ITCS414

CAFÉ search Engine.

By

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Introduction

Our search system is created for people who want to find a cool cafe nearby their location that suits their needs or people who want to know the cafe information, also created for cafe lovers, and to let people know the best cafe that they must go to.

Our target users will be People aged around 17-40 years old, Cafe shop lovers, High School students & University Students, people who want a nice café to take a picture for social media, and people who want a place outside their homes for working alone or with a friend, and Specialty coffee drinkers.

Problem(s) that you are trying to solve

Going to café has become a popular activity among teenagers and middle age for a period. There is a lot of interesting new café appearing in Bangkok and it is too many for customers to process. So, we create a café search system to solve this following problem.

- There is no system that helps customers easily explore new café.
- There is no specialist system for café to search by menu, keywords, location, etc.
- Customer may not find the most suitable café since there are a lot.

Existing relevant systems

There are other Existing relevant systems which are line man, wongnai, and food.trueid.net. Line Man (Line Man) is another application that Line has developed to solve the problem of people who are uncomfortable walking to buy food. because they don't have time to buy or don't want to sit and wait for cooking. But this application can also search for the café that users want to know their menu, place, price, contact, and location. Next wongnai, is another existing relevant system, Wongnai is a website and application that provides search services for Thai restaurants that contain menu, price, place, picture, review, contact, and location

information, and includes café in their search too. The last is food.trueid.net, they provide restaurant and café searches in their website too. The website shows the café result, description, location, contact, recommendation menu, and picture.

Implementation

i. Data collection, example documents, and data statistics

The data we research and collect from Thailand tripcanvas, bk.asia-city.com, café Facebook page and google. by we collected 108 café documents and key them in a JSON file which contain 7 fields, first (name) the name of the café, next is (openingtime) opening time of the café, next is the (rating) on this one we collect the rating from google search review and Facebook of that café review. Next is the (location) location of the café, Next is the (description) that describes the café e.g., recommend café menu, type, and theme of café, environment, ambient, and place. Next is the (phonenumber) field, and the last is the (pic) that we copy the image address from Google and paste into our JSON file. All of these are stored in the café index.


