EE101 Final Project Report

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1 Overview

1.1 Project File Tree

1.2 Develop Environment

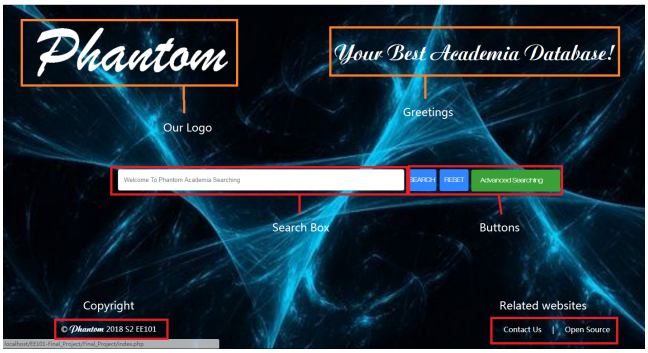
2 Front-end

written by Yifu Chen

I was in charge of the front-end part.I mainly used CSS and BOOTSTRAP to beauify our websitek.In my opinion,I hope my websites be plain and straightforward,so I did not decorate our websites deliberately,and this my idea of designing the layout fo our websites.

I will introduce my work of each page respectively.

2.1 Index.php



Our index page is shown above.First of all,I would like to introduce the process of my designing our home page.At first,there were three search boxes in the page.The search box "Author","Title" and "conference",and the layout of the index.php was settled.Then,we decided to use multi-searching.Therefore I cut down the number of search boxes into one.Finally,I polished the index.php and the page became what you can see now.

The elements the index page consists of was shown in the graph above,ang I am going to introduce every part respectively.

By the way,the favicon of our websites was *Raffaello*'s *The School of Athens*.

2.1.1 Logo

The name of our search engine came from *The Phantom of the opera*,one of my favorite films,and I hope that the speed of our searching engine can be as fast as a phantom.It took me so much time to find a appropriate font to display our logo.Finally I found out a font "书体坊兰亭体".However,the words could not be shown in terms of vector graph,which meant that the edge of the words were not smooth,and that is a defect a our logo.

2.1.2 Greeting Words

To display the greeting words,I also spent plenty of time to find a approriate fonts.Finally, I found a font named "ChannelSlanted2" to present the greeting words.

2.1.3 Search box & buttons

The search box and the buttons are the key part of the page,and I beautified the buttons,and the result was shown in the following pictures.

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Advanced Searching
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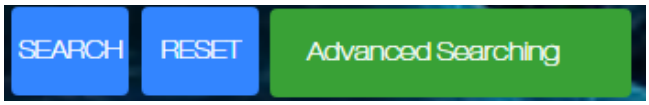
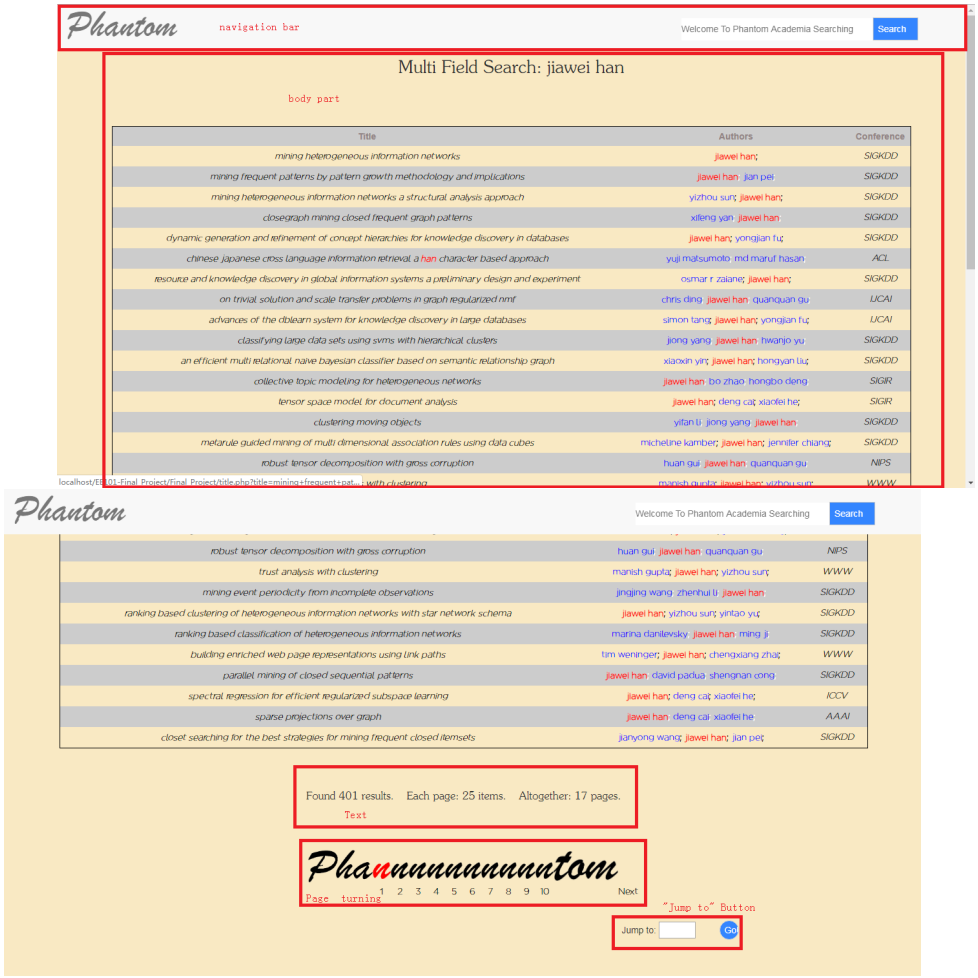


