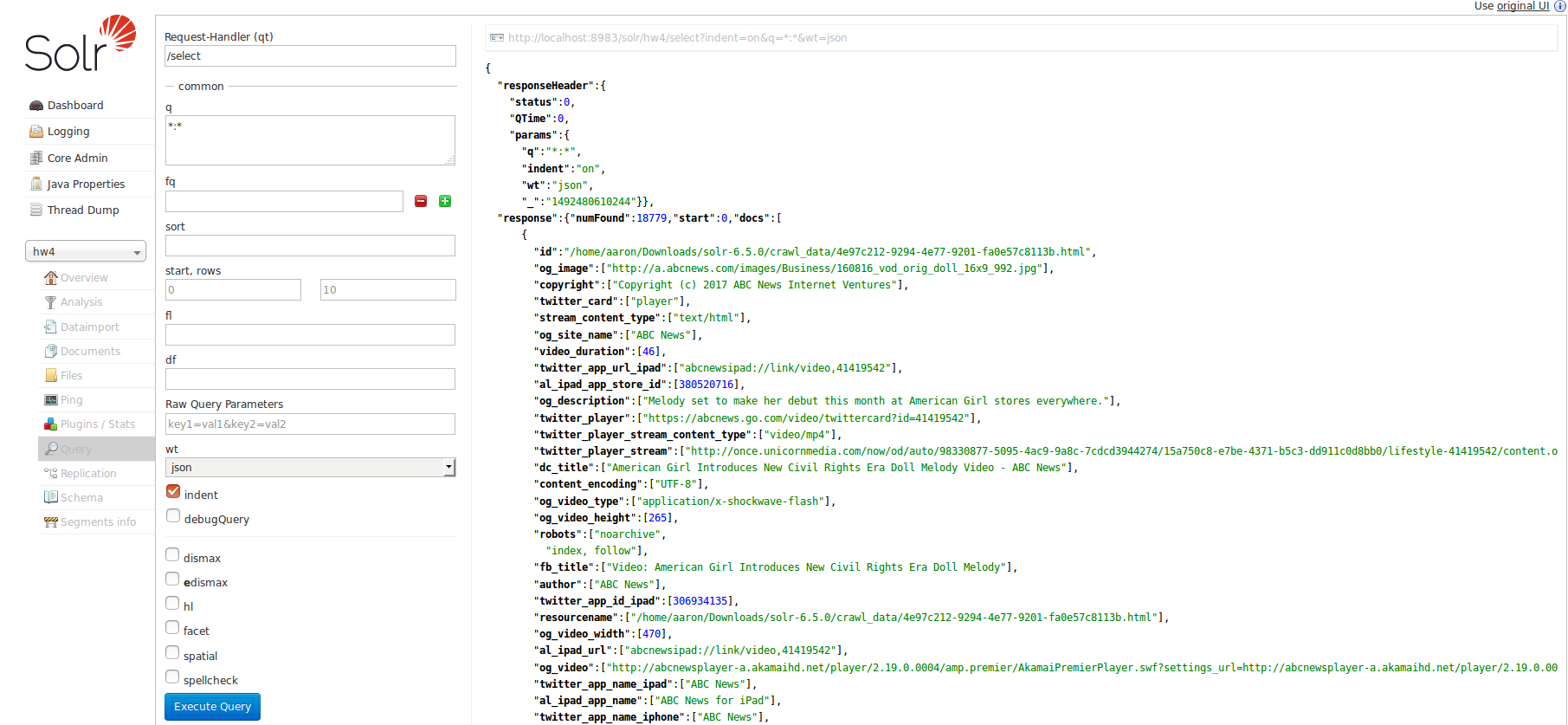
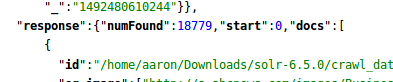
**CSCI572 Homework 4 Report**

**Name: Shurui Liu, 9999-9586-70**

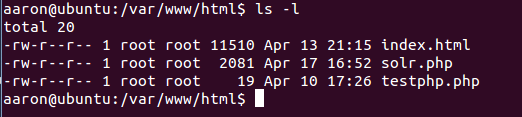
1. **Steps**
2. The first step is to use Solr to index all the HTML files that assigned to me. I am responsible for **ABCNews**. This screenshot shows you there are **18779** files are indexed by Solr.



