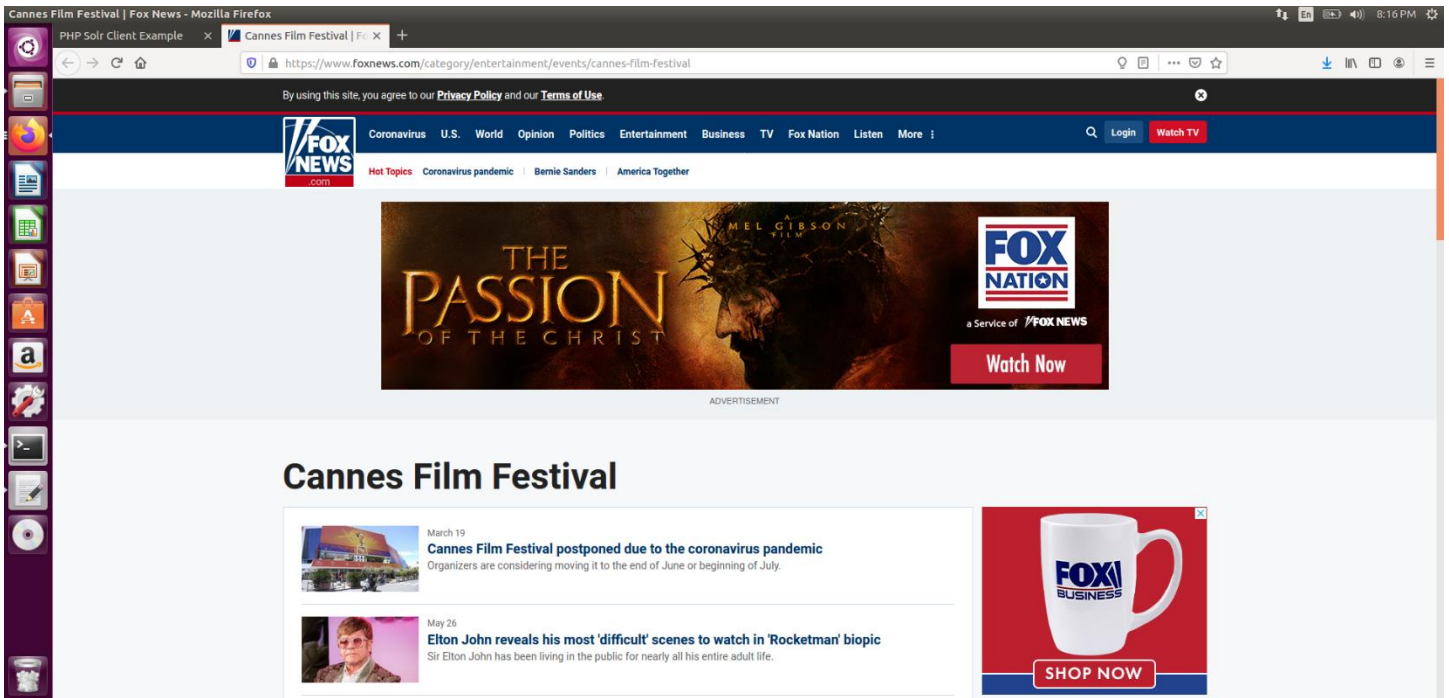


## Query Page for the query 'Cannes' and 'Lucene' (Solr default) algorithm:



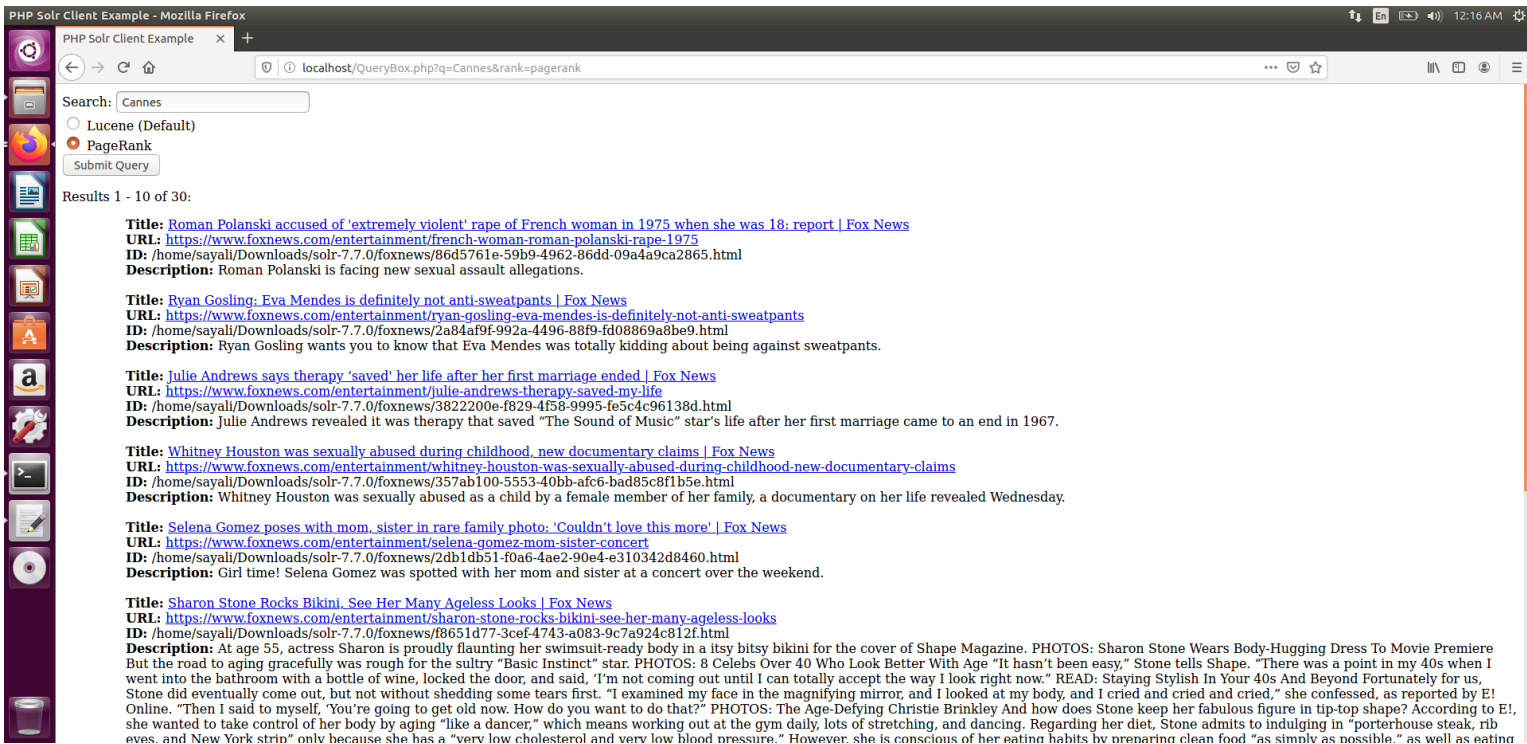


## Actual Clickable Link:



The screenshot shows the Fox News website in a Mozilla Firefox browser. The address bar displays the URL: <https://www.foxnews.com/category/entertainment/events/cannes-film-festival>. The page header includes the Fox News logo and navigation links for Coronavirus, U.S., World, Opinion, Politics, Entertainment, Business, TV, Fox Nation, Listen, and More. A search bar and 'Login' and 'Watch TV' buttons are also present. The main content area features a large banner for 'THE PASSION OF THE CHRIST' with a 'Watch Now' button. Below this, the section 'Cannes Film Festival' is displayed, containing two articles: 'Cannes Film Festival postponed due to the coronavirus pandemic' (dated March 19) and 'Elton John reveals his most 'difficult' scenes to watch in 'Rocketman' biopic' (dated May 26). A 'FOX BUSINESS' mug advertisement is visible on the right side of the page.

## Query Page for 'Cannes' query and 'PageRank' ranking algorithm:



The screenshot shows the PHP Solr Client Example website in a Mozilla Firefox browser. The address bar displays the URL: <localhost/QueryBox.php?q=Cannes&rank=pagerank>. The search bar contains the query 'Cannes'. The results are displayed as a list of articles from Fox News, ranked by PageRank. The results include:

- Title:** Roman Polanski accused of 'extremely violent' rape of French woman in 1975 when she was 18: report | Fox News  
**URL:** <https://www.foxnews.com/entertainment/french-woman-roman-polanski-rape-1975>  
**ID:** /home/sayali/Downloads/solr-7.7.0/foxnews/86d5761e-59b9-4962-86dd-09a4a9ca2865.html  
**Description:** Roman Polanski is facing new sexual assault allegations.
- Title:** Ryan Gosling: Eva Mendes is definitely not anti-sweatpants | Fox News  
**URL:** <https://www.foxnews.com/entertainment/ryan-gosling-eva-mendes-is-definitely-not-anti-sweatpants>  
**ID:** /home/sayali/Downloads/solr-7.7.0/foxnews/2a84af9f-992a-4496-88f9-fd08869a8be9.html  
**Description:** Ryan Gosling wants you to know that Eva Mendes was totally kidding about being against sweatpants.
- Title:** Julie Andrews says therapy 'saved' her life after her first marriage ended | Fox News  
**URL:** <https://www.foxnews.com/entertainment/julie-andrews-therapy-saved-my-life>  
**ID:** /home/sayali/Downloads/solr-7.7.0/foxnews/3822200e-f829-4f58-9995-fe5c4c96138d.html  
**Description:** Julie Andrews revealed it was therapy that saved "The Sound of Music" star's life after her first marriage came to an end in 1967.
- Title:** Whitney Houston was sexually abused during childhood, new documentary claims | Fox News  
