Milestone #2 - Design Document
COMP SCI 4HC3
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Application Name: Campus Eats

Description:
A web platform that allows undergraduate students to rate and discuss their favourite foods and restaurants on and 5 km outside of a campus. Campus Eats will also provide information about the cost associated with the food and people's reviews of it. Campus Eats will help students find the food that they want more conveniently and reliably.

Task Hierarchy:
1. Search a restaurant
    a. Filter search by rating
    b. Filter search by price
    c. Filter search by location
    d. Filter search by dietary restrictions
    e. Sort the search results from highest to lowest rating
    f. Sort the search results from lowest to highest price
    g. Sort the search results from closest to farthest location
2. Rate a restaurant
    a. Enter a restaurant name
    b. Enter a username
    c. Assign a price range on a given scale
    d. Assign a rating on a given scale
    e. Include optional descriptions of the rating
    f. Upload a picture of a meal
    g. Upload a picture of a restaurant
3. View the restaurant rating
    a. Search a restaurant by its name
    b. Browse search results
    c. Select the restaurant
    d. Browse reviews and ratings of the selected restaurant
4. Share a review on Social Media
    a. Select a review to share
    b. Choose the social media platform
    c. Generate a sharable link
    d. Share the link
5. Search nearby restaurant in the Map
    a. Specify initial location to start exploring on map
    b. Interact with the map to locate the areas of interest
    c. Browse nearby restaurants on campus

       d. Select a restaurant to view the restaurant details
6. Create an account
       a. Create username and password
       b. Provide personal information
       c. Specify school/location information
       d. Specify favourite foods
       e. Specify weekly/daily budget
7. Modify existing account
       a. Edit username and password
       b. Edit personal information
       c. Edit school/location information
       d. Edit favourite foods
       e. Edit weekly/daily budget
8. View account history
       a. Browse prior ratings
       b. Browse prior foods you favourited
       c. Browse prior restaurants you favourited
       d. Browse prior reviews you wrote
9. File a complaint
       a. Specify the type of complaint
       b. Specify the user
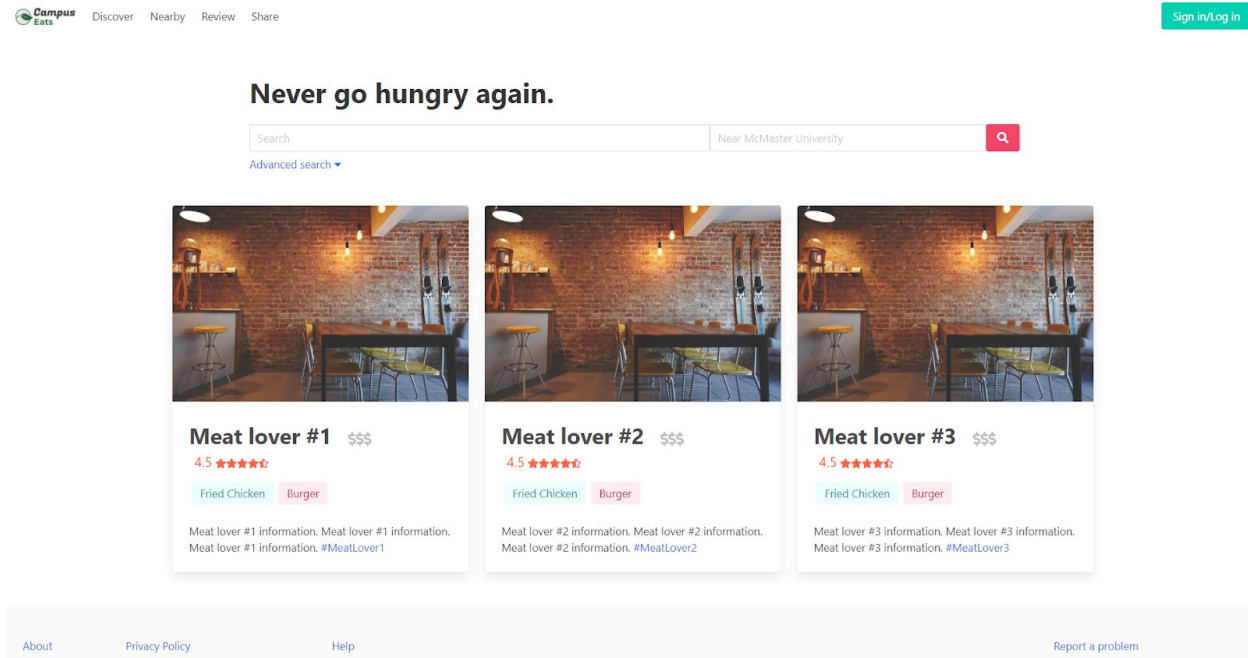   c. Explain why there is a problem with that user