2.1.4 Copyright & Related Websites

These two parts were mainly written by Ziliang Guo and Aofan Jiang and Hyperlinks were set on the texts "Contact Us" and "Open source".

2.2 Search.php

I am going to introduce every part of search.php respectively.



2.2.1 Navigation Bar

I used css and bootstrap to construct the navigation bar.I thought there was no need to build a that complicated navigation bar,so I just put our logo in the top left corner of the screen and set it with a hyperlink to the homepage,and in the top right corner if the screen was a search box to conduct multi-search.

2.2.2 Body Part & Text

I selected the font "Regencie" to beaufy the table and "书体坊赵九江钢笔楷书" to beatufy the texts.

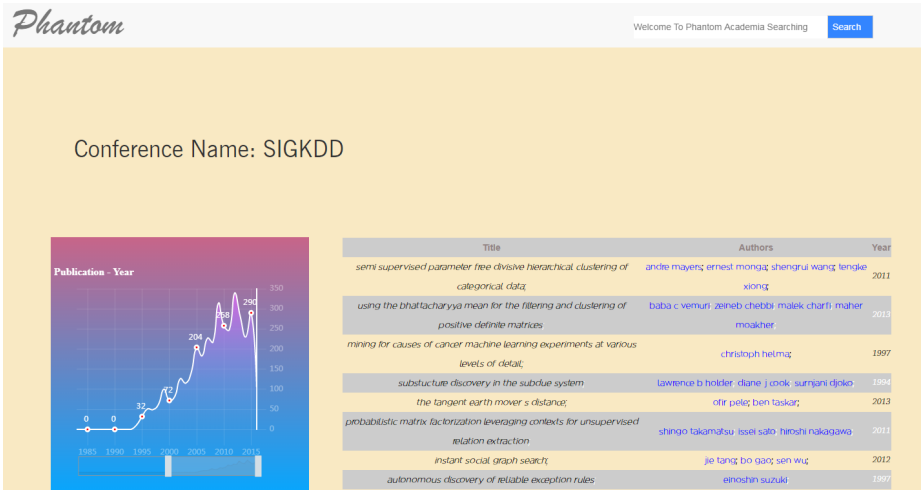
2.2.3 Paper Turning & "Jump to" Button

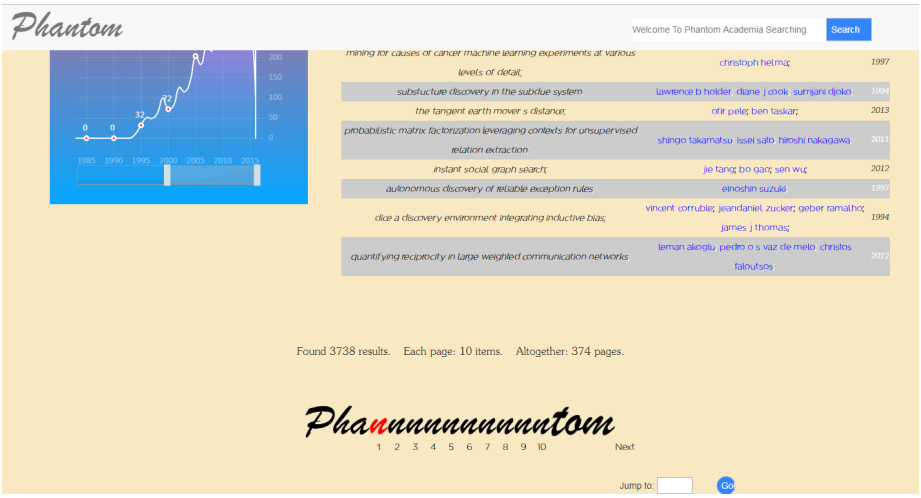
Our idea to design the pattern of the Paper Turning is to imitate *Google*'s pattern.