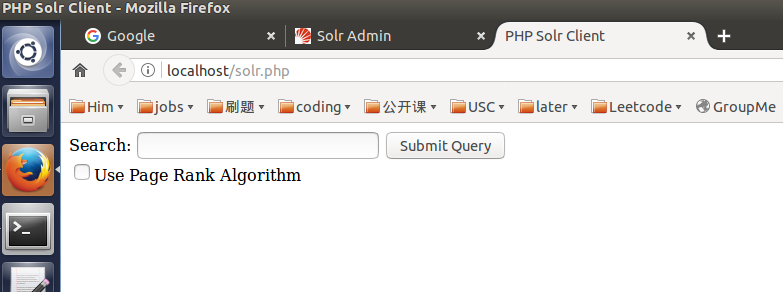


Before indexing these files, I made proper changes in **managed-schema** and **solrconfig.xml** based on the tutorial we got from 572 website.

1. The second step is setup the PHP page on my Apache server. I place my code, **solr.php**, at this location like the screenshot below. **/var/www/html**



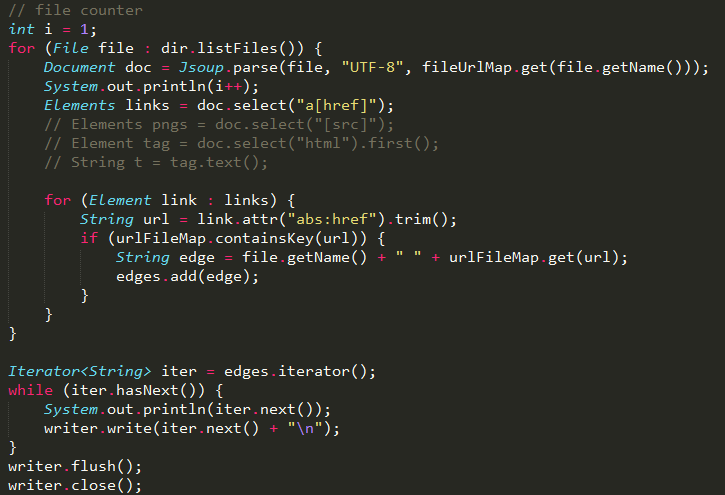
When both Apache and Solr are on, I have this page below.



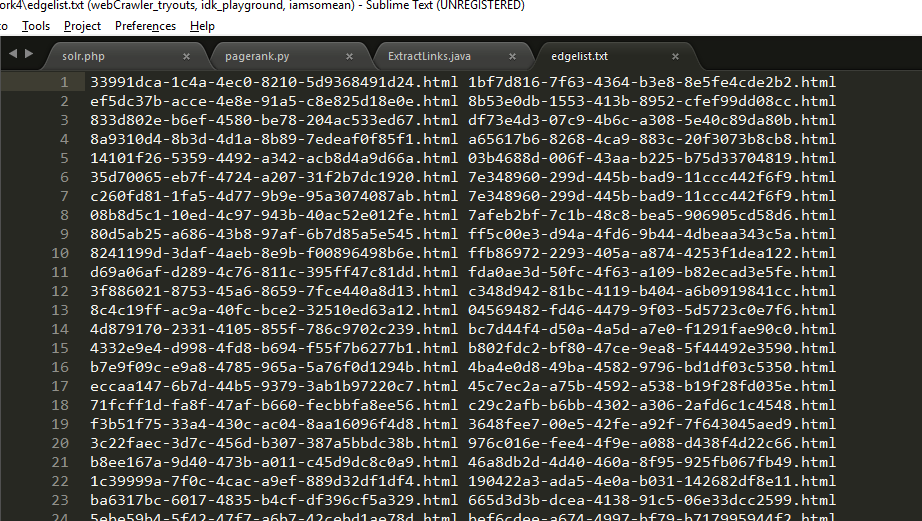
1. Then I write a Java snippet to calculate the edgelist and save it as a text file called edgelist.txt.

