ASSIGNMENT -3

REPORT by DEEPAK GARG

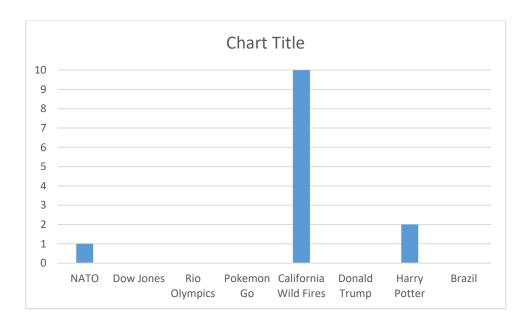
1. Given data:

- a. Used the downloaded .html web pages which were provided to us.
- b. Also used mapping files (map_nbcnews.csv file and map_wsj.csv file), provided to us. These files map the corresponding saved .html file with actual URL, which was used later to redirect to public URL rather than the local saved file as per the requirement.

2. Steps Followed

- Installed Ubuntu using Oracle VM Virtual Box, and in that I have installed the solr –
 6.2.0/
- Created a core (named **myexample**) in solr and did the indexing using Apache Tika.
- The downloaded files are stored at /home/deepak/solr-6.2.0/crawl_data and the pages are indexed using solr
- I used NextworkX library, to compute page rank file of Page Ranking Algorithm. I created the NetworkX graph from **extract_links.txt** by drawing an edge from each downloaded file to its corresponding outgoing URLs. The page rank function then use this NetworkX graph as input and computes the page rank for each of the document using Python. I used alpha value = 0.85,max number of iterations =30 . I used default values for other parameters like error tolerance, etc.
- The output of Python program was **external_PageRank.txt**, which have key value as id of the file that is indexed and value as corresponding normalized page rank.
- After adding external_PageRank (external_PageRank.txt) file I have to modify few parameters in solr config.xml, schema.xml and managed-schema.xml as mentioned in the assignment. The core has to be reloaded for the changes to get effect.
- The external Page rank file is given as input to the solr using the steps mentioned in the assignment
- I used PHP programming language to write client (sample.php) and used XAMPP server to host the file. I have placed the sample.php file in htdocs folder of LAMP and I can see the result of PHP page at localhost/sample.php.

3. Overlap Graphs



Harry potter = 2 overlap NATO = 1 overlap California Wild Fires = 10 overlaps

Overlaps mean the results are same when using Pagerank approach and Default approach.

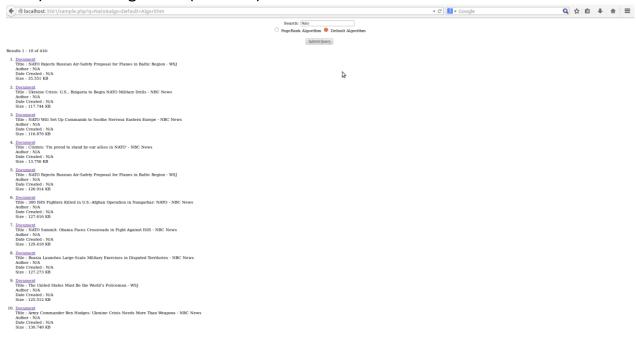
4. Why Some Pages Have Higher Page Rank

Page rank of each page depends on Page rank of other pages which are pointing to it. The reason why certain pages have higher Page rank can be because of three factors:

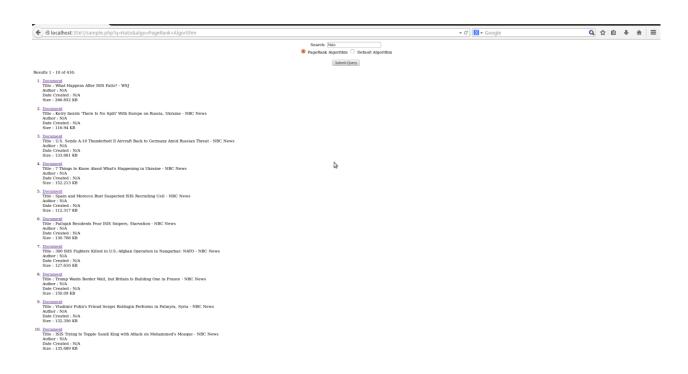
- A page is ranked higher as there are more links to it.
- Say a Page A has a higher PageRank than Page B, even though there are fewer links to Page A; the link to A comes from an important page and hence is of high value.
- Also, Well-structured website with a proper design strengthens the PageRank for some webpages.

