CSCI-201: Principles of Software Development

Spring 2022

PA2: SalEats

Concepts Covered:

- HTML/CSS
- Databases/JDBC/SQL
- Java Servlets

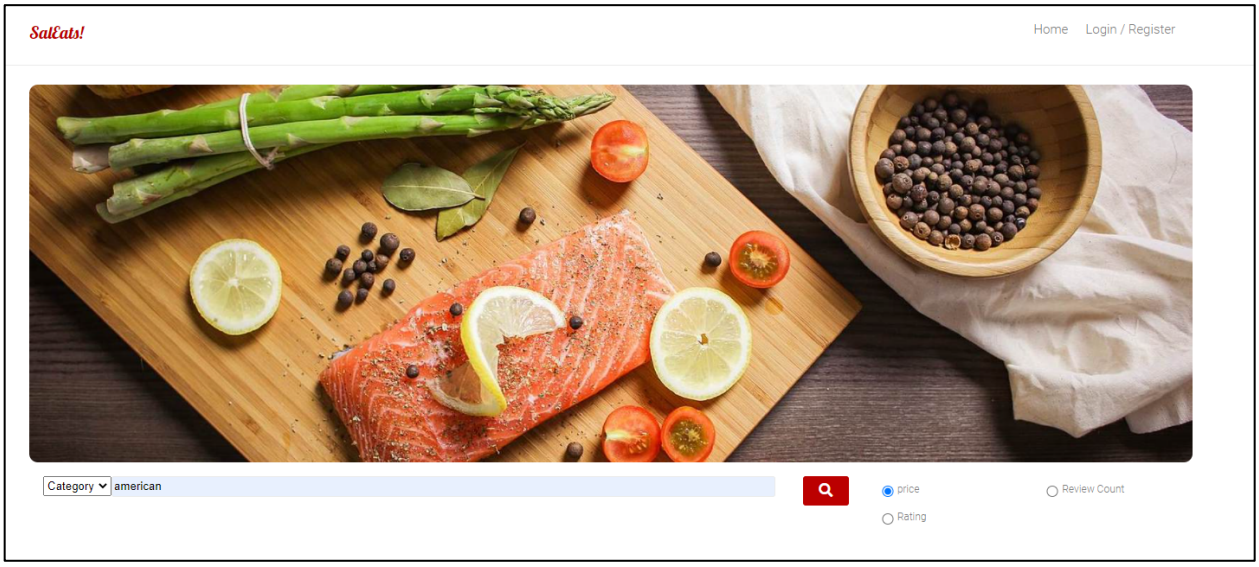
Introduction:

In this assignment, you will be making a web application that will allow users to search for restaurants, and display details of these restaurants. You'll need to use Google API, as well as implement a database to keep track of user information. The rest of this document includes mockups of the web pages. Your web pages should look reasonably similar in style to the examples shown in the figures below. Try to get them as close as possible but don't fret over pixel-perfect accuracy. The user won't notice an image being a few pixels to the left, but they WILL notice the search not working or errors popping up on their screen!

Home Page:

This will be your landing page. Users can use the header at the top to navigate back to the Home Page (this one so it would just refresh) or to Login / Register. The details of Login / Register are provided in the Login/Register Page section. The SalEats logo should also redirect the user back to the home page.

Users will be shown this screen with a page navbar at the top and an aesthetic banner in the main content section with search functionality below it. There is a text field to search either by restaurant name or category that can be selected through the dropdown near text field. There are also sort options that can be used (Review Count, Rating, and Price). The details of the search are outlined in the "Search Page" section.