**URL:** <https://www.foxnews.com/entertainment/whitney-houston-was-sexually-abused-during-childhood-new-documentary-claims>  
**ID:** /home/sayali/Downloads/solr-7.7.0/foxnews/357ab100-5553-40bb-afc6-bad85c8f1b5e.html  
**Description:** Whitney Houston was sexually abused as a child by a female member of her family, a documentary on her life revealed Wednesday.
- Title:** Selena Gomez poses with mom, sister in rare family photo: 'Couldn't love this more' | Fox News  
**URL:** <https://www.foxnews.com/entertainment/selena-gomez-mom-sister-concert>  
**ID:** /home/sayali/Downloads/solr-7.7.0/foxnews/2db1db51-f0a6-4ae2-90e4-e310342d8460.html  
**Description:** Girl time! Selena Gomez was spotted with her mom and sister at a concert over the weekend.
- Title:** Sharon Stone Rocks Bikini. See Her Many Ageless Looks | Fox News  
**URL:** <https://www.foxnews.com/entertainment/sharon-stone-rocks-bikini-see-her-many-ageless-looks>  
**ID:** /home/sayali/Downloads/solr-7.7.0/foxnews/f8651d77-3cef-4743-a083-9c7a924c812f.html  
**Description:** At age 55, actress Sharon is proudly flaunting her swimsuit-ready body in a itty bitty bikini for the cover of Shape Magazine. PHOTOS: Sharon Stone Wears Body-Hugging Dress To Movie Premiere But the road to aging gracefully was rough for the sultry "Basic Instinct" star. PHOTOS: 8 Celebs Over 40 Who Look Better With Age "It hasn't been easy," Stone tells Shape. "There was a point in my 40s when I went into the bathroom with a bottle of wine, locked the door, and said, 'I'm not coming out until I can totally accept the way I look right now.'" READ: Staying Stylish In Your 40s And Beyond Fortunately for us, Stone did eventually come out, but not without shedding some tears first. "I examined my face in the magnifying mirror, and I looked at my body, and I cried and cried and cried," she confessed, as reported by E! Online. "Then I said to myself, 'You're going to get old now. How do you want to do that?'" PHOTOS: The Age-Defying Christie Brinkley And how does Stone keep her fabulous figure in tip-top shape? According to E!, she wanted to take control of her body by aging "like a dancer," which means working out at the gym daily, lots of stretching, and dancing. Regarding her diet, Stone admits to indulging in "porterhouse steak, rib eyes, and New York strin" only because she has a "very low cholesterol and very low blood pressure." However, she is conscious of her eating habits by preparing clean food "as simply as possible." as well as eating