5. Screen Shots

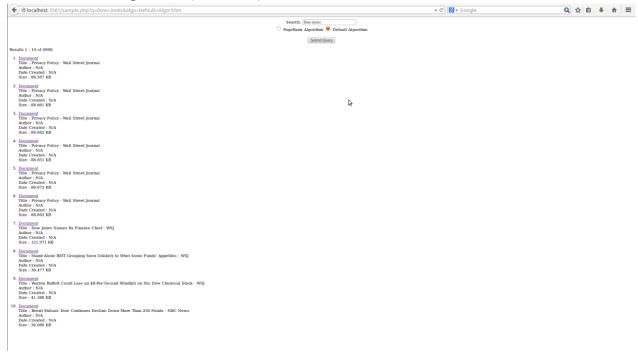
1) Default Algorithm(Lucence) - Queried for "NATO"



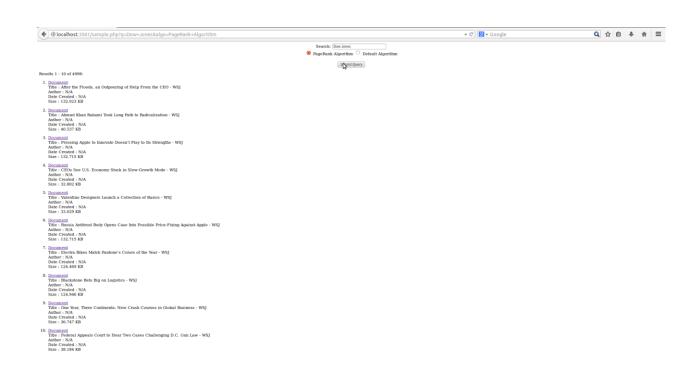
2) Page Rank Algorithm – Queried for "NATO"



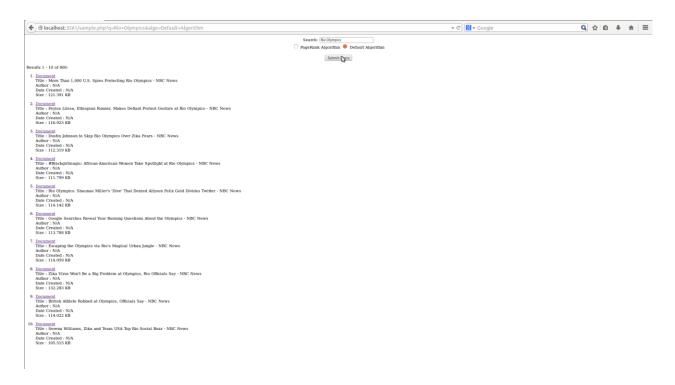
3) Default Algorithm(Lucence) – Queried for "Dow Jones"



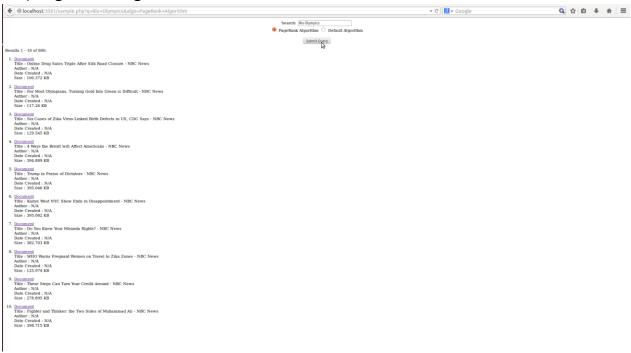
4) Page Rank Algorithm – Queried for "Dow Jones"



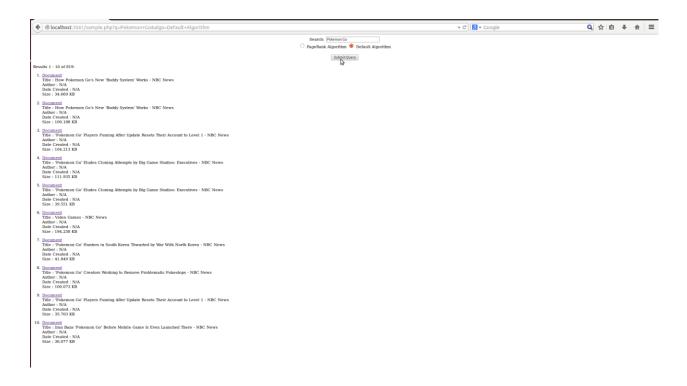
5) Default Algorithm – Queried for "RIO OLYMPICS"