search_app.py × {} cafedemo.json ×

{} cafedemo.json


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{"name":"Behind the Bar Cafe","openingtime":"Mon-Fri 7:00am-3:30pm; Sat-Sun 7:30am-3:30pm","rating":"4","location":"1058/104 Paholyothin","descripti
{"name":"Eggtisan ","openingtime":"Open daily 7am-4pm","rating":"3","location":"106 Phahonyothin Soi 5, Bangkok, Thailand","description":"Run by the
{"name":"Katie Chocolaterie","openingtime":"Open daily 8am-6pm.","rating":"4","location":"1/5 Ari Soi 2","description":"Next to Ari's buzzing bakery
{"name":"Landhaus Bakery","openingtime":"Open Tue-Sun 7am-7pm","rating":"3","location":"18 Phahonyothin Soi 5","description":"This German-slash-Aust
{"name":"Oh Vacoda","openingtime":"Thu-Sun 9am-9pm; Mon 9am-9pm; Tue 9am-9pm","rating":"3","location":"1/1 Ari Samphan Soi 4","description":"This pi
{"name":"Qraft","openingtime":"Open daily 8am-10pm","rating":"2","location":"5/7 Ari Soi 1","description":"The brains behind zen-like teahouse Peace
{"name":"Yellow Lane Cafe","openingtime":"Open daily 9am-5pm","rating":"4","location":"92 Phahonyothin Soi 5","description":"Set in a renovated comp
{"name":"Blarney Stone","openingtime":"Open daily 8am-midnight","rating":"4","location":"21, 1 Sukhumvit 4 Alley","description":"If you're on Soi 4
{"name":"Gigi Cafe","openingtime":"Open daily 8am-11pm.","rating":"4","location":"28 Soi Sukhumvit 19","description":"You know their bites on Sukhum
{"name":"Hemingway Bangkok","openingtime":"Open daily 9am-midnight","rating":"5","location":"Soi Sukhumvit 11","description":"It's a bar with good w
{"name":"Iwane Goes Nature","openingtime":"Open daily 7:30am-11:30pm","rating":"3","location":"14 Sukhumvit Soi 23","description":"Open since 2011,
{"name":"Veganerie","openingtime":"Open daily 9:30am-10pm","rating":"4","location":"171 Soi Sukhumvit 11","description":"One of our favorite online
{"name":"Chutie is Baking ","openingtime":"Open Tue-Sun 10am-6pm","rating":"4","location":"1107/2, Charoenkrung Rd.","description":"Set inside a ren
{"name":"Craftsman Roastery","openingtime":"Open daily 7:30am-6pm ","rating":"3","location":"Bumrungnukulkit Printing House. Bamrungmuang Rd.","desc
{"name":"Kokopan","openingtime":"Open Mon-Fri 8am-5pm, Sat-Sun 9am-5pm","rating":"4","location":"118 Soi Chula 8, Room, 923 A","description":"There'
{"name":"On Lok Yun ","openingtime":"Open daily 6am-2:30pm","rating":"3","location":"72 Charoen Krung Rd","description":"For those wanting something
{"name":"Punjab Sweet","openingtime":"Open daily 8:30am-6pm","rating":"3","location":"Chakkraphat Rd","description":"Tired of our typical breakfasts
{"name":"Rue De Mansri ","openingtime":"Open Tue-Sun 8am-4:30pm","rating":"3","location":"417 Bamrung Mueang Rd.","description":"A 130-year-old form
{"name":"BKK Bagel ","openingtime":"Open daily 7am-5pm","rating":"4","location":"518 Maneeya Center, 3 Phloenchit Rd.","description":"Situated right
{"name":"Brooklyn Baker","openingtime":"Open Thursday-Monday 9am-5pm.","rating":"5","location":"Polo 3 Alley,","description":"A great place to escap
{"name":"Sarnies Roastery ","openingtime":"Open daily 7am-10pm. ","rating":"5","location":"34 1 Soi Ton Son","description":"Sarnies has been rolling
{"name":"The Flour Shoppe ","openingtime":"Open daily 8am-10pm.","rating":"2","location":"Central Chidlom Foodhall, 1027 Ploenchit Rd.","description
{"name":"Cafe Tartine","openingtime":"Open Mon-Fri 7am-5pm; Sat-Sun 8am-5pm","rating":"3","location":"65 2 Wireless Rd.","description":"Cafe Tartine
{"name":"Samantao","openingtime":"Open daily 7am-5pm","rating":"3","location":"Nai Lert Park Heritage Home, Wireless Rd","description":"Soi Somkid's
{"name":"Sip & Co","openingtime":"Open daily 6am-7pm","rating":"4","location":"6565 Soi Langsuan","description":"The next time you visit the upscale
{"name":"Siri House (Luka)","openingtime":"Open daily 8am-5pm","rating":"4","location":"Siri House, 2 Soi Somkid","description":"Situated on Soi Som
{"name":"Tempered","openingtime":"Open daily 8am-6pm","rating":"3","location":"59 Prim Raumrudee Soi Ruamrudee 2","description":"Named after the tec
{"name":"The Coffee Academics","openingtime":"Open daily 7am-10pm.","rating":"5","location":"Velaa Sindhorn Village Langsuan, 87 Soi Langsuan","desc
{"name":"Aroon Cafe","openingtime":"Open Mon-Fri 7:30am-5:30pm; Sat-Sun 8:30am-6:30pm","rating":"3","location":"Sukhumvit Rd. (top of Sukhumvit Soi
{"name":"Brainwake","openingtime":"Open daily 7am-6pm","rating":"4","location":"27/1 Sukhumvit Soi 33","description":"If you're not drawn to the lea
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ii. Tools and software