Therefore,I photoshopped some pictures and realized this idea.

I beautfied the "Jump to" box,and the button "Go!" was modified by Aofan Jiang.

2.3 Conference.php





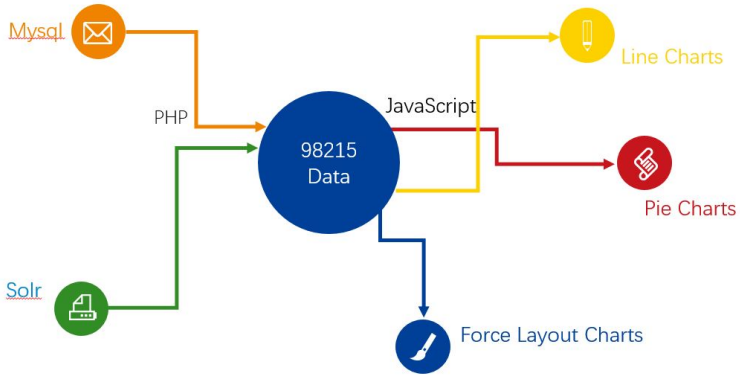
The beautification of Conference.php was similiar to the search.php.Therefore I will not go into details here.

2.4 Author.php

3 Graphs

[Start] — By Jialong Guo 518030910272 —

3.1 Overview



When it comes to our graph part, it can be chiefly divided into three parts:

The first of which is to get all the data we need in order to draw a graph.

The second part of which is to format all the data into the form that the corresponding graph is needed.

The last part of which is just to use specific javascript library to create graphs and make them beautiful.

3.2 Design

In author page' s left part, I add a collumn graph, which displays the number of publication the author has yearly and shows the trend of his/her academic activity to give users a clear impression about the author' s research fruit and the frequency of his/her delivery.

In author page' s left part, I also add a pie graph, which showcases how many papers the author publishs in a conference which brings a clear view on the author is mostly connected with what conference.

In paper page's upper part, there' s a line-collumn graph showing its yearly

citations, from which we can gain a insight into the popularity of its research field.

In paper page's lower part, I use a force directed graph to display the relations between similar papers. It gives a convience way to find related papers and messages.

In conference page, a line graph of its yearly amount of papers may reveal its academic influence.

3.3 Searching Data

In this subsection I mainly discuss the first part of graph drawing, get data from database. Since diverse graphs need diverse data, here I just demonstrate a specific example of getting data, which can mostly stand for my means of searching data.

3.3.1 From Mysql to Solr

Taking time cost into consideration, we may need to import data into solr from mysql in advance, for searching from solr will spend more time than from mysql. Thereby, it is required that we write the referenceID of reference papers into solr's schema, which allows us to search the reference papers of a paper just from solr when needed.

The final data we put in solr is formed in this way:

```
with codecs.open(FP_out, 'w', 'utf-8-sig') as f:
    data = {"PaperID": result[0][0],
            "Title": result[0][1],
            "Authors'ID": [result[0][2]],
            "Authors'Name": [result[0][3]],
            "ConferenceID": result[0][4],
            "ConferenceName": result[0][5],
            "Year": result[0][6],
            "ReferenceID":[result[0][7]]}
#            "AffiliationID":[result[0][8]]}
    for i in range(1, len(result)):
        out_print = False
        if result[i][0] == data["PaperID"]:
            if (result[i][2] not in data["Authors'ID"]):
                data["Authors'ID"].append(result[i][2])
            if (result[i][3] not in data["Authors'Name"]):
                data["Authors'Name"].append(result[i][3])
            if (result[i][7] not in data["ReferenceID"]):
                data["ReferenceID"].append(result[i][7])
```

You can refer to the codes attached for detailed information.

3.3.2 Searching in Solr

The first step is getting value form user's input, then create the url link to search in solr. After this step, we can get a .json file with the result.

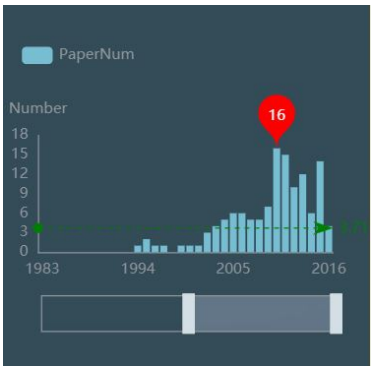
3.4 Formatting Data

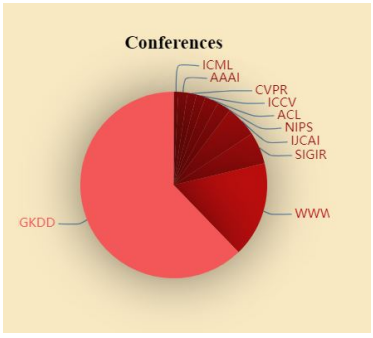
In this section, we mainly discuss how to change the search result into suitable formation of drawing a graph.