Mockups:
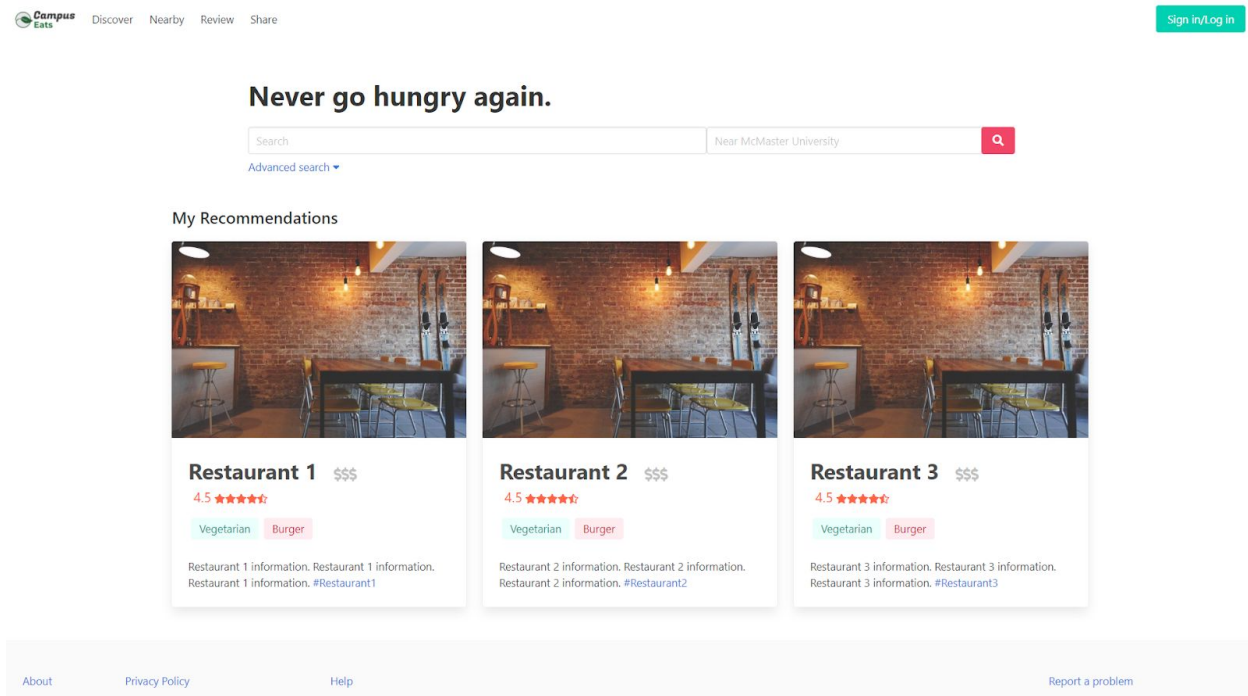
Mockup of main page (Darren)

This is the main page that the user will land on when they first come onto the Campus Eats website. In the header, it contains the logo, discover option, nearby option, review option, and share option, and sign in/login. Underneath that, the user has the ability to search for restaurants in a specific location. If they want to be more specific, there are 'advanced options' the user can click on. There are recommendations for users to check out if they haven't searched anything yet. Each recommendation has a restaurant name, price range, a rating, restaurant tags, and a description of the restaurant. In the footer, there are hyperlinks to the about page, privacy page, help page, and 'report a problem' page.

Mockup of search results (Darren)

This is the main page that the user will land on when they first come onto the Campus Eats website. In the header, it contains the logo, discover option, nearby option, review option, and share option, and sign in/log in. Underneath that, the user has the ability to search for restaurants in a specific location. If they want to be more specific, there are 'advanced options' the user can click on. In this specific case, the user searched for 'meat'. Each result has a restaurant name, price range, a rating, restaurant tags, and a description of the restaurant. In the footer, there are hyperlinks to the about page, privacy page, help page, and 'report a problem' page.

Mockup of details page of a restaurant (Sophia Ji Who Choi)

- The top half of the page

- The bottom half of the page

Photos

John Doe @johndoe

Oct 9, 2020

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin ornare magna eros, eu pellentesque tortor vestibulum ut. Maecenas non massa sem. Etiam finibus odio quis feugiat facilisis.

Lee Smith @leeSmith

Oct 9, 2020

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin ornare magna eros, eu pellentesque tortor vestibulum ut. Maecenas non massa sem. Etiam finibus odio quis feugiat facilisis.

Reviews

John Doe @johndoe 31m

★★★★☆

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin ornare magna eros, eu pellentesque tortor vestibulum ut. Maecenas non massa sem. Etiam finibus odio quis feugiat facilisis.

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Nearby Restaurants

Teriyaki Express $$$ 4.5 ★★★★☆ (14)

Vegetarian   Burger   Sandwiches   All Day Breakfast

Teriyaki Express $$$ 4.5 ★★★★☆ (14)

Vegetarian   Burger   Sandwiches   All Day Breakfast

- Description
  - This is the details page of a restaurant. Once the user selects the restaurant they would like to learn more about, this page will open up. The page includes the name, rating, number of reviews, price range, keywords, contact, menu, location, photos, and reviews of the restaurant. The user can browse other photos and reviews of the restaurant if they click the 'See More' button. Also, if the user would like to share their experience, they can write a review about the restaurant by clicking the 'WRITE A REVIEW' button. Users can see nearby restaurants at the bottom of the page.
  - In addition to this, if the user wants to search for another restaurant, they can use the search bar located on the navigation bar.
  - Finally, if the user finds a review or photo inappropriate, they can report them by clicking the flag icon. Further, users can share a review by clicking on the share icon.