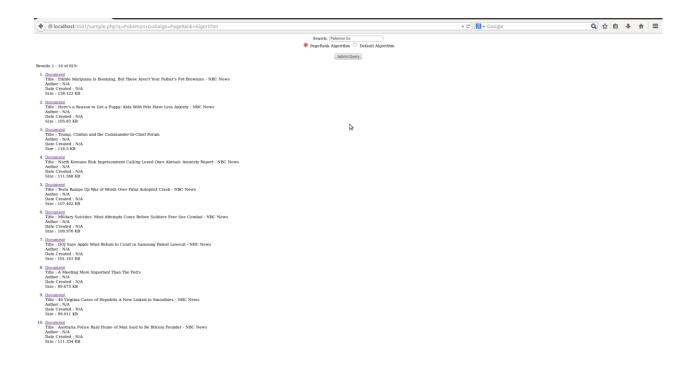
6) Page Rank Algorithm – Queried for "Dow Jones"



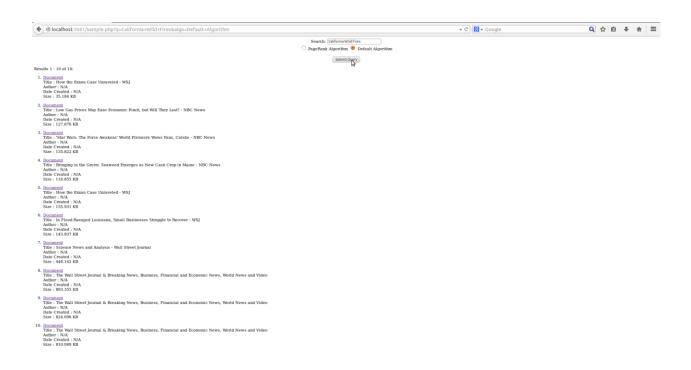
7) Default Algorithm – Queried for "pokemon go"



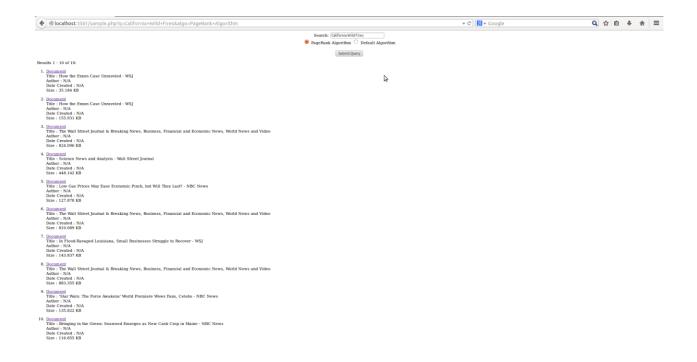
8) Page Rank Algorithm – Queried for "Pokemon go"



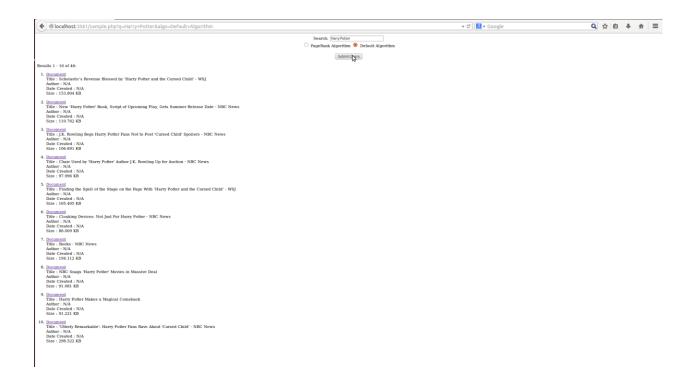
9) Default Algorithm – Queried for "California wild fires"



