

# FOODECISIVE

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# PROBLEM

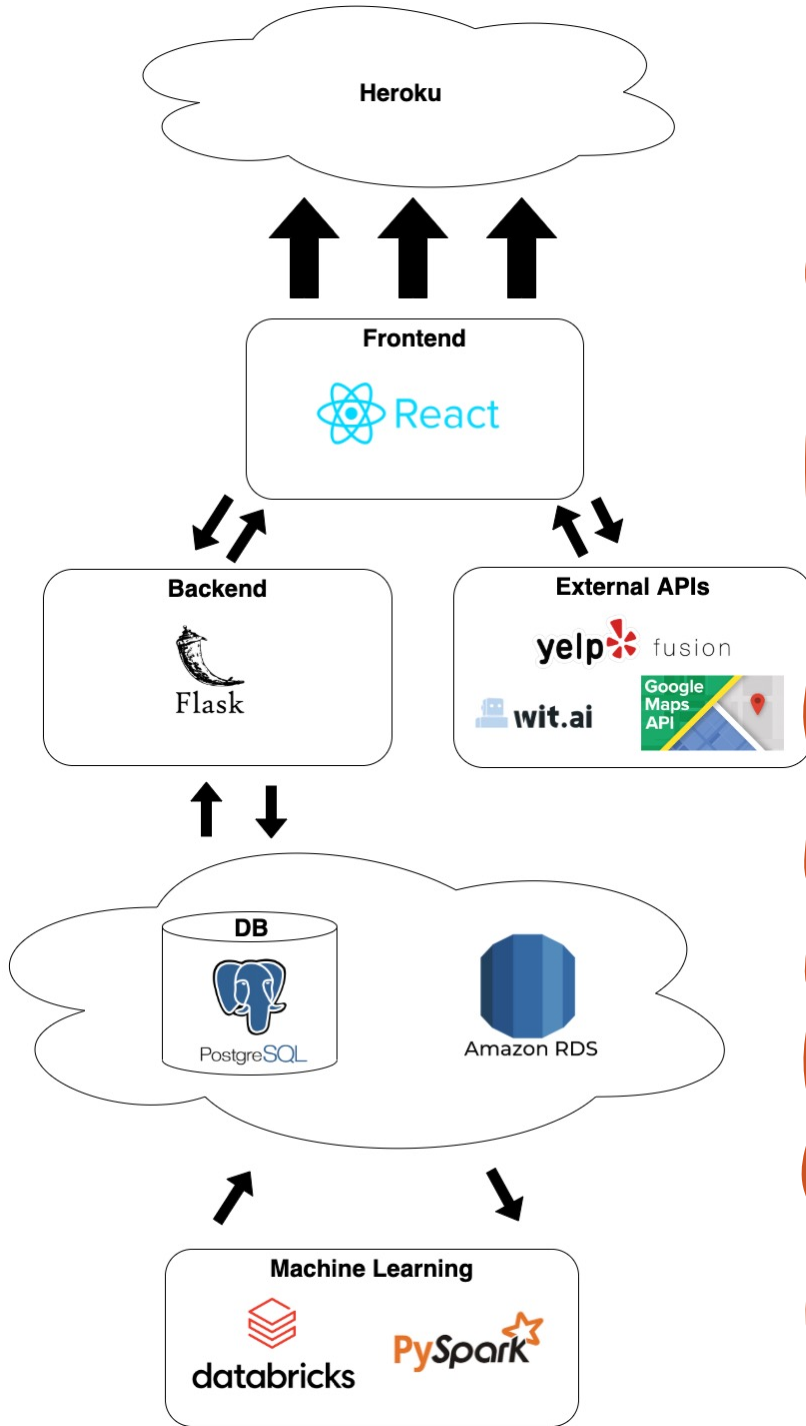
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- Choice Overload - when people have trouble deciding when faced with many options.
- According to the US Bureau of Labor Statistics, the time people spend on eating and drinking, and food preparation and cleanups are around an average of two hours per day.
- Average American couple spends 132 hours a year deciding what to eat.