Home Page

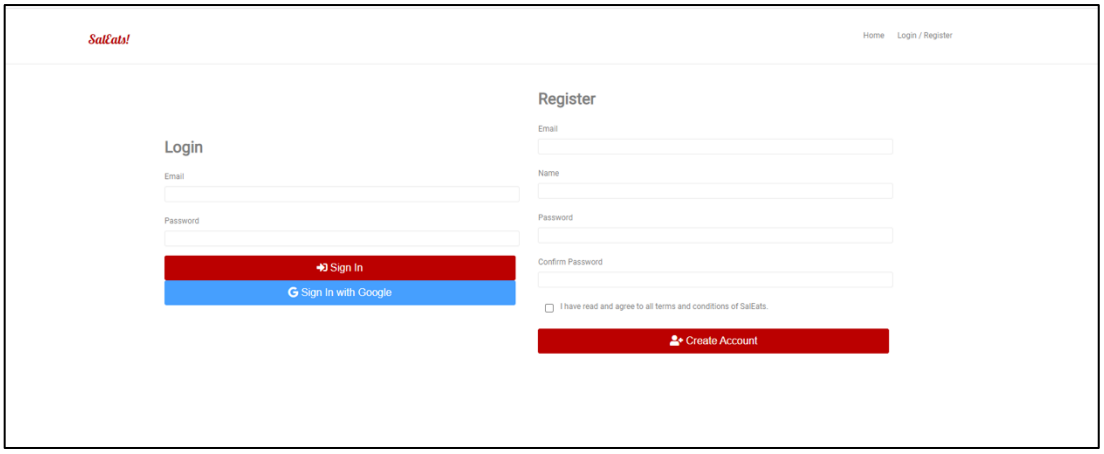
Login / Register Page:

Your application should allow the user to create an account and also allow users to sign in with their Google account. In other words, users will have two different login options, as shown below. Users can choose to login either with their credentials or with Google Sign-in. You can learn more about the Google Sign-in API here: https://developers.google.com/identity/sign-in/web/sign-in.

Here are some possible errors to check for when creating the Login / Sign Up page:

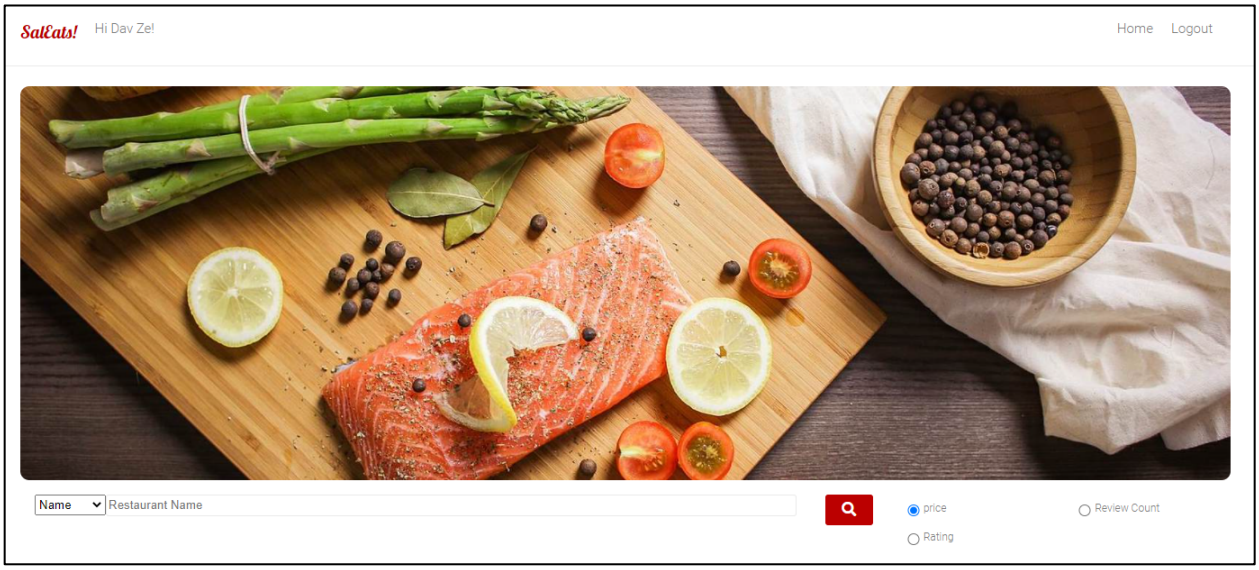
- Data is missing
- Data is malformed (i.e., Email does not contain an @ and ends in .com, .net, .edu, etc.)
    - No need to go crazy on the email validation beyond the above. Check this link to see how complicated perfect validation would be!
- There is already an account associated with the email
- When registering user password and confirm password do not match.
- This list is not comprehensive so if you find anything else that could break the functionality, it is your job to handle it

When signing up, the user will enter their information in the required fields **(be sure to display an appropriate error message if there are missing or improperly formatted fields)**. Upon a successful sign up, the user should automatically be logged and redirected back to the Home Page. For this assignment, the username and password strings can be stored directly in the database without any security measures. Create a table in mysql to store the user information.

