

**NCCU Data Structure**  
“Beat Google” Final Project

# **Reciperian**

**Thursday Afternoon Group 5**

106306001 陳柏文 Vincent Chen

105302055 謝宛庭 Ele Hsieh

103303005 莊哲睿 Jeremy Chuang



## ◦ **Subject**

### **Subject**

Finding the most desired recipe by filtering out several criteria.

### **Websites for ranking**

All the website on google

### **Keywords for ranking**

## ◦ **System Specifications**

### **Users**

Any person who likes to type keywords to search for information

### **Purpose of using this system**

To give proper medical related information to users.

### **What is the function of the system, and how to use it?**

While users using this system to search, it will first get the result search after google, and the system will get the subpage and calculate the times of occurrence of the typed-in keywords, and then multiply it with the weights that users want it to be. By doing so, the system will identify relevance of the search result and the original keywords. By doing so, we will get the result after reranking and show them on the website.

## ◦ Motivation

As the students of NCCU, we are constantly puzzled about choosing what to eat for our meals. Regarding this huge dilemma, we have built this search engine and ought to get some inspiration for the majority of NCCU students since the best and the healthiest way of diet is making your own dishes.

With this program, we can get many similar recipes, and get the best ones by ranking the list with some weights.

## ◦ Score Formula Suggestion

### Webpage's Score

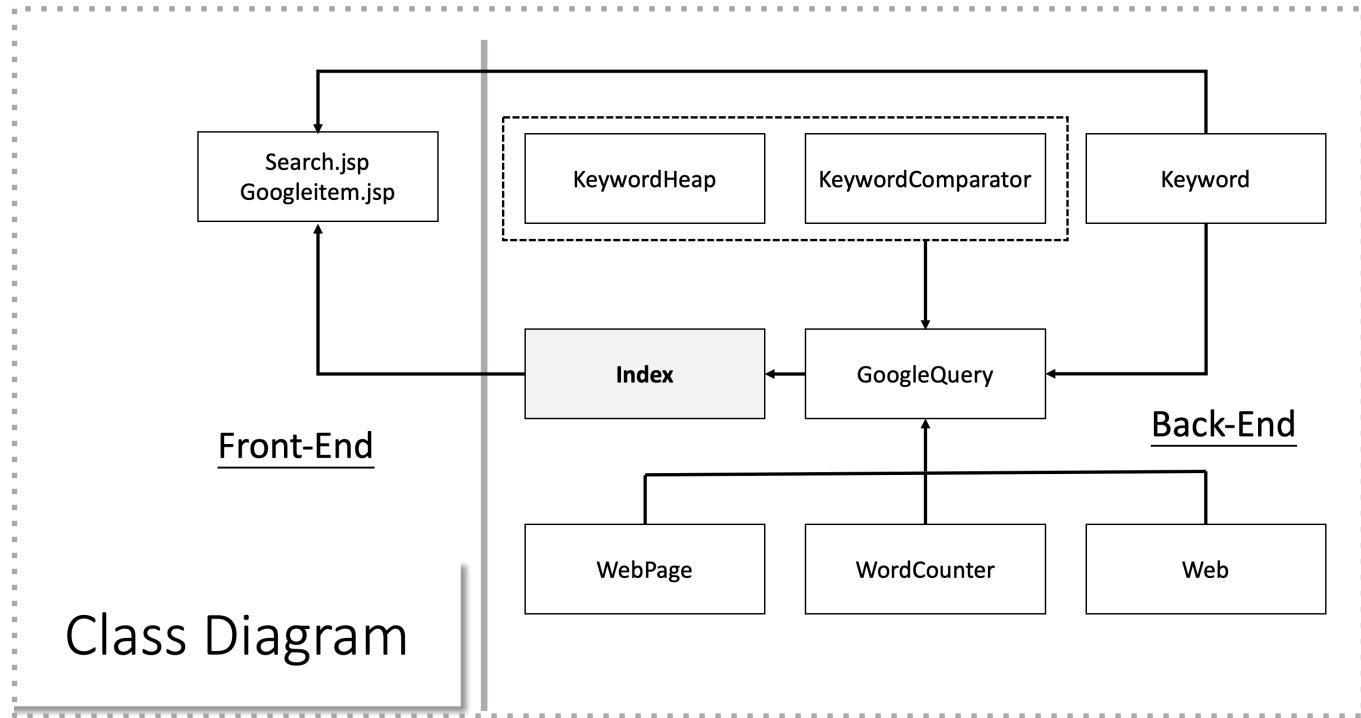
- = Webpage's score itself
- + 3 Children sub webpages' score
- + 3 Grandchildren sub webpages' score

