



Let's Beat Google!



Foogole!

Your Foodie Google

Data Structures
Final Project Proposal
Thr 234 , Group11

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◎Topic :

I 、 Theme

"Foogle" is a search engine designed to help NCCU students to discover all kinds of delicious foods using your input keywords. By reordering and weighting search results, it recommends the best options for you, making it **Your Foodie Google!**

II 、 Inspiration

We believe that a good browser can make it easier to find restaurants that meet expectations, enjoy a pleasant dining experience, and make life better!

Whether hosting parents or friends from other areas, or recommending restaurants to friends, there' s always a need for search results that better align with student preferences and are more connected to the NCCU community.

That' s why **Foogle** was born!

III 、 Introduction

In light of NCCU students often hesitating during meal times due to indecision or unfamiliarity with nearby restaurants, we developed a food search engine tailored specifically for NCCU students. By referencing real online reviews, setting parameters, and reweighting search results, we' ve created a tool to help you find the perfect place to eat. Still unsure about what to eat later? We' ve crafted rankings that cater precisely to your needs.

Foogle was a search engine that better than google for those who are hungry but do not want to take risks!

V 、 Keywords for ranking_

```
WEIGHTS.put("平價", 3);  
WEIGHTS.put("學生", 3);  
WEIGHTS.put("聚餐", 4);  
WEIGHTS.put("政大", 4);
```

IV 、 Schedule

Project ideation (October to November) → Function design (11/14 to 11/21) → Proposal presentation (11/21) → Coding (11/21 to 12/23) → Testing/Improving features (12/23 to 12/25) → Project presentation (12/26)

◎System Specifications:

I 、Target Users

For NCCU students who want to find a restaurant that matches their mood and expectations, want to search for the most relevant restaurants using keywords.

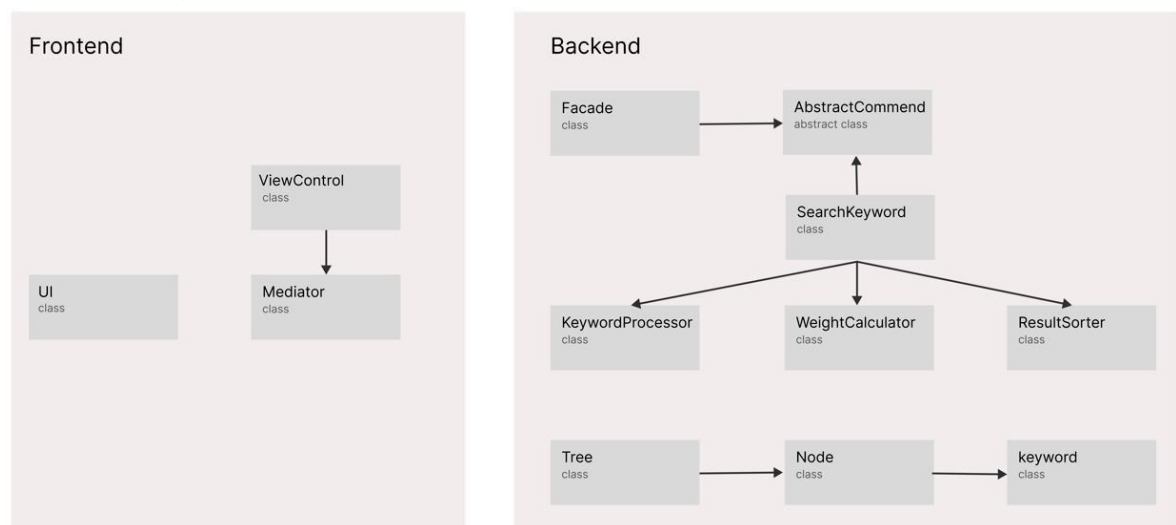
II 、Purpose

To better meet the needs of NCCU students, tailor the search results to align more closely with the user's keyword input and preferences.

III 、System features and how to use

- ✧ The system calculates the occurrence of specific keywords on websites and applies weighted scoring to rank the importance of these sites, reordering results to make the search more personalized.
- ✧ A fail-safe mechanism ensures that all search results are exclusively related to food, regardless of the keywords entered.
- ✧ Simply input a keyword into the webpage, and the system will rank and display relevant restaurant information for you.