# OBJECTIVE

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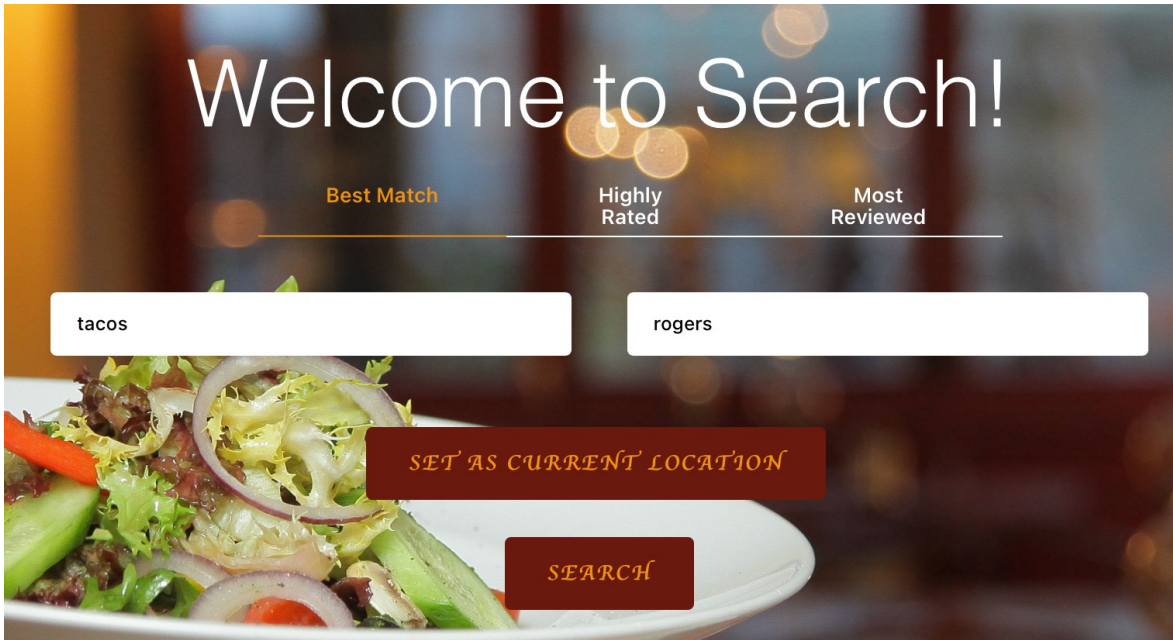
- Effectively provide *list of restaurants* to users based on their preferences
  - Improved recommender system to consider additional preferences
- Give users the option to *view and save multiple restaurants*
  - Requires authentication
- *Interactive* website
  - Jessie the chatbot



# ARCHITECTURE

# SEARCH

Yelp Fusion API



Welcome to Search!