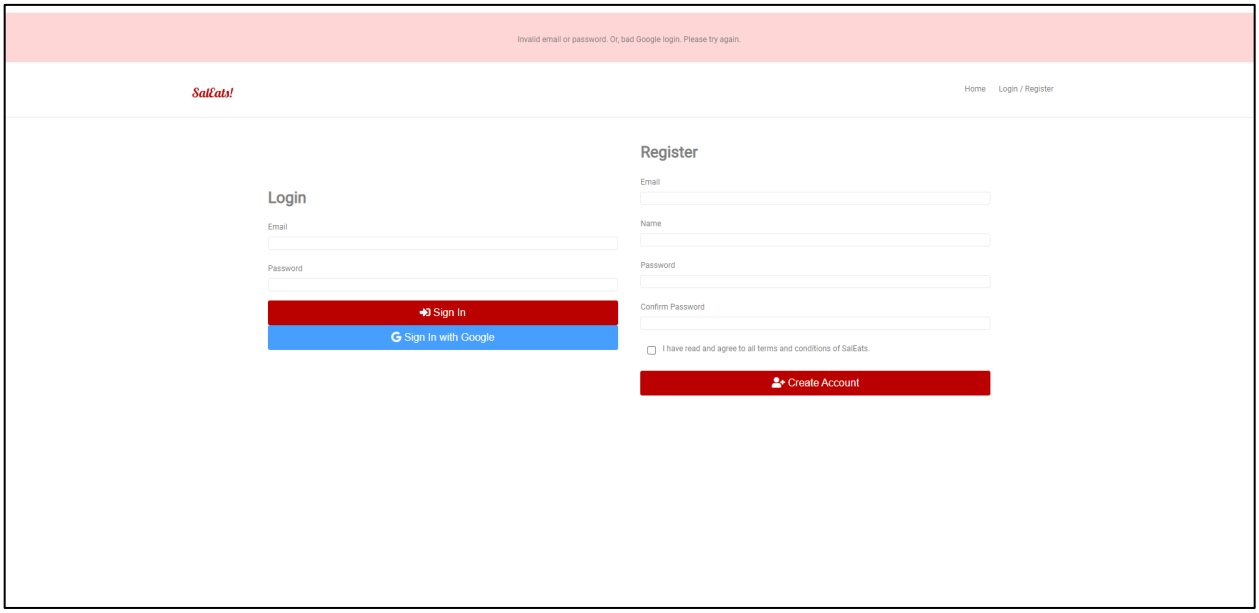


Login/Register Page

After successful login, the user should have "Hi, {username}" in the Home Page near the SalEats logo in the left corner. This should apply to all the pages in this assignment.



If there's error in login, it should be displayed like this:



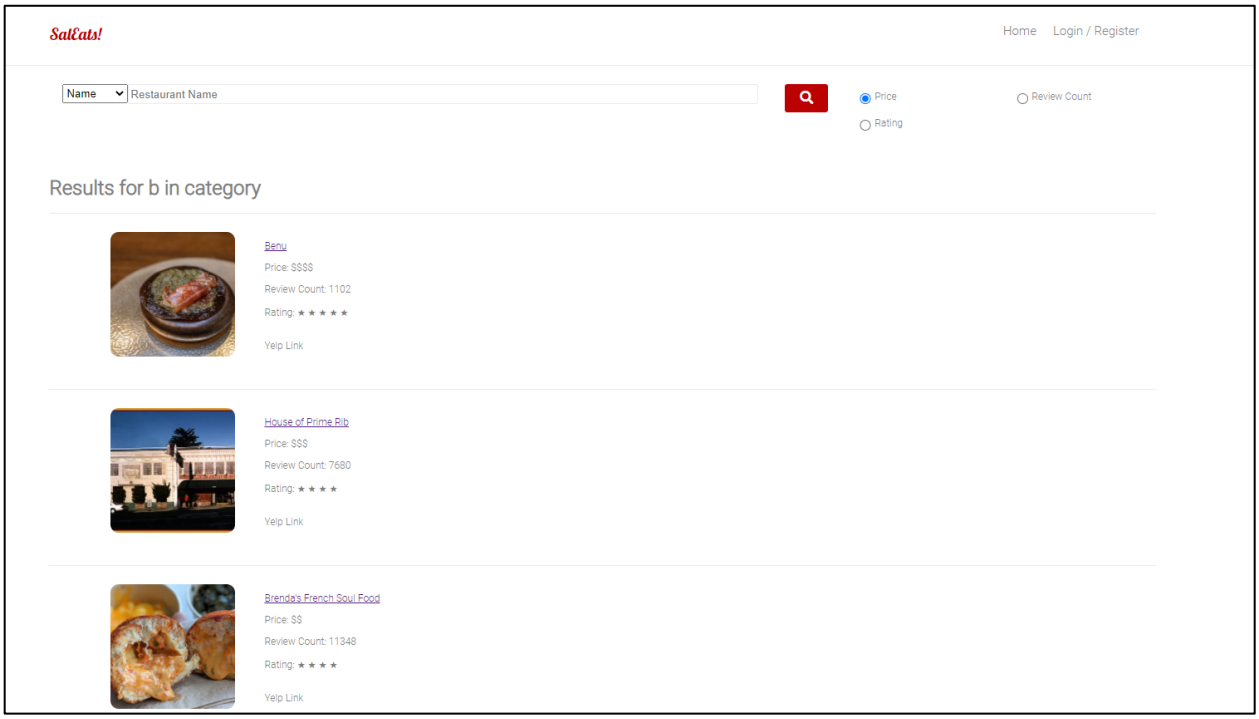
Search Page:

There is a text field to search either by restaurant name or category that can be selected through the dropdown near text field. There are also sort options that can be used (Review Count, Rating, and Price).

Users can run a search by entering a restaurant name or category, selecting the sorting order of the search results (using the radio buttons), and then clicking on the magnifying glass icon (the search button). A successful search leads the user to the Search Results Page, as shown below.

The user first arrives at this page after a successful query from the Home Page. Using the information from the provided restaurant_data.json, your program should display the best results based on the search query and sort option. Each row of information contains an image related to the restaurant, the restaurant name, price, review count, star rating and a link to their Yelp page.

Users can use the top menu bar to navigate between the Home Page by clicking on “Home,” and the Login / Register Page by clicking on “Login / Register.” If the user is already logged in, the menu bar should instead contain “Home,” and “Logout.” This menu bar should persist between all pages of this application.
Clicking on the logo (SalEats!) should redirect the user to the Home Page as well. This should apply to all the pages in this assignment.

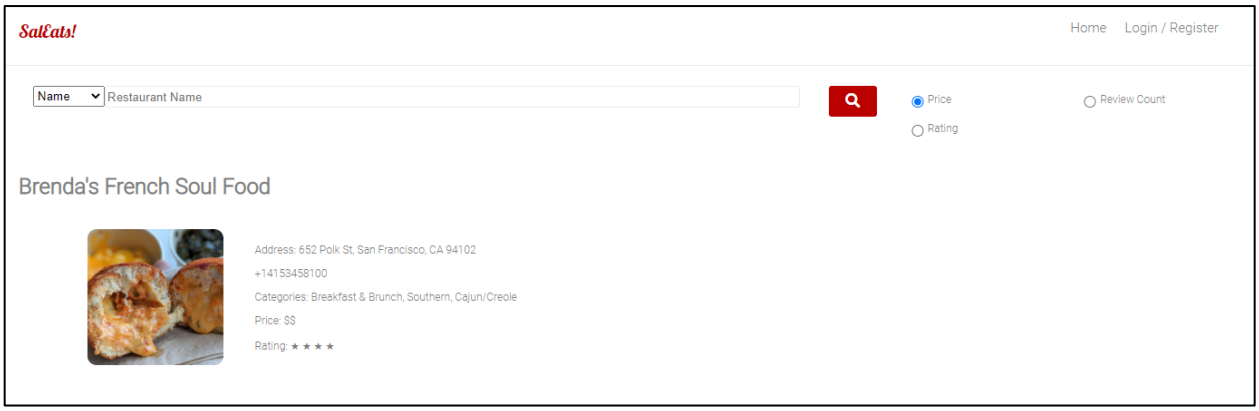


Search Page

Details Page:

This page contains additional details about the restaurant that was selected from the Search Results Page by clicking on the restaurant name. This page should contain the restaurant name, address, phone number, same image from the Search Results Page, list of categories, price (in dollar signs), as well as star rating.