The Java code uses a library called Jsoup to calculate the edgelist. This screenshot below shows the critical part of the code.

For variable ***url***, we have to use **abs:href** for **link.attr**.

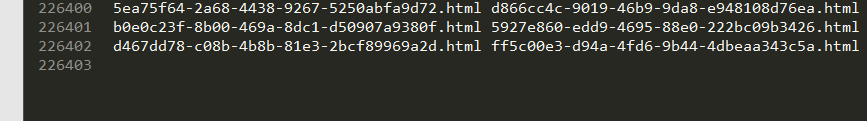


After running this code, I got a edgelist text file. Here is a screenshot of what it looks like.



The file means that there is outgoing links from the HTML code on the **left** side point to the HTML code on the **right** side.

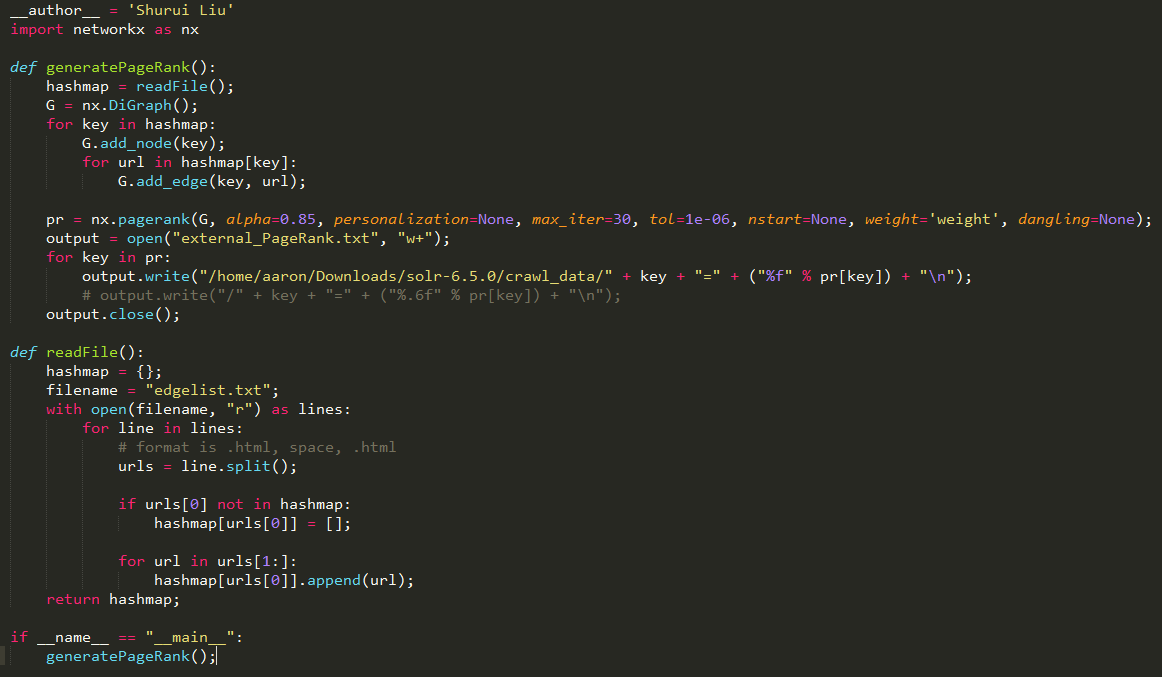
The number of HTML files is **18779**, and the number of edges in this edgelist.txt file is **226402**.