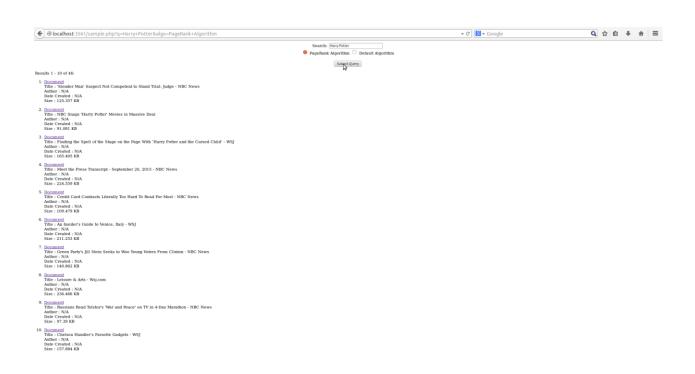
10) Page Rank Algorithm – Queried for "California wild fires"



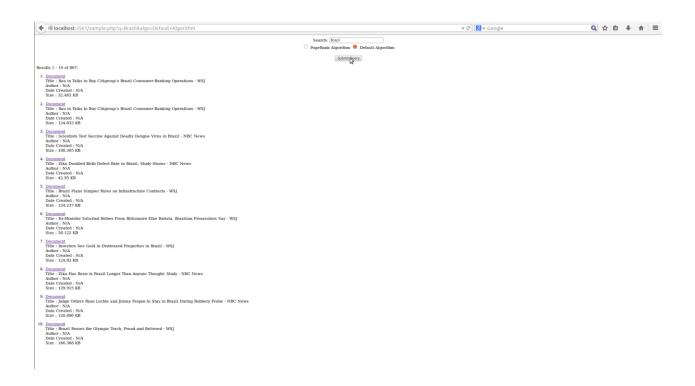
11) Default Algorithm – Queried for "Harry potter"



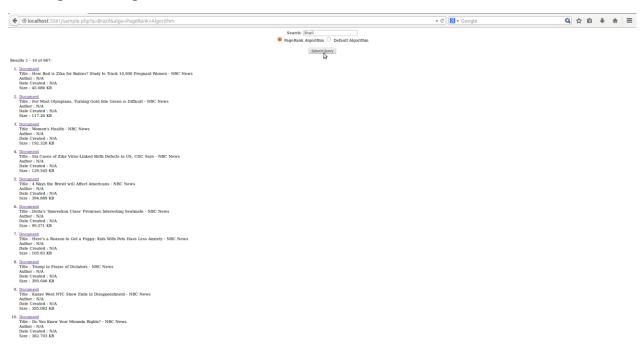
12) PageRank Algorithm – Queried for "Harry Potter"



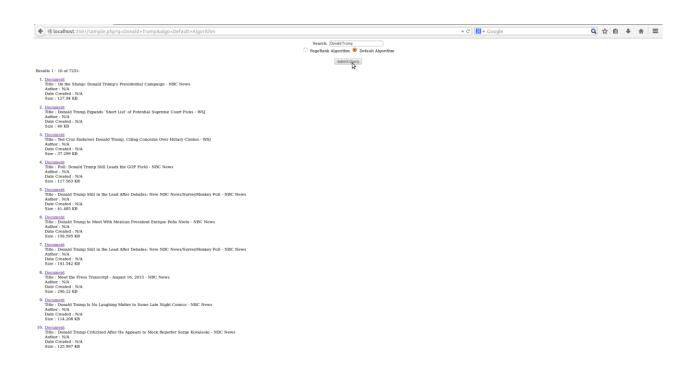
13) Default Algorithm – Queried for "Brazil"



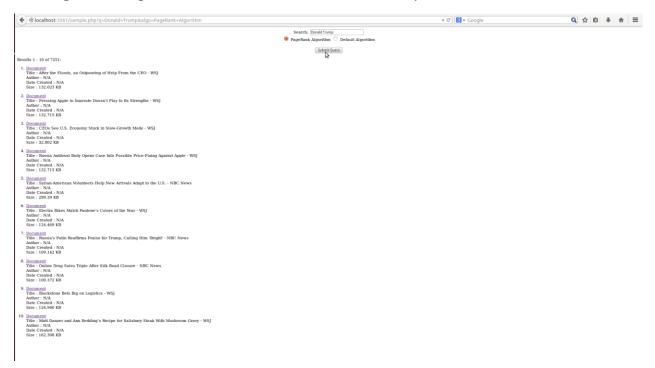
14) PageRank Algorithm – Queried for "Brazil"



15) Default Algorithm – Queried for "Donald Trump"