## Solr Query Results for the query 'Cannes' and default Lucene algorithm:

Solr Admin - Mozilla Firefox

Solr Admin

localhost:8080/solr/#/IRHW4\_FoxNews/query

Solr

Request-Handler (qt) /select

— common

q Cannes

fq

sort

start, rows 0 10

fl og\_url

df

Raw Query Parameters key1=val1&key2=val2

wt

☐ indent off

☐ debugQuery

☐ dismax

☐ edismax

☐ hl

☐ facet

☐ spatial

☐ spellcheck

Execute Query

http://localhost:8080/solr/IRHW4\_FoxNews/select?fl=og\_url&q=Cannes

```
{
  "responseHeader": {
    "status": 0,
    "QTime": 27,
    "params": {
      "q": "Cannes",
      "fl": "og_url",
      "_:": "1586411326550"
    }
  },
  "response": {
    "numFound": 30, "start": 0, "docs": [
      {
        "og_url": ["https://www.foxnews.com/category/entertainment/events/cannes-film-festival"],
        "og_url": ["https://www.foxnews.com/entertainment/selena-gomez-bill-murray-whispered-cannes-film-festival-reveal"],
        "og_url": ["https://www.foxnews.com/entertainment/selena-gomez-cannes-film-festival-red-carpet"],
        "og_url": ["https://www.foxnews.com/entertainment/ryan-gosling-eva-mendes-is-definitely-not-anti-sweatpants"],
        "og_url": ["https://www.foxnews.com/entertainment/quentin-tarantino-once-upon-a-time-in-hollywood-trailer-release"],
        "og_url": ["https://www.foxnews.com/entertainment/woody-allen-retire-family-politics"],
        "og_url": ["https://www.foxnews.com/entertainment/whitney-houston-was-sexually-abused-during-childhood-new-documentary-claims"],
        "og_url": ["https://www.foxnews.com/entertainment/elton-john-rocketman-biopic-drugs-addiction-eating-disorder"],
        "og_url": ["https://www.foxnews.com/opinion/a-joan-rivers-thanksgiving"],
        "og_url": ["https://www.foxnews.com/entertainment/selena-gomez-new-dog-instagram"]
      }
    ]
  }
}
```



## Solr Query Results for the query 'Cannes' and external Page Rank algorithm:

The screenshot shows the Solr Admin interface in a Mozilla Firefox browser. The URL bar displays `localhost:8080/solr/#/IRHW4_FoxNews/query`. The left sidebar contains navigation links: Dashboard, Logging, Core Admin, Java Properties, Thread Dump, and a message 'No cores available Go and create one'. The main panel is divided into two sections. The left section, titled 'Request-Handler (qt)', contains fields for 'q' (set to 'Cannes'), 'fq' (empty), 'sort' (set to 'pageRankFile desc'), 'start, rows' (0 to 10), 'fl' (set to 'og\_url'), 'df' (empty), 'Raw Query Parameters' (key1=val1&key2=val2), 'wt' (set to 'json'), and several checkboxes for query options like 'indent off', 'debugQuery', 'dismax', 'hl', 'facet', 'spatial', and 'spellcheck'. An 'Execute Query' button is at the bottom. The right section displays the JSON response from the query, showing a status of 0, a time of 109, and a list of 30 documents sorted by page rank. The first document's 'og\_url' is `https://www.foxnews.com/entertainment/french-woman-roman-polanski-rape-1975`.

### Reason for some pages having higher page rank than others:

The java program was written to find out the number of outgoing pages from a page and using the Python code, a directed graph was formed where each node represents an HTML page and edges represent an outgoing link from one node to another. The page-rank method of network library uses this graph and computes page rank for each page depending on the incoming links for each node. As each page has different # of incoming links, the page rank for each page comes out to be different. For nodes (pages) having larger # of incoming links, the calculated page rank is higher as compared to nodes (pages) having lesser # of incoming links.

Below are the query results for each query and both ranking algorithms:

#### 1. Cannes:

Sr. No.	Lucene (Default)	PageRank
1.	<a href="https://www.foxnews.com/category/entertainment/events/cannes-film-festival">https://www.foxnews.com/category/entertainment/events/cannes-film-festival</a>	<a href="https://www.foxnews.com/entertainment/french-woman-roman-polanski-rape-1975">https://www.foxnews.com/entertainment/french-woman-roman-polanski-rape-1975</a>

2.	<a href="https://www.foxnews.com/entertainment/selena-gomez-bill-murray-whispered-cannes-film-festival-reveal">https://www.foxnews.com/entertainment/selena-gomez-bill-murray-whispered-cannes-film-festival-reveal</a>	<a href="https://www.foxnews.com/entertainment/ryan-gosling-eva-mendes-is-definitely-not-anti-sweatpants">https://www.foxnews.com/entertainment/ryan-gosling-eva-mendes-is-definitely-not-anti-sweatpants</a>
3.	<a href="https://www.foxnews.com/entertainment/selena-gomez-cannes-film-festival-red-carpet">https://www.foxnews.com/entertainment/selena-gomez-cannes-film-festival-red-carpet</a>	<a href="https://www.foxnews.com/entertainment/julie-andrews-therapy-saved-my-life">https://www.foxnews.com/entertainment/julie-andrews-therapy-saved-my-life</a>
4.	<a href="https://www.foxnews.com/entertainment/ryan-gosling-eva-mendes-is-definitely-not-anti-sweatpants">https://www.foxnews.com/entertainment/ryan-gosling-eva-mendes-is-definitely-not-anti-sweatpants</a>	<a href="https://www.foxnews.com/entertainment/whitney-houston-was-sexually-abused-during-childhood-new-documentary-claims">https://www.foxnews.com/entertainment/whitney-houston-was-sexually-abused-during-childhood-new-documentary-claims</a>
5.	<a href="https://www.foxnews.com/entertainment/quentin-tarantino-once-upon-a-time-in-hollywood-trailer-release">https://www.foxnews.com/entertainment/quentin-tarantino-once-upon-a-time-in-hollywood-trailer-release</a>	<a href="https://www.foxnews.com/entertainment/selena-gomez-mom-sister-concert">https://www.foxnews.com/entertainment/selena-gomez-mom-sister-concert</a>
6.	<a href="https://www.foxnews.com/entertainment/woody-allen-retire-family-politics">https://www.foxnews.com/entertainment/woody-allen-retire-family-politics</a>	<a href="https://www.foxnews.com/entertainment/sharon-stone-rocks-bikini-see-her-many-ageless-looks">https://www.foxnews.com/entertainment/sharon-stone-rocks-bikini-see-her-many-ageless-looks</a>
7.	<a href="https://www.foxnews.com/entertainment/whitney-houston-was-sexually-abused-during-childhood-new-documentary-claims">https://www.foxnews.com/entertainment/whitney-houston-was-sexually-abused-during-childhood-new-documentary-claims</a>	<a href="https://www.foxnews.com/entertainment/dolph-lundgren-sylvester-stallone-rocky-iv-hospital">https://www.foxnews.com/entertainment/dolph-lundgren-sylvester-stallone-rocky-iv-hospital</a>
8.	<a href="https://www.foxnews.com/entertainment/elton-john-rocketman-biopic-drugs-addiction-eating-disorder">https://www.foxnews.com/entertainment/elton-john-rocketman-biopic-drugs-addiction-eating-disorder</a>	<a href="https://www.foxnews.com/entertainment/michael-moore-endorses-bernie-sanders">https://www.foxnews.com/entertainment/michael-moore-endorses-bernie-sanders</a>
9.	<a href="https://www.foxnews.com/opinion/a-joan-rivers-thanksgiving">https://www.foxnews.com/opinion/a-joan-rivers-thanksgiving</a>	<a href="https://www.foxnews.com/entertainment/elton-john-rocketman-biopic-drugs-addiction-eating-disorder">https://www.foxnews.com/entertainment/elton-john-rocketman-biopic-drugs-addiction-eating-disorder</a>
10.	<a href="https://www.foxnews.com/entertainment/selena-gomez-new-dog-instagram">https://www.foxnews.com/entertainment/selena-gomez-new-dog-instagram</a>	<a href="https://www.foxnews.com/category/entertainment/events/cannes-film-festival">https://www.foxnews.com/category/entertainment/events/cannes-film-festival</a>
<b>Overlap: 4</b>		