Best Match      Highly Rated      Most Reviewed

tacos      rogers

SET AS CURRENT LOCATION

SEARCH



### King Burrito and

903 S 8th St  
Rogers, AR 72756

RATE ☆



### Torchys Tacos

4950 W Pauline Whitaker Pkwy  
Rogers, AR 72758

RATE ☆



### Trickdilly

2500 SW 14th St  
Bentonville, AR 72712

RATE ☆



### El Charro

701 N Thompson St  
Springdale, AR 72764

RATE ☆



### Fuzzy's Taco Shop

4204 S Jb Hunt Dr  
Rogers, AR 72758

RATE ☆



### Tortilleria La Po

400 S 8th St  
Rogers, AR 72756

RATE ☆



### Chuy's

4889 W Pauline Whitaker Pkwy  
Rogers, AR 72758

RATE ☆



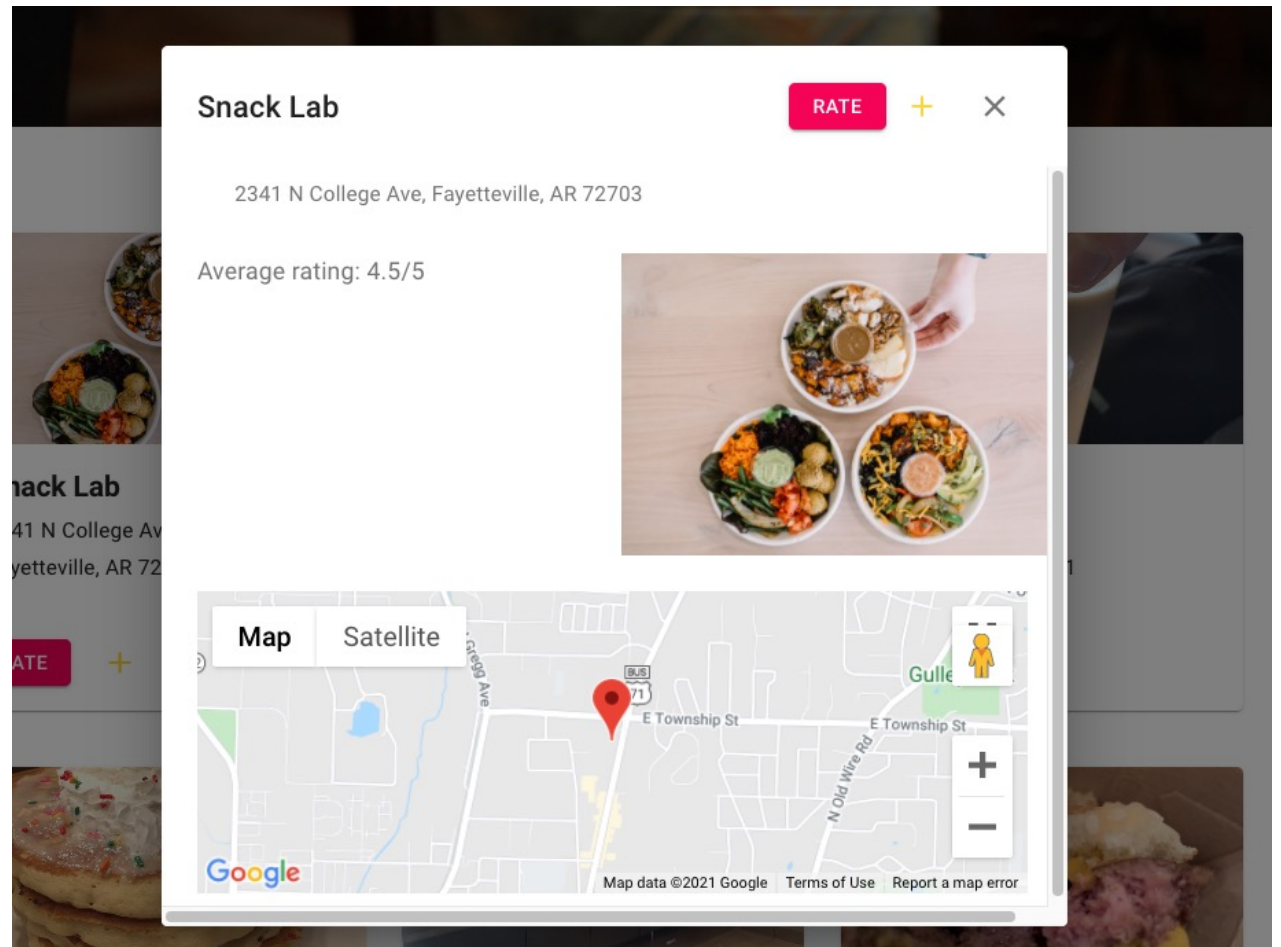
### Mr. Taco Loco

130 W Emma Ave  
Springdale, AR 72764

RATE ☆

# RESTAURANTS DETAIL

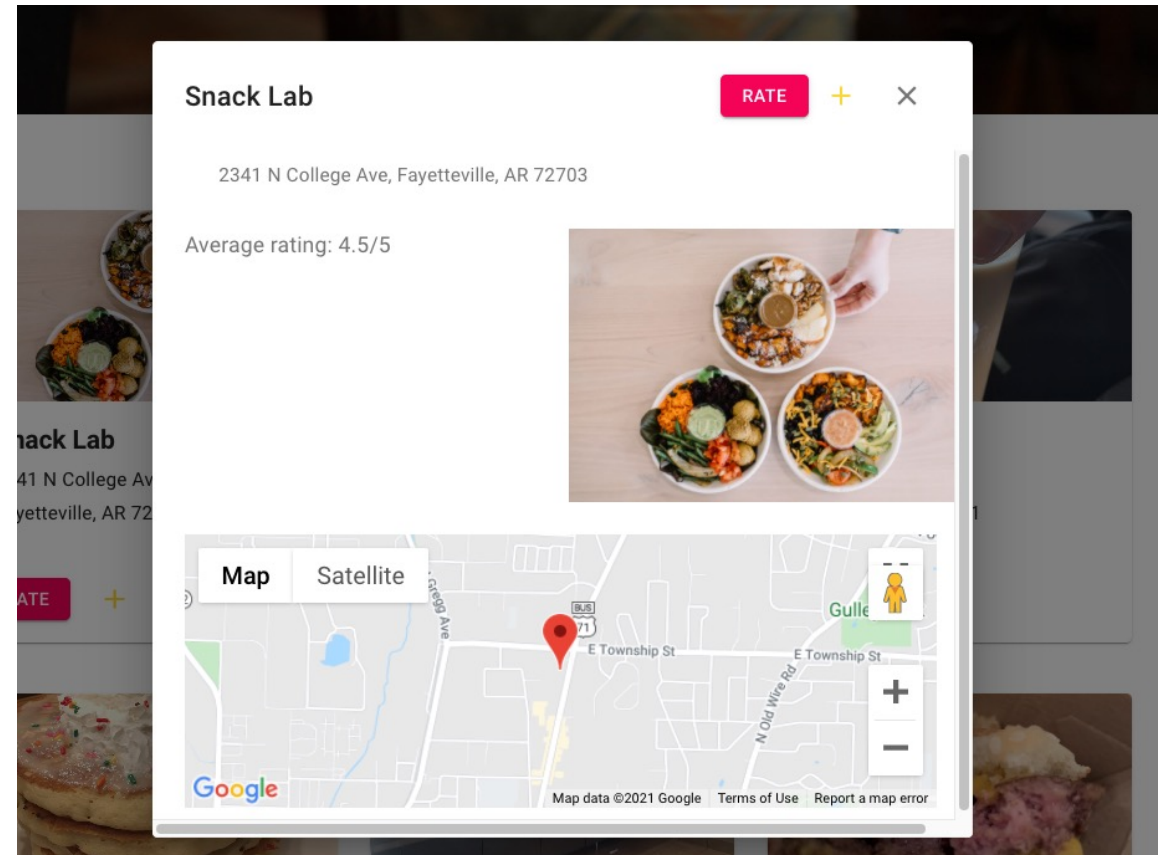
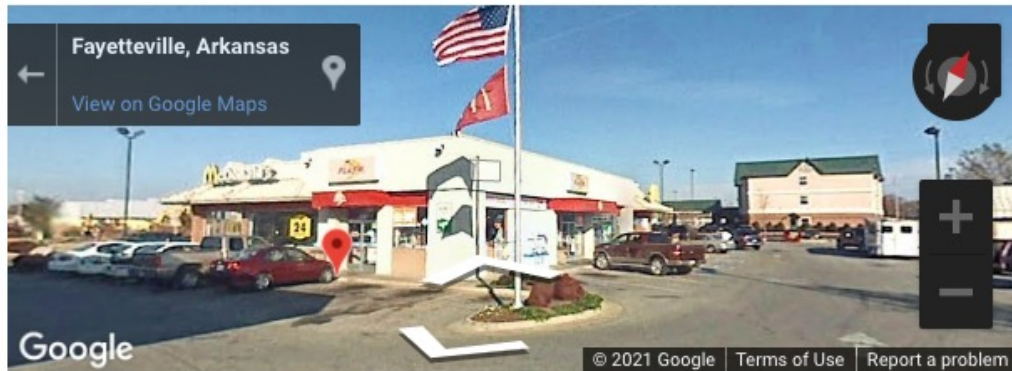
- Restaurant's name
- Address
- Customer's rating
- Rate function
- Add this restaurant to your favorites