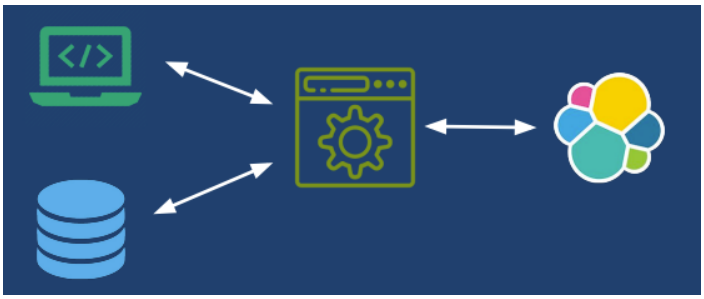
In this project, we use FLASK, Elasticsearch, Kibana, and Python for the search engine part. In the front-end part, we use HTML, CSS, and in the data part, we use JSON to write the café data. to work on it. And the programs that we use to handle all of the tasks are Visual Studio Code and notepad++.

iii. System diagram

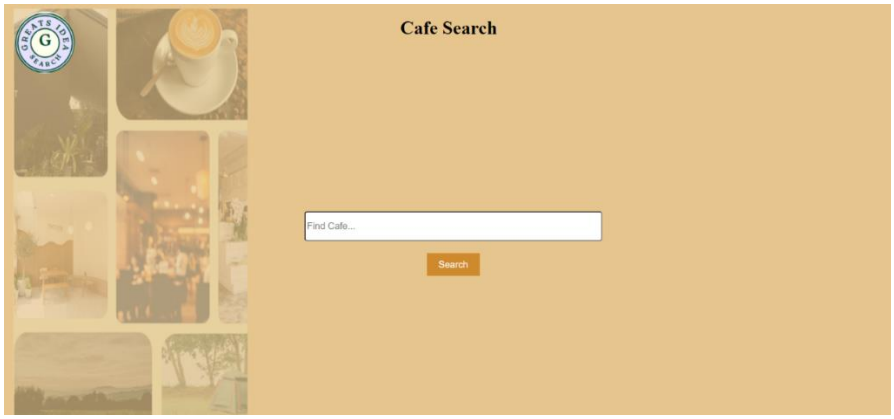
Document -> Analyzer -> Storage

Elasticsearch server -> Elasticsearch client(python) -> flask(python) +CSS

Fuzzy match query = Match Query -> Fuzziness -> Inverted Index

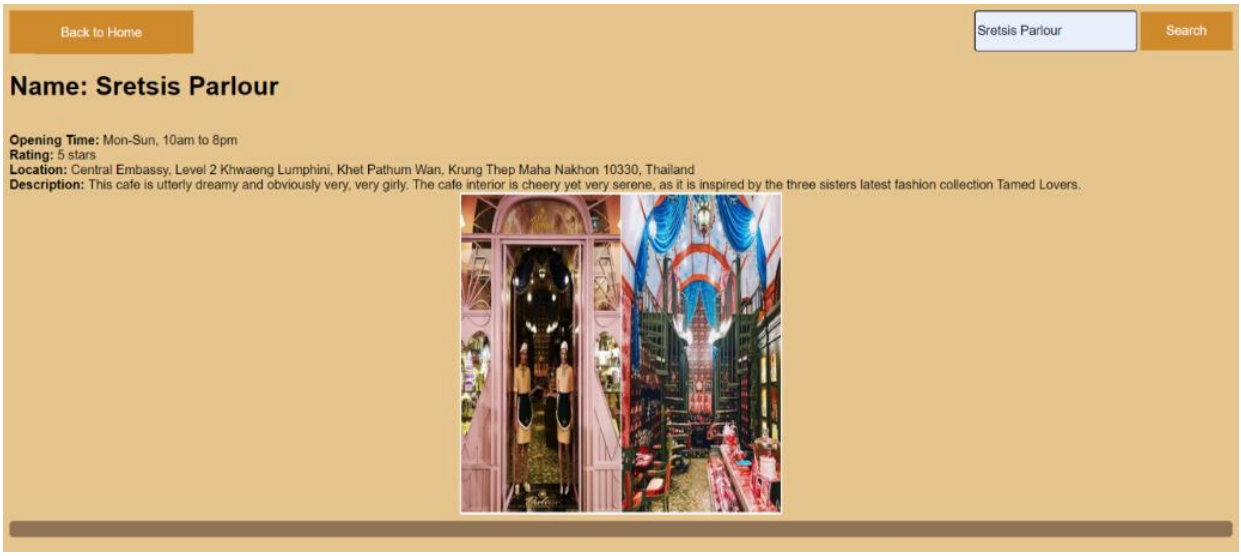


iv. Snapshots of the system



This is our home page, we user first gets into our search system, and the system will take