## 2. Congress:

Sr. No.	Lucene (Default)	PageRank
1.	<a href="https://www.foxnews.com/us/navy-vet-donates-gold-star-families-stories-to-library-of-congress">https://www.foxnews.com/us/navy-vet-donates-gold-star-families-stories-to-library-of-congress</a>	<a href="https://www.foxnews.com/opinion">https://www.foxnews.com/opinion</a>
2.	<a href="https://www.foxnews.com/opinion/judge-andrew-apolitano-congress-constitutional-power-declare-war">https://www.foxnews.com/opinion/judge-andrew-apolitano-congress-constitutional-power-declare-war</a>	<a href="https://www.foxnews.com/tech">https://www.foxnews.com/tech</a>
3.	<a href="https://www.foxnews.com/politics/jon-stewart-blasts-congress-over-9-11-fund-hearing-drove-me-nuts-there-were-empty-seats">https://www.foxnews.com/politics/jon-stewart-blasts-congress-over-9-11-fund-hearing-drove-me-nuts-there-were-empty-seats</a>	<a href="https://www.foxnews.com/official-polls">https://www.foxnews.com/official-polls</a>
4.	<a href="https://www.foxnews.com/opinion/rep-andy-biggs-congress-debt-ceiling-budget-deal">https://www.foxnews.com/opinion/rep-andy-biggs-congress-debt-ceiling-budget-deal</a>	<a href="https://www.foxnews.com/category/politics/foreign-policy">https://www.foxnews.com/category/politics/foreign-policy</a>
5.	<a href="https://www.foxnews.com/opinion/gutfeld-congress-attacking-zuckerberg">https://www.foxnews.com/opinion/gutfeld-congress-attacking-zuckerberg</a>	<a href="https://www.foxnews.com/category/politics/executive">https://www.foxnews.com/category/politics/executive</a>
6.	<a href="https://www.foxnews.com/opinion/andy-biggs-congress-judges-immigration-laws">https://www.foxnews.com/opinion/andy-biggs-congress-judges-immigration-laws</a>	<a href="https://www.foxnews.com/category/tech/topics/security">https://www.foxnews.com/category/tech/topics/security</a>

7.	<a href="https://www.foxnews.com/faith-values/bible-school-drew-brees-day-congress">https://www.foxnews.com/faith-values/bible-school-drew-brees-day-congress</a>	<a href="https://www.foxnews.com/category/world/conflicts">https://www.foxnews.com/category/world/conflicts</a>
8.	<a href="https://www.foxnews.com/category/us/congress">https://www.foxnews.com/category/us/congress</a>	<a href="https://www.foxnews.com/opinion/mike-huckabee-lets-fight-for-fabricated-structural-steel-manufacturing-jobs">https://www.foxnews.com/opinion/mike-huckabee-lets-fight-for-fabricated-structural-steel-manufacturing-jobs</a>
9.	<a href="https://www.foxnews.com/politics/trump-tells-congress-to-immediately-approve-mexico-canada-trade-deal-says-us-moving-past-stupid-years-of-trade-policy">https://www.foxnews.com/politics/trump-tells-congress-to-immediately-approve-mexico-canada-trade-deal-says-us-moving-past-stupid-years-of-trade-policy</a>	<a href="http://www.foxnews.com/trending">http://www.foxnews.com/trending</a>
10.	<a href="https://www.foxnews.com/opinion/bradley-blakeman-trade-pact-with-canada-and-mexico-offers-incredible-benefits-congress-should-approve-it">https://www.foxnews.com/opinion/bradley-blakeman-trade-pact-with-canada-and-mexico-offers-incredible-benefits-congress-should-approve-it</a>	<a href="https://www.foxnews.com/media/elijah-cummings-seat-kimberly-klacik-baltimore-election-republican">https://www.foxnews.com/media/elijah-cummings-seat-kimberly-klacik-baltimore-election-republican</a>

**Overlap: 0**

### 3. Democrats:

Sr. No.	Lucene (Default)	PageRank
1.	<a href="https://www.foxnews.com/opinion/rnc-chair-mcdaniel-democrats-impeachment-vote-is-baseless-political-vendetta-trump-did-nothing-wrong">https://www.foxnews.com/opinion/rnc-chair-mcdaniel-democrats-impeachment-vote-is-baseless-political-vendetta-trump-did-nothing-wrong</a>	<a href="https://www.foxnews.com/opinion">https://www.foxnews.com/opinion</a>
2.	<a href="https://www.foxnews.com/politics/democrats-arent-actually-impeaching-the-president-yet-but-they-are-digging-deep">https://www.foxnews.com/politics/democrats-arent-actually-impeaching-the-president-yet-but-they-are-digging-deep</a>	<a href="https://www.foxnews.com/us">https://www.foxnews.com/us</a>
3.	<a href="https://www.foxnews.com/opinion/david-bossie-baseless-trump-impeachment-inquiry-by-desperate-democrats-makes-dramatic-flip-flop">https://www.foxnews.com/opinion/david-bossie-baseless-trump-impeachment-inquiry-by-desperate-democrats-makes-dramatic-flip-flop</a>	<a href="https://www.foxnews.com">https://www.foxnews.com</a>
4.	<a href="https://www.foxnews.com/politics/federal-judge-house-democrats-mazars-subpoena-trump-financial-record">https://www.foxnews.com/politics/federal-judge-house-democrats-mazars-subpoena-trump-financial-record</a>	<a href="https://www.foxnews.com/politics">https://www.foxnews.com/politics</a>
5.	<a href="https://www.foxnews.com/opinion/rep-andy-biggs-lipstick-impeachment">https://www.foxnews.com/opinion/rep-andy-biggs-lipstick-impeachment</a>	<a href="https://www.foxnews.com/category/entertainment/music">https://www.foxnews.com/category/entertainment/music</a>
6.	<a href="https://www.foxnews.com/media/democrats-disdain-working-class-trump-jr-fox-friends">https://www.foxnews.com/media/democrats-disdain-working-class-trump-jr-fox-friends</a>	<a href="https://www.foxnews.com/category/politics/senate">https://www.foxnews.com/category/politics/senate</a>
7.	<a href="https://www.foxnews.com/opinion/liz-harrington-democrats-holding-soviet-style-show-trial-to-overthrow-trump-not-an-impeachment-inquiry">https://www.foxnews.com/opinion/liz-harrington-democrats-holding-soviet-style-show-trial-to-overthrow-trump-not-an-impeachment-inquiry</a>	<a href="https://www.foxnews.com/category/us/personal-freedoms">https://www.foxnews.com/category/us/personal-freedoms</a>
8.	<a href="https://www.foxnews.com/opinion/donald-trump-jr-democrats-immigration-radical-ideology">https://www.foxnews.com/opinion/donald-trump-jr-democrats-immigration-radical-ideology</a>	<a href="https://www.foxnews.com/official-polls">https://www.foxnews.com/official-polls</a>
9.	<a href="https://www.foxnews.com/opinion/hans-von-spakovsky-in-trump-impeachment-probe-democrats-refuse-to-follow-nixon-and-clinton-precedents">https://www.foxnews.com/opinion/hans-von-spakovsky-in-trump-impeachment-probe-democrats-refuse-to-follow-nixon-and-clinton-precedents</a>	<a href="https://www.foxnews.com/category/world/scandals">https://www.foxnews.com/category/world/scandals</a>
10.	<a href="https://www.foxnews.com/opinion/david-bossie-trump-impeachment-vote-is-democratic">https://www.foxnews.com/opinion/david-bossie-trump-impeachment-vote-is-democratic</a>	<a href="https://www.foxnews.com/category/politics/foreign-policy">https://www.foxnews.com/category/politics/foreign-policy</a>