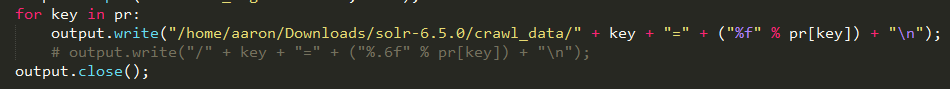


1. Based on the tutorial we got for the homework assignment, here is how I computed the pagerank.

***pr = nx.pagerank(G, alpha=0.85, personalization=None, max\_iter=30, tol=1e-06, nstart=None, weight='weight', dangling=None);***

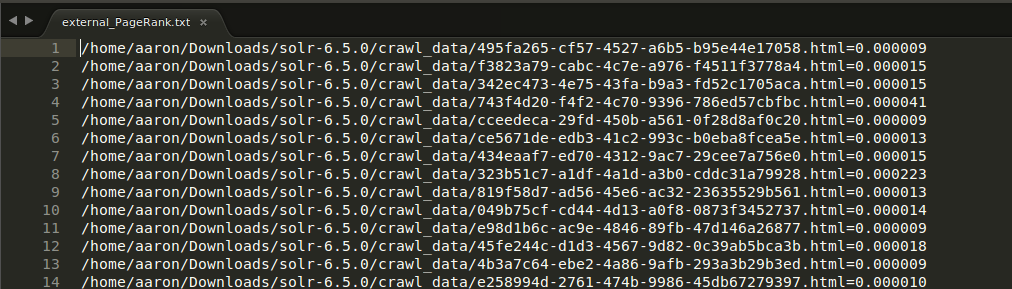
alpha is 0.85, personalization is None, max iteration time is 30, tolerance (decimal number) is 1e-06, nstart is None, weight is ‘weight’, and dangling is None. Code is below. Notice that I attached the crawl\_data folder path in the beginning of the file name.





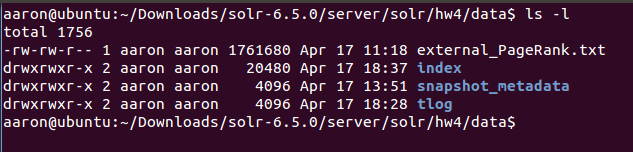
After running this code, I got a text file called **external\_PageRank.txt**, which is what we need to import into Solr for the PageRank algorithm. Here’s what it looks like below. The format is

**/filepath/filename.html=0.xxx**

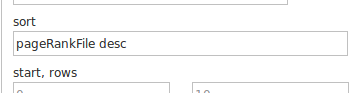


1. After having this **external\_PageRank.txt** file, I place it at here, **solr-6.5.0/server/solr/hw4/data**

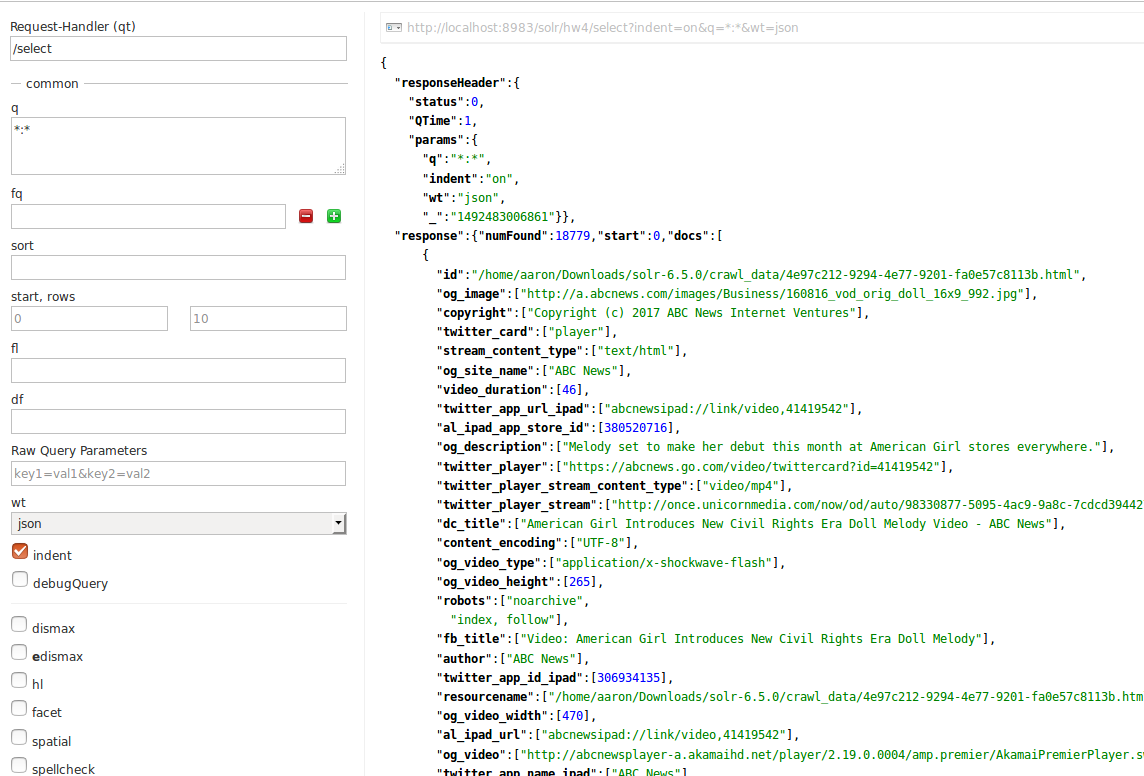
Notice that **hw4** is my core name.