$$\text{Score} = \frac{\text{The count of certain keyword appears in the content of a page's source code}}{\text{Keyword's Weight}}$$

input example: roasted chicken

| Score = score + X | For each contains  |
|-------------------|--|
| 10                | Recipe name, other ingredient  |
| 8                 | Baking Boiling Braising Browning Deep frying Fermentation<br>Grilling Pickling Roasting Smoking Steaming Stew Stir frying<br>Sugar panning                           |
| 2                 | Beef(and it's containers),pork(and it's containers),chicken(and it containers), fish(and it containers), shellfish(and it containers), vegetable(and it containers), |

# ◦ Class Diagrams



## ***Front-End***

Users can input the keyword (input class), after implementing Back-End procedures, then to show the output by output class.

## ***Back-End***

We use the input from the front-end and turn into keyword, later on calling Facade class to implement the process to run, moreover turn keywords into numbers meanwhile throwing into google to search and get back the return information, lastly use our system to take the wanted result.

| Class       | Description   |
|-------------|---|
| Web         | construct a object(web) to build a 3 field Hashmap in google<br>query               |
| Webpage     | construct a object(webpage) to set score  |
| WordCounter | create a method to catch original source code and count the keyword in the web site |

| Class                    | Description  |
|--------------------------|--|
| <b>Keyword</b>           | build the keyword list and get the specific keyword when it is called  |
| <b>KeywordHeap</b>       | Sort the Hashmap(web)  |
| <b>KeywordComparator</b> |  |
| <b>GoogleQuery</b>       | Catch the google search result web page's original source code and get the subpage. After doing so, we can rank the webpage with its subpage.              |
| <b>Index</b>             | Build the connection between main class and front END. Get the keyword to run the ranking, and sort the result. The last, put the result in the front end. |

## ◦ Accomplished Stages

- **Stage 1:** Get the google search result by the keyword (Google Query)
- **Stage 2:** Get the children webpages of the google search results (Google Query)
  - Based on code provided by TA, we have written the "getLinkScore" object to get all the children webpages and their grandchildren webpages out of the search results by Google.
- **Stage 3:** Build the keyword list which contains the similar keywords and weight them (Keyword, KeywordList)
  - We have built a list of food that have different weights, ranging from chicken, pork, beef to seafood and so on. We also allow users to input different keywords as well as the ingredients on their own.
- **Stage 4:** Rank and sort (Index, GoogleQuery, KeywordHeap, KeywordComparator)
  - Given the weights and the keywords, we can then store the url, title and weighted score into Hashmap.
- **Stage 5:** Show the result on website (Search.jsp, googleitem.jsp)
  - We have leveraged jsp to output our results onto html.

# ◦ Areas of Improvement

- Enlarge the keyword list
- Implement different weights according to keyword's html tag
  - e.g. if the keyword appears in between <h3> </h3> or similar html heading tags, we increase the weight of the keyword
- Search for the images in a webpage and fetch those images to display on our searched result

# ◦ Search Examples

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About   Recipes   Contact

## Search For Optimal Recipes

Recipe Name  Search

Ingredient

Cooking Techniques

Other Ingredient  Search



## Search For Optimal Recipes

[Delicious Stew Recipes - Kraft Recipes](#)  
<https://www.kraftrecipes.com/recipes/577/meal-recipes/.../stew>

[Slow-Cooked Panama Pork Stew - Campbell's](#)  
<https://www.campbells.com/.../recipes/slow-cooked-panama-pork-stew/>

[Mexican chicken stew - Recipes - Co-op](#)  
<https://www.coop.co.uk/recipes/mexican-chicken-stew>

[Classic Brunswick Stew With Pork and Chicken - The Spruce Eats](#)  
<https://www.thespruceeats.com/brunswick-stew-with-pork-and-chicken- 3052066>

[West African Chicken Stew Recipe | Taste of Home](#)  
<https://www.tasteofhome.com/recipes/west-african-chicken-stew/>

[Chicken Stew - Spend With Pennies](#)  
<https://www.spendwithpennies.com/chicken-stew/>

[The Best Green Chile Stew - Barefeet in the Kitchen](#)  
<https://barefeetinthekitchen.com/best-green-chile-stew-recipe/>