	<a href="#">declaration-of-war-republicans-must-declare-war-on-dems</a>	
<b>Overlap: 0</b>		

#### 4. Patriotic Movement:

Sr. No.	Lucene (Default)	PageRank
1.	<a href="https://www.foxnews.com/politics/trump-antifa-terrorist-portland-protests">https://www.foxnews.com/politics/trump-antifa-terrorist-portland-protests</a>	<a href="https://www.foxnews.com/science">https://www.foxnews.com/science</a>
2.	<a href="https://www.foxnews.com/world/iranian-cruise-missiles-drones-saudi-oil">https://www.foxnews.com/world/iranian-cruise-missiles-drones-saudi-oil</a>	<a href="https://www.foxnews.com/">https://www.foxnews.com/</a>
3.	<a href="https://www.foxnews.com/media/fox-nation-patriot-awards-american-heroes-st-petersburg">https://www.foxnews.com/media/fox-nation-patriot-awards-american-heroes-st-petersburg</a>	<a href="https://www.foxnews.com/tech">https://www.foxnews.com/tech</a>
4.	<a href="https://www.foxnews.com/media/fox-nation-patriot-awards">https://www.foxnews.com/media/fox-nation-patriot-awards</a>	<a href="https://www.foxnews.com/category/entertainment/movies">https://www.foxnews.com/category/entertainment/movies</a>
5.	<a href="https://www.foxnews.com/media/marine-vet-most-valuable-patriot-awards-congress">https://www.foxnews.com/media/marine-vet-most-valuable-patriot-awards-congress</a>	<a href="https://www.foxnews.com/category/science/planet-earth">https://www.foxnews.com/category/science/planet-earth</a>
6.	<a href="https://www.foxnews.com/faith-values/veterans-serve-disaster-relief">https://www.foxnews.com/faith-values/veterans-serve-disaster-relief</a>	<a href="https://www.foxnews.com/entertainment/gwyneth-paltrow-relationship-harvey-weinstein">https://www.foxnews.com/entertainment/gwyneth-paltrow-relationship-harvey-weinstein</a>
7.	<a href="https://www.foxnews.com/media/tomi-lahren-patriot-awards-fox-nation">https://www.foxnews.com/media/tomi-lahren-patriot-awards-fox-nation</a>	<a href="https://www.foxnews.com/politics/aoc-bloomberg-purchase-election">https://www.foxnews.com/politics/aoc-bloomberg-purchase-election</a>
8.	<a href="https://www.foxnews.com/entertainment/netflix-pulls-patriot-act-with-hasan-minhaj-episode-after-getting-valid-legal-complaint-from-saudi-arabia">https://www.foxnews.com/entertainment/netflix-pulls-patriot-act-with-hasan-minhaj-episode-after-getting-valid-legal-complaint-from-saudi-arabia</a>	<a href="https://www.foxnews.com/world/ukraine-russia-separatists-pullback">https://www.foxnews.com/world/ukraine-russia-separatists-pullback</a>
9.	<a href="https://www.foxnews.com/media/vice-president-mike-pence-fox-nation-patriot-awards">https://www.foxnews.com/media/vice-president-mike-pence-fox-nation-patriot-awards</a>	<a href="https://www.foxnews.com/science/earths-mantle-and-crust-are-in-a-fiery-battle-to-the-death-of-supercontinents">https://www.foxnews.com/science/earths-mantle-and-crust-are-in-a-fiery-battle-to-the-death-of-supercontinents</a>
10.	<a href="https://www.foxnews.com/tech/netflix-defends-pulling-patriot-act-episode-in-saudi-arabia">https://www.foxnews.com/tech/netflix-defends-pulling-patriot-act-episode-in-saudi-arabia</a>	<a href="https://www.foxnews.com/auto/2020-ram-1500-built-to-serve-pickup-salutes-the-u-s-military">https://www.foxnews.com/auto/2020-ram-1500-built-to-serve-pickup-salutes-the-u-s-military</a>
<b>Overlap: 0</b>		

#### 5. Republicans:

Sr. No.	Lucene (Default)	PageRank
1.	<a href="https://www.foxnews.com/politics/house-republicans-storm-impeachment-inquiry-deposition-what-went-down">https://www.foxnews.com/politics/house-republicans-storm-impeachment-inquiry-deposition-what-went-down</a>	<a href="https://www.foxnews.com/opinion">https://www.foxnews.com/opinion</a>
2.	<a href="https://www.foxnews.com/opinion/tom-del-beccaro-republicans-must-win-the-impeachment-trial-and-they-can-by-following-these-five-steps">https://www.foxnews.com/opinion/tom-del-beccaro-republicans-must-win-the-impeachment-trial-and-they-can-by-following-these-five-steps</a>	<a href="https://www.foxnews.com/">https://www.foxnews.com/</a>
3.	<a href="https://www.foxnews.com/politics/republicans-hunter-biden-ukraine-whistleblower-impeachment-witness">https://www.foxnews.com/politics/republicans-hunter-biden-ukraine-whistleblower-impeachment-witness</a>	<a href="https://www.foxnews.com/politics">https://www.foxnews.com/politics</a>