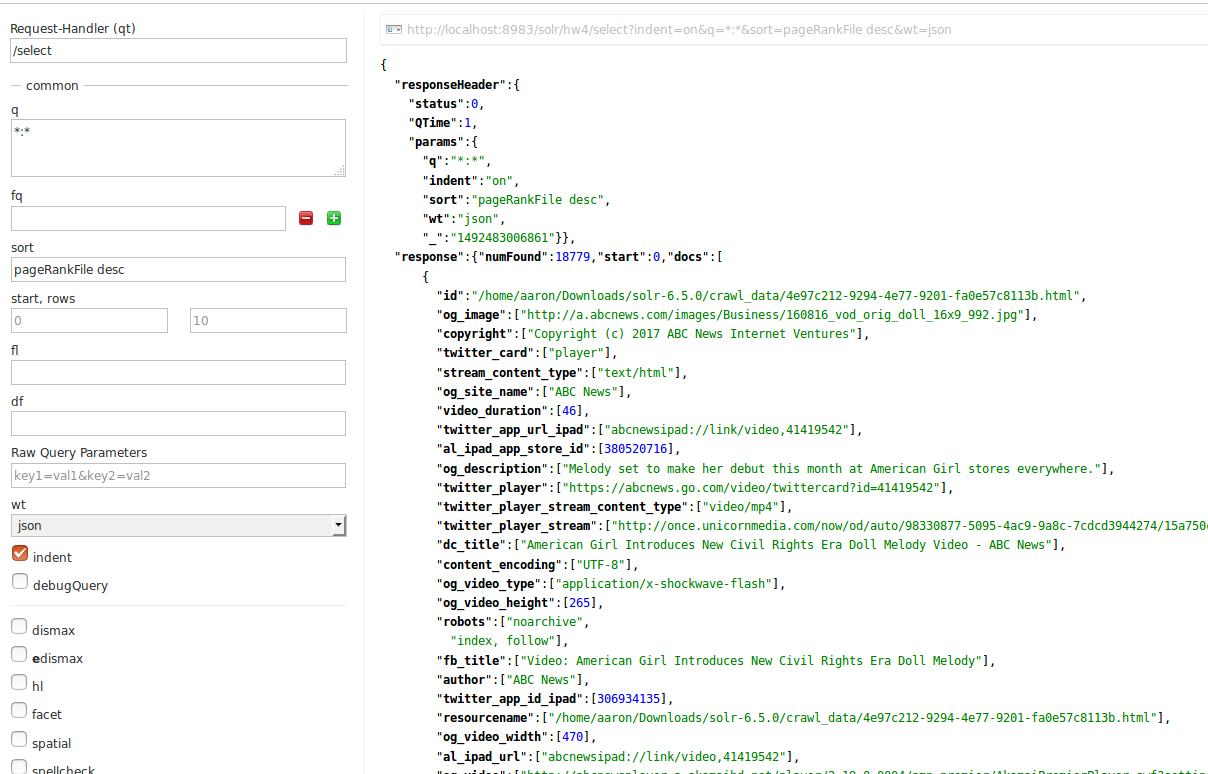


1. Then going back to the Solr UI, make a query with this change to apply the PageRank algorithm.



But unfortunately there is **NOTHING** changed when I applied this sorting algorithm. The query results are the **SAME**. I don’t think the problem comes from the edgelist or the pagerank calculation, it might come from the xml configuration. Screenshots are below.