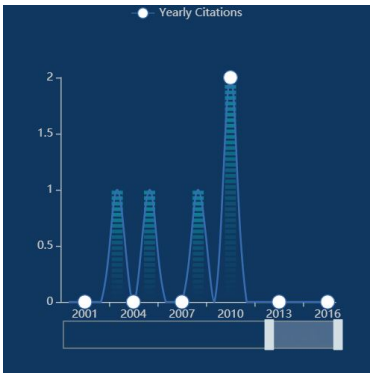
3.5 Drawing Graph

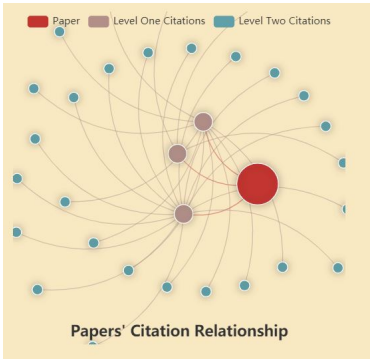
In the section, the process of drawing with echarts is mainly discussed.

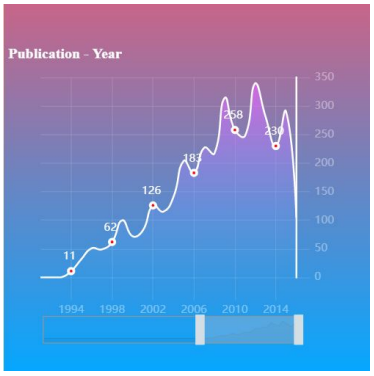
3.6 Fruits' Display











[End] — By Ziliang Guo 518030910273 —

4 Overview

[Start] — By Ziliang Guo 518030910273 —

(1) I took the initiative that we take full advantage of Github to accelerate our project. I also create a document to take notes of the porblems we met and the solutions.

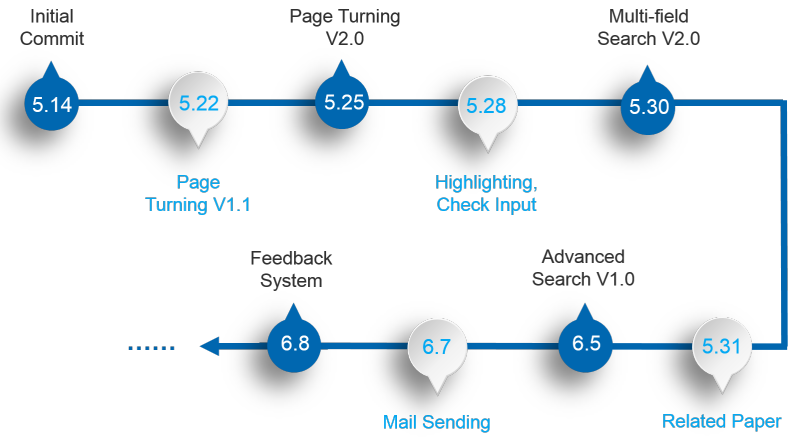
(2) Actually, I wrote the manual and uploaded my Lab 01 - 03 codes to unify the databases.

(3) I mainly focus on the back-end development.

(4) Of all my codes, I wanna highlight that approximately 85% are mainly created independently. For the remaining codes, modification is applied, with reference to some online blogs.

(5) Meanwhile, during my coding, I always remember to leave interfaces for my collaborators.

(6) As is vividly depicted in the timeline graph, I realized and improved different sections separately, in other words, term by term. Of course, my constant improvements are shown.



5 Keyword Highlighting

I adopted the “hl” settings of Solr. It is somehow very simple. Just echo the corresponding urls will do.

However, please notice that, for multivalued fields such as Authors_Name, only the highlighted part is returned. So I made judgements in such special cases.

Codes:

```
$url = "http://localhost:8983/solr/
    lab02/select?indent=on&q=Title:".$query."
    ^1+OR+Authors_Name:".$query."^0.7+OR+ConferenceName:
    ".$query."^0.5&start=".($page_limit*($page-1))."
    &rows=".$page_limit."&wt=json&hl=on&hl.fl=Title,Auth
ors_Name,ConferenceName&hl.simple.post=<%2Fb><%2Ffont>&h
l.simple.pre=<font%20color%3D%23FF0000><b>";
```

[End] — By Ziliang Guo 518030910273 —