To display the image in Search and Display page, directly use url from the data in image tag of html, no need to download it.

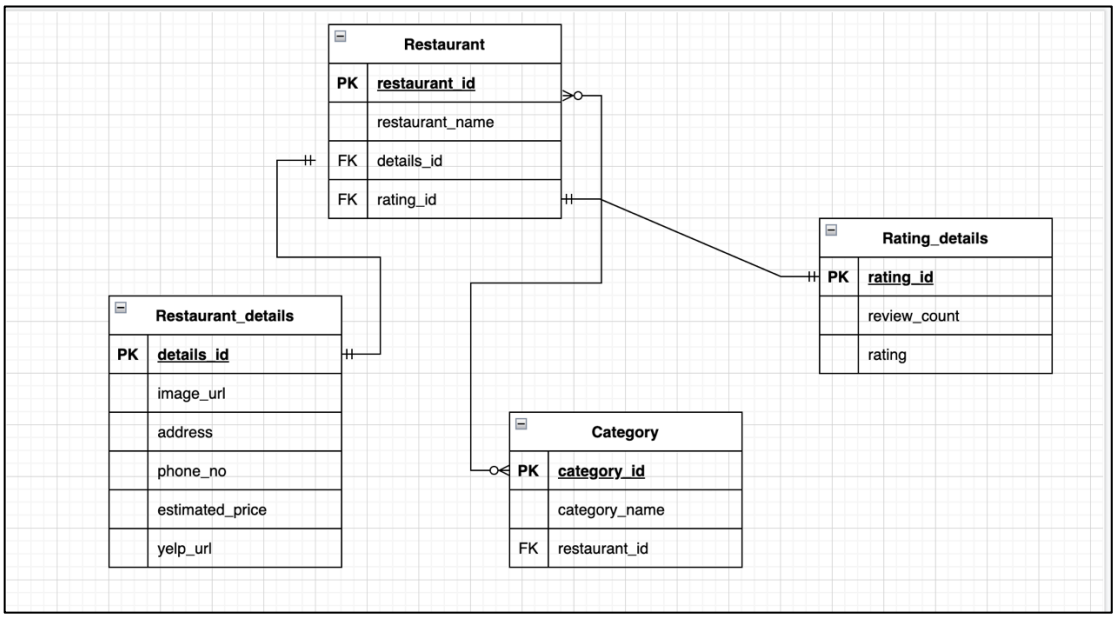


Details Page

JSON to Database:

Use restaurant_data.json data to populate your database of restaurants with all the details required to display for Search as well as Details page. To read the json file, store the file name as constant in you code and use a file reader to read the data. Use GSON to parse the read data like how you used in PA1. Then this data should be stored in the respective tables you created in mysql database using JDBC connector.
Use id, “name" as restaurant name, "image_url" for restaurant image, "rating" for star rating, "display_address" from "location" json for address, "title" from "categories" for food categories, "price" for restaurant price in dollar, "phone" for restaurant phone, "url" for YELP API, "review_count " for restaurant review count from JSON file.

You Database schema for restaurant data should like this:



Create a separate table to store the User details.

Additional Implementation Notes:

- Please use Tomcat 9, SQL 8 and Java 14 for this assignment!
- Use username as 'root' and password as 'root' of sql for the assignment. If there's discrepancy, it will be difficult to grade and there will be risk of losing marks.
- The font used for the SalEats logo is called lobster and can be found here. There is a convenient css link on that page as well but you'll need to do some research on how to use

custom fonts with css.

- The home page image (banner.jpeg) is provided.
- The JSON file should best be parsed from your back-end code, and I believe you'll get errors if you don't. You all have knowledge on how to parse JSON by this point. It should be fairly simple using GSON.
- Use JSP's to take your object set and dynamically server a web page.
- Learn more about JSTL here: https://www.tutorialspoint.com/jsp/jsp_standard_tag_library.htm
- Small code snippet example:

// In servlet

```
ArrayList<Restaurant> restaurants = // your restaurants;

request.setAttribute("data", restaurants);
```

// Pass data to jsp for it to fill out with

```
  RequestDispatcher dispatcher =
getServletContext().getRequestDispatcher("/your-results-page.jsp");

dispatcher.forward(request, response);
```

// In JSP (Just one method of many)

```
// Parse using JSTL tags:
 <c:forEach var="restaurant" items="${data}">

// Your code here
```