4.	<a href="https://www.foxnews.com/politics/house-republicans-plan-to-call-adam-schiff-to-testify-in-impeachment-inquiry-call-him-a-fact-witness">https://www.foxnews.com/politics/house-republicans-plan-to-call-adam-schiff-to-testify-in-impeachment-inquiry-call-him-a-fact-witness</a>	<a href="https://www.foxnews.com/category/politics/senate">https://www.foxnews.com/category/politics/senate</a>
5.	<a href="https://www.foxnews.com/politics/trump-settles-score-with-republicans-who-didnt-embrace-him-in-midterms">https://www.foxnews.com/politics/trump-settles-score-with-republicans-who-didnt-embrace-him-in-midterms</a>	<a href="https://www.foxnews.com/official-polls">https://www.foxnews.com/official-polls</a>
6.	<a href="https://www.foxnews.com/politics/republicans-impeachment-hearings-lineup">https://www.foxnews.com/politics/republicans-impeachment-hearings-lineup</a>	<a href="https://www.foxnews.com/category/world/scandals">https://www.foxnews.com/category/world/scandals</a>
7.	<a href="https://www.foxnews.com/politics/bill-weld-thrilled-other-republicans-are-challenging-trump-in-primary">https://www.foxnews.com/politics/bill-weld-thrilled-other-republicans-are-challenging-trump-in-primary</a>	<a href="https://www.foxnews.com/category/politics/house-of-representatives">https://www.foxnews.com/category/politics/house-of-representatives</a>
8.	<a href="https://www.foxnews.com/entertainment/chelsea-handler-republicans-colorado-school-shooting">https://www.foxnews.com/entertainment/chelsea-handler-republicans-colorado-school-shooting</a>	<a href="https://www.foxnews.com/category/politics/elections">https://www.foxnews.com/category/politics/elections</a>
9.	<a href="https://www.foxnews.com/opinion/matt-gorman-kavanaugh-republicans">https://www.foxnews.com/opinion/matt-gorman-kavanaugh-republicans</a>	<a href="https://www.foxnews.com/category/world/conflicts">https://www.foxnews.com/category/world/conflicts</a>
10.	<a href="https://www.foxnews.com/opinion/newt-gingrich-house-republicans-2020-retirements">https://www.foxnews.com/opinion/newt-gingrich-house-republicans-2020-retirements</a>	<a href="https://www.foxnews.com/politics.html">https://www.foxnews.com/politics.html</a>

**Overlap: 0**

## 6. Senate:

Sr. No.	Lucene (Default)	PageRank
1.	<a href="https://www.foxnews.com/politics/trump-senate-trial-impeachment-inquiry-reporters-notebook">https://www.foxnews.com/politics/trump-senate-trial-impeachment-inquiry-reporters-notebook</a>	<a href="https://www.foxnews.com/shows">https://www.foxnews.com/shows</a>
2.	<a href="https://www.foxnews.com/category/politics/2020-senate-races">https://www.foxnews.com/category/politics/2020-senate-races</a>	<a href="https://www.foxnews.com/opinion">https://www.foxnews.com/opinion</a>
3.	<a href="https://www.foxnews.com/media/jeff-sessions-former-embattled-trump-attorney-general-announces-bid-for-old-us-senate-seat">https://www.foxnews.com/media/jeff-sessions-former-embattled-trump-attorney-general-announces-bid-for-old-us-senate-seat</a>	<a href="https://www.foxnews.com/entertainment">https://www.foxnews.com/entertainment</a>
4.	<a href="https://www.foxnews.com/opinion/newt-gingrich-left-viciously-attacks-mcconnell-because-hes-successful-senate-leader-and-trump-ally">https://www.foxnews.com/opinion/newt-gingrich-left-viciously-attacks-mcconnell-because-hes-successful-senate-leader-and-trump-ally</a>	<a href="https://www.foxnews.com/world">https://www.foxnews.com/world</a>
5.	<a href="https://www.foxnews.com/faith-values/pastor-andrew-brunson-senate-trump-prayer">https://www.foxnews.com/faith-values/pastor-andrew-brunson-senate-trump-prayer</a>	<a href="https://www.foxnews.com/health">https://www.foxnews.com/health</a>
6.	<a href="https://www.foxnews.com/politics/jeff-sessions-alabama-senate-campaign-expected">https://www.foxnews.com/politics/jeff-sessions-alabama-senate-campaign-expected</a>	<a href="https://www.foxnews.com/travel">https://www.foxnews.com/travel</a>
7.	<a href="https://www.foxnews.com/politics/trump-sessions-against-senate-run-alabama">https://www.foxnews.com/politics/trump-sessions-against-senate-run-alabama</a>	<a href="https://www.foxnews.com/us">https://www.foxnews.com/us</a>
8.	<a href="https://www.foxnews.com/category/politics/elections/senate">https://www.foxnews.com/category/politics/elections/senate</a>	<a href="https://www.foxnews.com/science">https://www.foxnews.com/science</a>
9.	<a href="https://www.foxnews.com/politics/virginia-democrat-accused-of-sex-with-teen-secretary-wins-state-senate-seat">https://www.foxnews.com/politics/virginia-democrat-accused-of-sex-with-teen-secretary-wins-state-senate-seat</a>	<a href="https://www.foxnews.com/">https://www.foxnews.com/</a>
10.	<a href="https://www.foxnews.com/media/trump-senate-mike-pence-joe-scarborough">https://www.foxnews.com/media/trump-senate-mike-pence-joe-scarborough</a>	<a href="https://www.foxnews.com/closed-captioning">https://www.foxnews.com/closed-captioning</a>