V 、Class Diagram



Keyword class

Keyword class	
Fields	(double)count (String)name (double)Weight

Properties	Name Score
Methods	Keyword

Tree class

Tree class	
Fields	name root
Properties	Name IsEmpty
Methods	Add Append PostOrderTraverse PreOrderTraverse Rank SetCount ToList Tree

Node class

Node class	
Fields	ancestor children keyword name sum url

Properties	Ancestor Children IsExternal IsRoot Level Sum
Methods	BuildChildren BuildKeywords CalculateSum Node ToString

◎System Development Phases:

I 、Rank web pages based on keywords and their weights

This feature involves calculating scores based on predefined weights for selected keywords on web pages. Using Node's calculateSum() function, we compute the weighted sum of multiple keywords for each site, send the results to a Tree for ranking, and then return the results to be displayed on the front end.

II 、Read and include sublinks within the web page in the ranking calculation

This feature extends support to sublinks. While ranking the main webpage, sublinks are retrieved, and their weighted scores are added to the main webpage's total score. This aggregate score is then sorted using the Tree's ranking module before being displayed on the front end.

III 、Use keywords to search on Google or Yahoo and rank the returned links

This functionality allows users to enter custom keywords, which are passed to the backend for a Google search. The URLs from the search results are encoded with the keywords and their HTML content is fetched. The GetHTML() function parses the content, and keywords are scored and reranked, with the results displayed on the front end.

V 、Identify potentially useful keywords from pages returned by Google searches.

From the search pages, we analyze the related searches section of the HTML content using the HtmlHandler's DeriveRelativeKeywords() function to extract associated keywords. For instance, from a search for "NCCU food," keywords like "affordable restaurant" and "Muzha breakfast" are extracted for subsequent searches.

IV 、Webpage Development

⊙Homepage:

- Title/logo:FOOGLE,Your foodie google.
- Search box: Allows users to quickly search for specific foods, restaurants, or cuisines.
- Navigation menu: Includes home, favorites, recommendations, and map functions.

Main features:

- ✧ **Search Results in List Form:** Display each webpage title in a list format. Clicking on a title will redirect the user to the corresponding webpage.
- ✧ **"Others Also Searched" Section:** At the bottom of the page, include a list of related keywords that others have searched for. Clicking on these suggestions will initiate a search for the corresponding keyword.

Web Framework Integration:

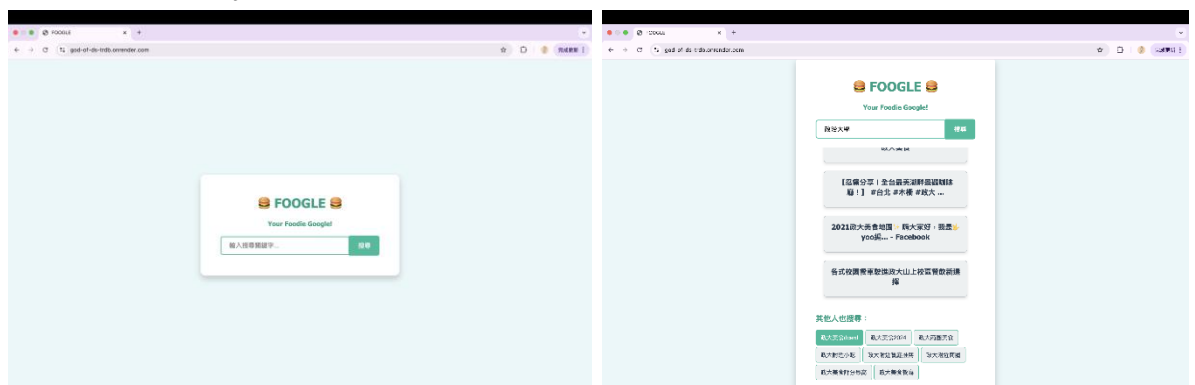
- ✧ **Render-Based Webpage:** The webpage is built using a rendering framework, ensuring dynamic and responsive content delivery. This allows the system to process user input, render relevant search results, and display them in real-time for a seamless user experience.
- ✧ **Website URL:** <https://god-of-ds-trdb.onrender.com/>

⊙Tasks for publish FOOGLE online:

- ✧ **Create the Search Engine Website:**
Website URL: <https://god-of-ds-trdb.onrender.com/>

- ✧ **Frontend Setup:**

Design the search page framework, including a search bar and clickable related search functionality.



✧ Backend Configuration:

Develop functionality to process user-provided keywords and fetch data specifically related to "food."