users to this home page first. Next when the user types the name of the café “Sretsis Parlour” Our system will display the café result which contains the Name of the café, opening time, rating, Location, Description, and picture.



v. Example step-by-step search sessions that highlight the following functionality:

1. One word query

In this scenario, we search for the name of the café in the search box. And our search engine output one output which is the name of the cafe that matches the input query as fig [1].

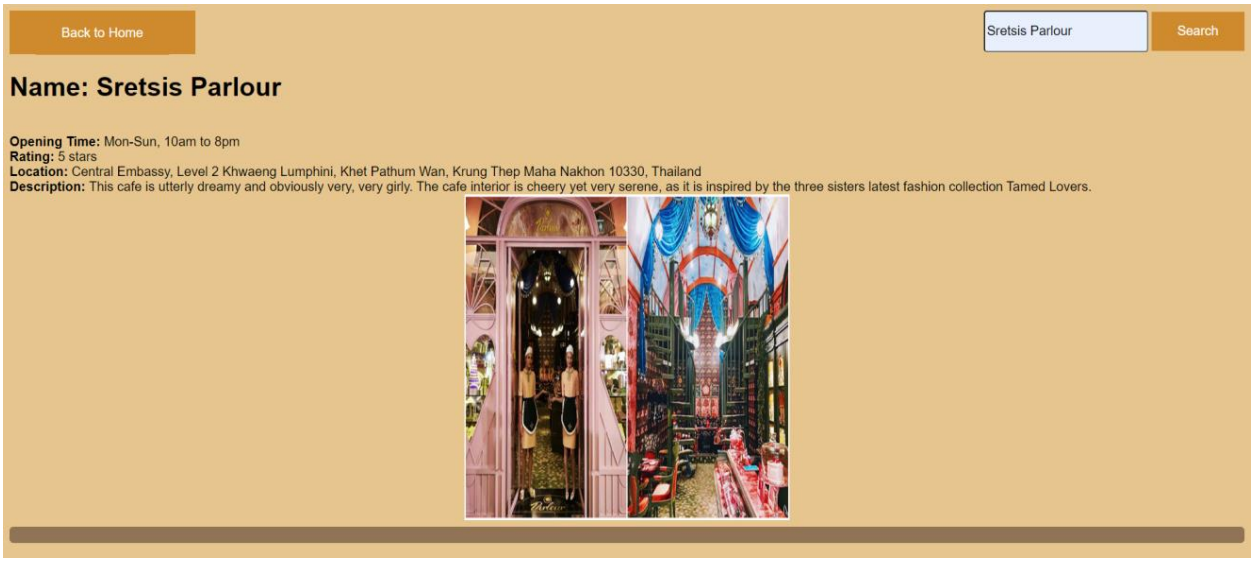


fig [1]

2. Multiple word query & 3. Partial match

In this scenario, we want to search for a café near the river. Have some coffee or food. And our search engine output 3 cafe that matches the river, coffee, and food query, The first output is the “ViVi the Coffee Place” café that contain river and food in the café description, coffee in their café name and description menu. And also, the food as Fig [2]