**Overlap: 0**

## 7. Olympics 2020:

Sr. No.	Lucene (Default)	PageRank
1.	<a href="https://www.foxnews.com/sports/alex-morgan-2020-olympics-child-birth">https://www.foxnews.com/sports/alex-morgan-2020-olympics-child-birth</a>	<a href="https://www.foxnews.com/opinion">https://www.foxnews.com/opinion</a>
2.	<a href="https://www.foxnews.com/sports/naomi-osaka-us-citizenship-japan-2020-olympics">https://www.foxnews.com/sports/naomi-osaka-us-citizenship-japan-2020-olympics</a>	<a href="https://www.foxnews.com/entertainment">https://www.foxnews.com/entertainment</a>
3.	<a href="https://www.foxnews.com/category/sports/olympics">https://www.foxnews.com/category/sports/olympics</a>	<a href="https://www.foxnews.com/">https://www.foxnews.com/</a>
4.	<a href="https://www.foxnews.com/tech/russian-hackers-attack-possible-olympic-ban">https://www.foxnews.com/tech/russian-hackers-attack-possible-olympic-ban</a>	<a href="https://www.foxnews.com/tech">https://www.foxnews.com/tech</a>
5.	<a href="https://www.foxnews.com/person/c/barnini-chakraborty">https://www.foxnews.com/person/c/barnini-chakraborty</a>	<a href="https://www.foxnews.com/politics">https://www.foxnews.com/politics</a>
6.	<a href="https://www.foxnews.com/category/sports/soccer">https://www.foxnews.com/category/sports/soccer</a>	<a href="https://www.foxnews.com/lifestyle">https://www.foxnews.com/lifestyle</a>
7.	<a href="https://www.foxnews.com/category/sports/tennis">https://www.foxnews.com/category/sports/tennis</a>	<a href="https://www.foxnews.com/category/health/heart-health">https://www.foxnews.com/category/health/heart-health</a>
8.	<a href="https://www.foxnews.com/category/person/alex-morgan">https://www.foxnews.com/category/person/alex-morgan</a>	<a href="https://www.foxnews.com/category/us/education">https://www.foxnews.com/category/us/education</a>
9.	<a href="https://www.foxnews.com/sports/kikkan-randall-new-york-city-marathon-skiing-cancer">https://www.foxnews.com/sports/kikkan-randall-new-york-city-marathon-skiing-cancer</a>	<a href="https://www.foxnews.com/category/us/personal-freedoms">https://www.foxnews.com/category/us/personal-freedoms</a>
10.	<a href="https://www.foxnews.com/sports">https://www.foxnews.com/sports</a>	<a href="https://www.foxnews.com/category/tech/topics/video-games">https://www.foxnews.com/category/tech/topics/video-games</a>
<b>Overlap: 0</b>		

## 8. Stock

Sr. No.	Lucene (Default)	PageRank
1.	<a href="https://www.foxnews.com/tech/jeff-bezos-to-be-no-2-richest-behind-bill-gates-after-amazon-stock-drop">https://www.foxnews.com/tech/jeff-bezos-to-be-no-2-richest-behind-bill-gates-after-amazon-stock-drop</a>	<a href="https://www.foxnews.com/">https://www.foxnews.com/</a>
2.	<a href="https://www.foxnews.com/transcript/cavuto-looking-back-at-the-stock-market-crash-30-years-ago">https://www.foxnews.com/transcript/cavuto-looking-back-at-the-stock-market-crash-30-years-ago</a>	<a href="https://www.foxnews.com/category/us/economy">https://www.foxnews.com/category/us/economy</a>
3.	<a href="https://www.foxnews.com/transcript/cavuto-the-markets-are-easier-to-take-stock-of-than-life">https://www.foxnews.com/transcript/cavuto-the-markets-are-easier-to-take-stock-of-than-life</a>	<a href="https://www.foxnews.com/science/revolutionary-war-rifle-stolen-50-years-ago-on-display">https://www.foxnews.com/science/revolutionary-war-rifle-stolen-50-years-ago-on-display</a>
4.	<a href="https://www.foxnews.com/category/shows/your-world/transcript/common-sense">https://www.foxnews.com/category/shows/your-world/transcript/common-sense</a>	<a href="https://www.foxnews.com/entertainment/demi-lovato-first-interview-year">https://www.foxnews.com/entertainment/demi-lovato-first-interview-year</a>
5.	<a href="https://www.foxnews.com/category/person/sheryl-sandberg">https://www.foxnews.com/category/person/sheryl-sandberg</a>	<a href="https://www.foxnews.com/media/chris-wallace-elizabeth-warren-medicare-for-all-plan">https://www.foxnews.com/media/chris-wallace-elizabeth-warren-medicare-for-all-plan</a>
6.	<a href="https://www.foxnews.com/category/tech/companies/microsoft">https://www.foxnews.com/category/tech/companies/microsoft</a>	<a href="https://www.foxnews.com/tech/hp-recalls-more-laptop-lithium-ion-batteries-after-reports-of-overheating-melting-and-charring">https://www.foxnews.com/tech/hp-recalls-more-laptop-lithium-ion-batteries-after-reports-of-overheating-melting-and-charring</a>
7.	<a href="https://www.foxnews.com/category/tech/companies/amazon">https://www.foxnews.com/category/tech/companies/amazon</a>	<a href="https://www.foxnews.com/tech/heres-how-the-trump-tariffs-hike-may-affect-prices-for-pc-parts">https://www.foxnews.com/tech/heres-how-the-trump-tariffs-hike-may-affect-prices-for-pc-parts</a>
8.	<a href="https://www.foxnews.com/person/c/gordon-chang">https://www.foxnews.com/person/c/gordon-chang</a>	<a href="https://www.foxnews.com/category/tech/companies/amazon">https://www.foxnews.com/category/tech/companies/amazon</a>