# GOOGLE MAPS API

- Google maps JavaScript API
- Display restaurant's location on a map
- Show street views



# FAVORITES



## Tacos 4 Life

4195 Pinnacle Hills Pkwy  
Rogers, AR 72758

RATE ☆



## Taqueria Real Jac

1713 S 8th St  
Rogers, AR 72756

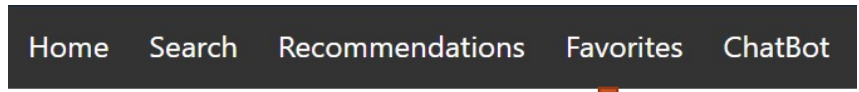
RATE ☆



## El Senor De Los T

1612 S 8th St  
Rogers, AR 72756

RATE ☆




## Tacos 4 Life

4195 Pinnacle Hills Pkwy  
Rogers, AR 72758


RATE ☆



# RATINGS & REVIEW



**Tacos 4 Life**  
4195 Pinnacle Hills Pkwy  
Rogers, AR 72758

RATE 



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**Tacos 4 Life** ×


4195 Pinnacle Hills Pkwy, Rogers, AR 72758

Rate

1  2  3  4  5

Review

SUBMIT



# RECOMMENDATIONS

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- Collaborative Filtering using Distributive Computing
- Apache Spark + Databricks
- Alternating Least Squares (ALS)
- Commit recommendations to DB