1. **Query results**

* Brexit

Results 1 - 10 of 132:

Document Brexit European Union Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 46271

Document Brexit European Union Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 51693

Document Tony Blair's new mission is to change minds on Brexit

Author: ABC News | Size: 25167

Document Brexit European Union Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 43041

Document Brexit European Union Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 42704

Document Brexit European Union Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 42701

Document Brexit European Union Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 42761

Document Brexit European Union Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 42761

Document AP Interview: Sweden PM: Brexit deal in 2 years 'very tough'

Author: ABC News | Size: 28917

Document Tony Blair's new mission is to change minds on Brexit - ABC News

Author: ABC News | Size: 76964

* NASDAQ

Results 1 - 10 of 67:

Document NASDAQ Composite Index Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 43866

Document NASDAQ 100 Index Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 50615

Document NASDAQ Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 44503

Document Indexes News, Photos and Videos - ABC News

Author: None | Size: 29670

Document How major US stock market indexes fared on Friday

Author: ABC News | Size: 23618

Document Markets Right Now: Late push renews records for US indexes

Author: ABC News | Size: 23199

Document Stocks Party Like It�s 2000 During Record Highs - ABC News

Author: ABC News | Size: 76232

Document Russell 2000 Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 43605

Document Triple-Digit Decline for Dow Jones Industrials - ABC News

Author: ABC News | Size: 98595

Document Facebook Shares Back at the IPO Price - ABC News

Author: ABC News | Size: 77900

* NBA

Results 1 - 10 of 526:

Document National Basketball Association NBA

Author: None | Size: 51512

Document NBA warns Texas over proposed 'bathroom bill'

Author: ABC News | Size: 20113

Document Stephen Curry, Warriors still top NBA merchandise sales - ABC News

Author: ABC News | Size: 69263

Document #NBArank Rising Stars: Your list of the NBA's top players under 25 - ABC News

Author: ABC News | Size: 68628

Document #NBArank Rising Stars: Your list of the NBA's top players under 25 - ABC News

Author: ABC News | Size: 68630

Document #NBArank Rising Stars: Your list of the NBA's top players under 25 - ABC News

Author: ABC News | Size: 68630

Document National Basketball Association NBA

Author: None | Size: 46904

Document National Basketball Association NBA

Author: None | Size: 46847

Document National Basketball Association NBA

Author: None | Size: 46104

Document National Basketball Association NBA

Author: None | Size: 46160

* Snapchat

Results 1 - 10 of 95:

Document Snapchat Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 48462

Document Snapchat Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 50407

Document Snapchat Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 50704

Document Snapchat Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 50406

Document Snapchat Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 50409

Document Snapchat Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 50405

Document Snapchat Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 50849

Document Snapchat Filters Among Top Halloween Costume Trends of 2016 - ABC News

Author: ABC News | Size: 79753

Document Police: 200 Descend on Philadelphia Mall in 2nd Night of Violence; Fracas Organized on Snapchat - ABC News

Author: ABC News | Size: 78049

Document Snapchat Files for IPO Video - ABC News

Author: ABC News | Size: 65517

* Illegal Immigration

Results 1 - 10 of 1694:

Document Illegal Immigration Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 45964

Document Illegal Aliens Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 46763

Document Arizona Immigration Law: Judge Susan Bolton Blocks Parts of SB 1070 - ABC News

Author: ABC News | Size: 77985

Document Nationality Law Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 48561

Document Dying Dad Jesus Navarro Denied Kidney Transplant Over Immigration Status, but Supporters Try to Help - ABC News

Author: ABC News | Size: 79729

Document Dying Dad, Jesus Navarro, to Get Kidney Transplant Despite Undocumented Immigration Status - ABC News