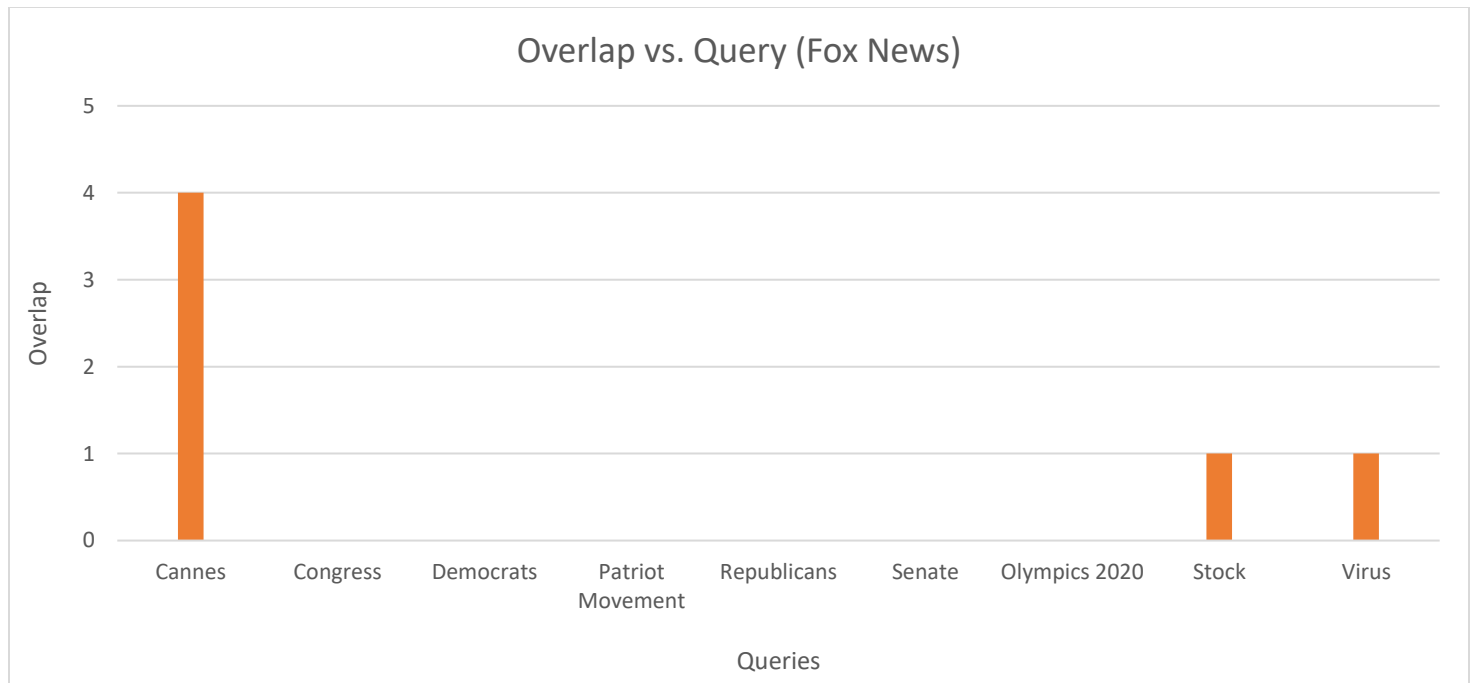


9.	<a href="https://www.foxnews.com/auto/fiat-chrysler-sales-boss-reid-bigland-sues-company-for-violating-whistleblower-protections">https://www.foxnews.com/auto/fiat-chrysler-sales-boss-reid-bigland-sues-company-for-violating-whistleblower-protections</a>	<a href="https://www.foxnews.com/opinion/max-lucado-fearless-parenting">https://www.foxnews.com/opinion/max-lucado-fearless-parenting</a>
10.	<a href="https://www.foxnews.com/sports/royals-hire-ex-cardinals-skipper-mike-matheny-as-manager">https://www.foxnews.com/sports/royals-hire-ex-cardinals-skipper-mike-matheny-as-manager</a>	<a href="https://www.foxnews.com/auto/electric-ford-mustang-lithium">https://www.foxnews.com/auto/electric-ford-mustang-lithium</a>
<b>Overlap: 1</b>		

## 9. Virus

Sr. No .	Lucene (Default)	PageRank
1.	<a href="https://www.foxnews.com/tech/computer-virus-cripples-tribune-publishing-los-angeles-times">https://www.foxnews.com/tech/computer-virus-cripples-tribune-publishing-los-angeles-times</a>	<a href="https://www.foxnews.com/science">https://www.foxnews.com/science</a>
2.	<a href="https://www.foxnews.com/science/deadly-seal-virus-spreading-melting-arctic-ice">https://www.foxnews.com/science/deadly-seal-virus-spreading-melting-arctic-ice</a>	<a href="https://www.foxnews.com/category/science/planet-earth">https://www.foxnews.com/category/science/planet-earth</a>
3.	<a href="https://www.foxnews.com/health/connecticut-third-mosquito-eee-death">https://www.foxnews.com/health/connecticut-third-mosquito-eee-death</a>	<a href="https://www.foxnews.com/category/tech/topics/computers">https://www.foxnews.com/category/tech/topics/computers</a>
4.	<a href="https://www.foxnews.com/category/tech/topics/virus">https://www.foxnews.com/category/tech/topics/virus</a>	<a href="https://www.foxnews.com/category/science/wild-nature">https://www.foxnews.com/category/science/wild-nature</a>
5.	<a href="https://www.foxnews.com/health/eee-eastern-equine-encephalitis-massachusetts-man-killed">https://www.foxnews.com/health/eee-eastern-equine-encephalitis-massachusetts-man-killed</a>	<a href="https://www.foxnews.com/science/deadly-seal-virus-spreading-melting-arctic-ice">https://www.foxnews.com/science/deadly-seal-virus-spreading-melting-arctic-ice</a>
6.	<a href="https://www.foxnews.com/health/what-is-norovirus-3-things-to-know-about-the-vomit-inducing-bug">https://www.foxnews.com/health/what-is-norovirus-3-things-to-know-about-the-vomit-inducing-bug</a>	<a href="https://www.foxnews.com/science/sandra-orangutan-legal-personhood-new-home-florida">https://www.foxnews.com/science/sandra-orangutan-legal-personhood-new-home-florida</a>
7.	<a href="https://www.foxnews.com/health/pregnant-women-who-get-flu-shot-are-less-likely-to-be-hospitalized-from-virus-cdc-says">https://www.foxnews.com/health/pregnant-women-who-get-flu-shot-are-less-likely-to-be-hospitalized-from-virus-cdc-says</a>	<a href="https://www.foxnews.com/science/ancient-shipwrecks-stone-pyramid-anchors-discovered-greek-island">https://www.foxnews.com/science/ancient-shipwrecks-stone-pyramid-anchors-discovered-greek-island</a>
8.	<a href="https://www.foxnews.com/category/health/infectious-disease/zika">https://www.foxnews.com/category/health/infectious-disease/zika</a>	<a href="https://www.foxnews.com/science/earths-mantle-and-crust-are-in-a-fiery-battle-to-the-death-of-supercontinents">https://www.foxnews.com/science/earths-mantle-and-crust-are-in-a-fiery-battle-to-the-death-of-supercontinents</a>
9.	<a href="https://www.foxnews.com/health/flu-season-2019-vaccine">https://www.foxnews.com/health/flu-season-2019-vaccine</a>	<a href="https://www.foxnews.com/science/mammoth-traps-prehistoric-mexico">https://www.foxnews.com/science/mammoth-traps-prehistoric-mexico</a>
10.	<a href="https://www.foxnews.com/health/british-mom-son-flu">https://www.foxnews.com/health/british-mom-son-flu</a>	<a href="https://www.foxnews.com/science/mercury-transit-2019-what-to-know">https://www.foxnews.com/science/mercury-transit-2019-what-to-know</a>
<b>Overlap: 1</b>		

### Overlap Graph:



**Conclusion:** Hence we studied how the query results differ depending on the Solr default page ranking which uses only a combination of Vector Space Model and the Boolean Model and the external Page Ranking algorithm which takes into account the incoming links for each page to decide the Page Rank.