## Your generated Recommendations!



### Lou Malnati's Pizzeria

17787 North Scottsdale Rd  
Scottsdale, AZ 85255

RATE



### Taqueria El Compadre

5010 W McDowell Rd  
Phoenix, AZ 85035

RATE



### Tortas El Chavo

1101 N Mesa Dr  
Mesa, AZ 85201

RATE



# CHATBOT

- Conversational chatbot to boost interactivity
- Wit AI (<https://wit.ai/>)
  - Example query: "Show me the most reviewed restaurants in Fayetteville, AR"
    - Intent: search
    - Search term: restaurants
    - SortBy: most reviewed
    - Location: Fayetteville, AR

The screenshot displays the FooDecisive website interface. At the top, a dark navigation bar contains the logo and links for Home, Search, Recommendations, Favorites, and Chatbot. A chatbot window is open, featuring a character named Jessie. The chatbot's input field shows the query "Show me restaurants in Fayetteville, AR". The response from the chatbot is "I searched everywhere I could, here's restaurants in Fayetteville, AR." Below the chatbot, a search results grid is visible, showing two restaurant listings: "The Farmer's Tabl" and "Sassy's Red House". Each listing includes a photo of food, the restaurant name, address, and a "RATE" button with a star icon.

**FooDecisive** Home Search Recommendations Favorites Chatbot

**Jessie**

Show me restaurants in Fayetteville, AR

I searched everywhere I could, here's restaurants in Fayetteville, AR.

**The Farmer's Tabl**  
1079 S School Ave  
Fayetteville, AR 72701

**Sassy's Red House**  
708 N College Ave  
Fayetteville, AR 72701

RATE ☆

RATE ☆

Send a message...

# PROFILE

## Profile



admin3

### Review History

Mama Z's Cafe



"Good!"



El Italiano Street Food



"Interesting!"



Marco's Pizza



"Great food"



Taco Bell



"Good!"



Tasks	Dates
1. Research recommender systems and design sketches of UI and architecture (All members)	11/14-12/7
2. Exploratory Data Analysis of Yelp Dataset in Jupyter Notebook (Aneesh)	12/7-1/11
3. Establish database schema and connectivity to backend (Aneesh)	1/11-1/25
4. Develop Search functionality using Yelp Fusion API and frontend view (Huy)	1/25-2/8
5. Conduct feature engineering on Yelp data (Aneesh)	2/8-2/22
6. Implement login and registration frontend pages and routing (Adam)	2/8-2/22
7. Implement token-based user authentication for login/registration in backend (Aneesh)	2/8-2/22
8. Implement restaurant detail popup in frontend view (Huy)	2/8-2/22
9. Implement rating/review form in frontend (Adam)	2/22-3/8
10. Develop backend endpoint for ratings and reviews commit to DB (Aneesh)	2/22-3/8

Tasks	Dates
11. Embed Google Maps API into restaurant detail popup (Tay)	3/8-3/22
12. Develop Favorite functionality frontend view and backend endpoint (Huy)	3/8-3/22
13. Implement Favorites page in frontend to view list of favorites (Huy and Zhi)	3/22-4/5
14. Utilize HPC GPU to finely preprocess Yelp data and filter data based on requirements (Aneesh and Adam)	3/22-4/5
15. Develop Recommendation System using Apache Spark (Aneesh)	3/22-4/5
16. Implement conversation chatbot frontend UI (Adam and Aneesh)	4/5-4/19
17. Implement conversational chatbot functionality and develop intents using wit.ai and incorporating responses (Adam)	4/5-4/19
18. Develop profile page with history of user reviews/ratings (Huy)	4/5-4/19
19. Design homepage of application (Tay and Zhi)	4/5-4/19
20. Polish up aesthetic look throughout application and add transitions as needed. (All members)	4/5-4/19

# DELIVERABLES



Design Document: Explains what our code **DOES**...



UI drawings and flowcharts



Database schema and initial data



React and Flask code



Collaborative Filtering Recommender System code (Python **SPARK**)



Final Report



# DEMO

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<https://polar-chamber-56004.herokuapp.com/>

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# FUTURE WORK

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Train our model using location specific data

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Productionize our model to run in one-hour intervals using AWS and Databricks Cron jobs

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Add more search filters

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Adding more features to chatbot for an enhanced experience

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Improve user privacy