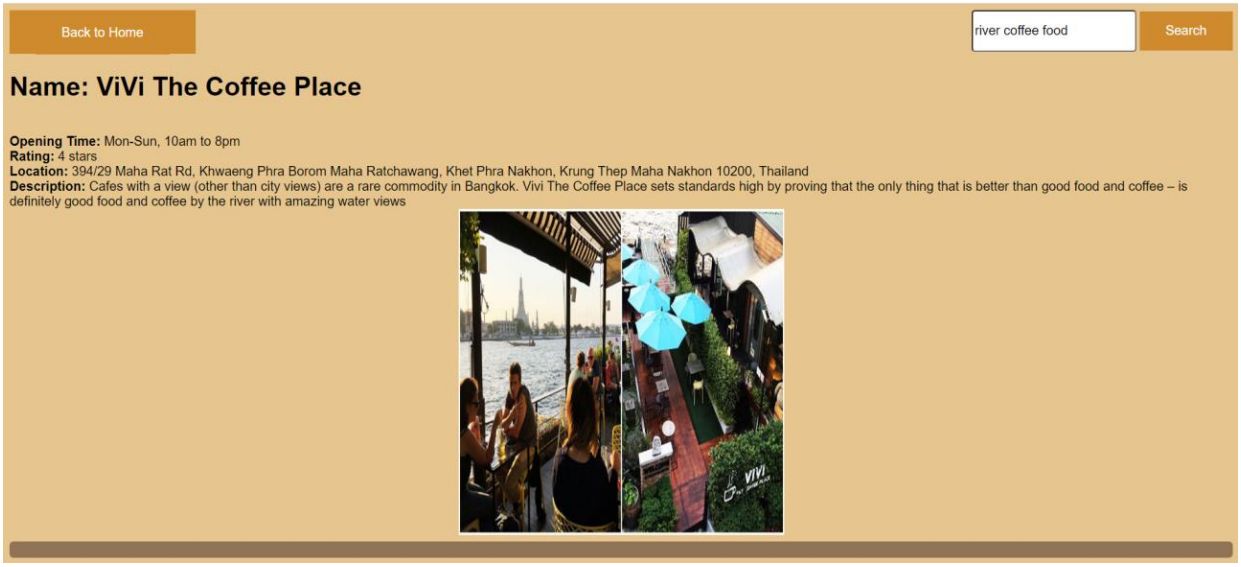


Fig [2]

The second output is the “On the River Café” which contains river and coffee in the café description, river in their café name as Fig [3].

Fig [3]

The last output is the “Sarnies Roastery” which contains river and coffee in the café description as Fig [4].

Fig [4]

4. Ranking

We use Elasticsearch TF-IDF default ranking for Scoring the relevant score of documents for particular queries in our café search engine.

Discussion

i. Limitations of your system

The limitations of our system have 2 main limitations, first is the café data in Bangkok as we have to research the café and prepare the data manually into JSON file. for this reason, our system didn't contain all of the cafés in Bangkok. and our system cannot sort the result.

ii. Technical difficulties, challenges, and lessons learned

The technical difficulties and challenges are the preparation of the café data from the internet because there is no API for Cafe in Bangkok so, we have to prepare the data manually to JSON file which is tedious work and takes time, and the part in Elasticsearch that we use fuzzy manually for some word. And the lessons that we learned are how to implement a search engine by using Elasticsearch and Kibana, Indexing the document, basic managing documents, basic mapping, controlling queries, and using CSS with Flask.

iii. Opportunities for future improvements

Our future café search engine improvements will add 2 main features and café data improvements. The 2 main features are the menu and price, and location. For the menu and price feature, we will add the menu and price of every café in the real-time update, so users can know the real price and menu of that day before they go to the café. The next feature is the location, we may add a location map that links with google map API that can let our users know the recommended café near their location in real-time. Finally, for the data improvement, we will add all café in Bangkok by manually, scraping data from some web pages and add on more pic more picture detail of the café.

Conclusion

Our café search is to this is the basic first time that we do the search engine however in the future we may develop it further. We considered about our instructor advise that café should have some feature that could track the café events and offers. We were thinking of having a link in our search engine that can link user to the café web page, or we could make the page to have those features manually even that will be tiring.