Author: ABC News | Size: 76962

Document Immigration News, Photos and Videos - ABC News

Author: None | Size: 30757

Document Immigration News, Photos and Videos - ABC News

Author: None | Size: 30761

Document Judge Susan Bolton Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 46864

Document Businesses nationwide participate in Day Without Immigrants protest

Author: ABC News | Size: 27907

* Donald Trump

Results 1 - 10 of 10141:

Document Donald Trump Jr. Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 48293

Document Donald Trump's Inauguration in Photos Photos - ABC News

Author: ABC News | Size: 122105

Document Tiffany Trump: News, Videos and Photos-ABC News

Author: None | Size: 51537

Document The Moment Donald Trump and His Family Knew He Won the Election - ABC News

Author: ABC News | Size: 78493

Document Trump's First 100 Days Photos - ABC News

Author: ABC News | Size: 125591

Document Donald Trump Latest News and Videos

Author: None | Size: 50757

Document ANALYSIS: Donald Trump Sees Calm After Storm in First DC Trip as President-Elect - ABC News

Author: ABC News | Size: 72805

Document GOP Strategist Likely Faces Hurdles in Defamation Suit Against Donald Trump - ABC News

Author: ABC News | Size: 74133

Document President Donald Trump Vows to Launch 'Major Investigation' Into Alleged Voter Fraud - ABC News

Author: ABC News | Size: 77476

Document OPINION: What Type of President Will Donald Trump Be - Lincoln or Buchanan? - ABC News

Author: ABC News | Size: 72281

* Russia

Results 1 - 10 of 1553:

Document Top Trump envoys signal no quick changes to US-Russia ties

Author: ABC News | Size: 28396

Document US secretary of state says Russia must honor Ukraine deal

Author: ABC News | Size: 25419

Document Russia Sanctions Explained: A Look at the Measures Donald Trump Could Roll Back - ABC News

Author: ABC News | Size: 81310

Document Russia Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 47345

Document US official says Russia deployed missile in treaty violation - ABC News

Author: ABC News | Size: 73777

Document What we know - and don't know - about the Trump team's contacts with Russia before the election - ABC News

Author: ABC News | Size: 78070

Document Nikki Haley Blasts Russia in First Remarks at UN Security Council - ABC News

Author: ABC News | Size: 78046

Document Trump: Reports that campaign had contact with Russia are 'fake news'

Author: ABC News | Size: 27173

Document EU Diplomats Back Continued Russia Sanctions - ABC News

Author: ABC News | Size: 75468

Document Danes See Russia as a 'Leader' With 'Advanced Capabilities' - ABC News

Author: ABC News | Size: 65616

* NASA

Results 1 - 10 of 4937:

Document NASA

Author: None | Size: 47764

Document Incredible Images Captured From Space Photos - ABC News

Author: ABC News | Size: 227987

Document Picture | Incredible Images Captured From Space - ABC News

Author: ABC News | Size: 228899

Document NASA Targets New Date for Mars InSight Drilling Mission - ABC News

Author: ABC News | Size: 65094

Document Two Earth-Size Planets Found by NASA Kepler Mission - ABC News

Author: ABC News | Size: 68683

Document Pluto's Moon Charon Had a 'Hulk' Period, New NASA Images Reveal - ABC News

Author: ABC News | Size: 66624

Document NASA Wants to Blast Your Art Work Into Space - ABC News

Author: ABC News | Size: 64284

Document Kepler Space Telescope Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 51246

Document Mars Exploration Videos at ABC News Video Archive at abcnews.com

Author: None | Size: 50943

Document Breathtaking Views of Earth From Above Photos - ABC News

Author: ABC News | Size: 100529

1. **Graphs**

Since I didn’t get the PageRank algorithm work on Solr, there is no graphs to show.

1. **Explanation about why some pages have higher page rank**

The logic of PageRank algorithm is ranking different webpages based on the number of outgoing links (outgoing edges) they have. For any pages except those isolated pages (with no outgoing links), if you have more numbers of outgoing links, you will have a relatively higher rank; but if you have more incoming links, it will lower your ranking.