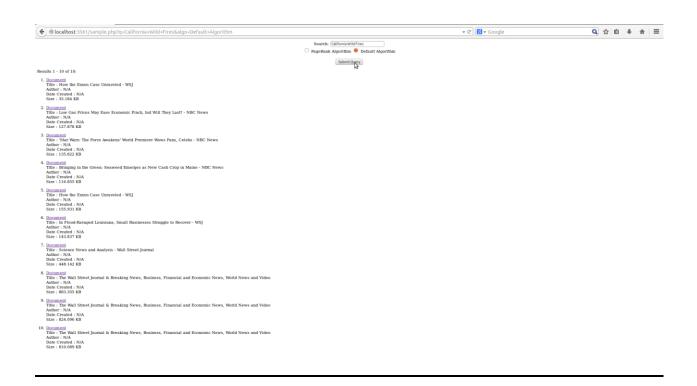


16) PageRank Algorithm – Queried for "Donald Trump"

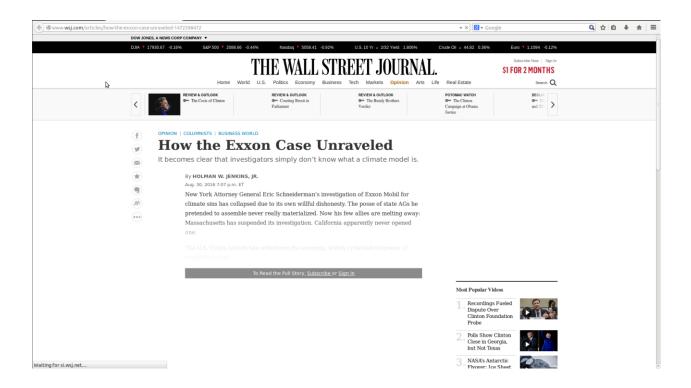


FLOW FROM QUERY PAGE TO RESULT PAGE

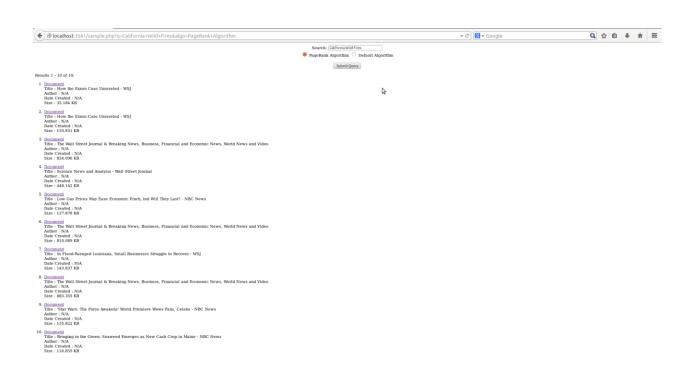
1. Default query page (California wild fire):



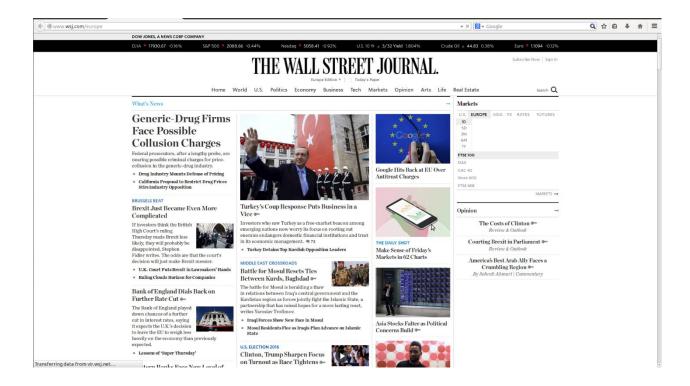
2. When clicked on first link, the following comes up(California wild fire) in Default: RESULT PAGE



3. PageRank query page (California wild fire)



4. When clicked on doc link, the following comes up(California wild fire) in pagerank: RESULT PAGE



Important Points

Clicking on URL should redirect to public URL.

Mapping files provided to us stores the mapping between the local file name to corresponding public URLs. In php file, the mapping file is used to redirect the page to actual URL rather than the local file path.

Radio Button:

I have used 2 radio button in UI, in which by default Algorithm is selected by default. I can switch to PageRank algorithm by clicking that respective radio button, accordingly the request is send to Solr in the PHP code.