Mockup of expanded ratings and reviews (Sophia Ji Who Choi)

- The top half of the page

Campus Eats   Discover   Nearby   Review   Share   Search Restaurant 🔍   Sign in/Log in

Creation X

Write a review

Username	Your Username
Price Range	$ $$ $$$
Experience	★★★★⯪
Upload Photo	⬆ Choose a file (Optional)
Comment	Optional

☐ I agree to the terms and conditions

Post Review

More Reviews

John Doe @johndoe ★★★★⯪   Oct 9, 2020

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin ornare magna eros, eu pellentesque tortor vestibulum ut. Maecenas non massa sem. Etiam finibus odio quis feugiat facilisis.

Lee Smith @leeSmith ★★★★⯪   Oct 9, 2020

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin ornare magna eros, eu pellentesque tortor vestibulum ut. Maecenas non massa sem. Etiam finibus odio quis feugiat facilisis.

- The bottom half of the page
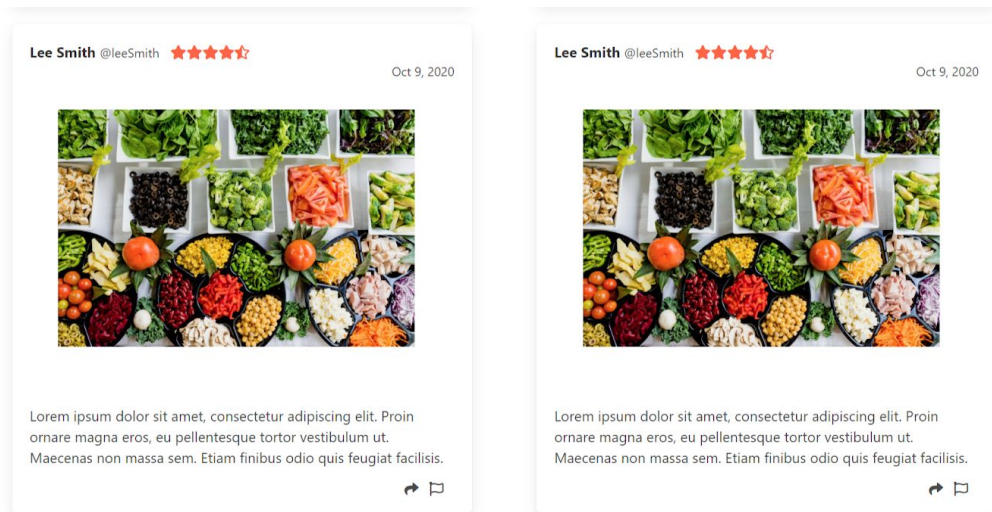
Review More Restaurants
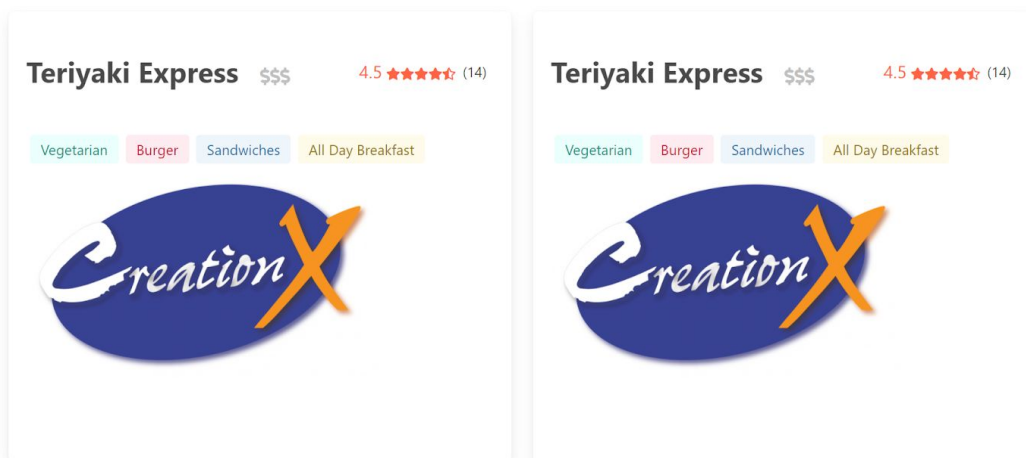
- Description
  - This is the review page of a restaurant. Once the user selects the restaurant they would like to review, this page will open up. The page includes a review form where the user can specify their username, price range and experience on the given scale, upload photos, and comment on their experience. The star rating selector uses star icons filled in with a color according to the user's cursor position. Once they fill out the form and agree to the terms and conditions by clicking the checkbox, they can click the 'Post Review' button to submit the review.
  - In addition to this, users can browse more reviews of the restaurant. If users want to review more restaurants, they can find more restaurants near the bottom of the page.

Mockup of expanded map view (Sujan)
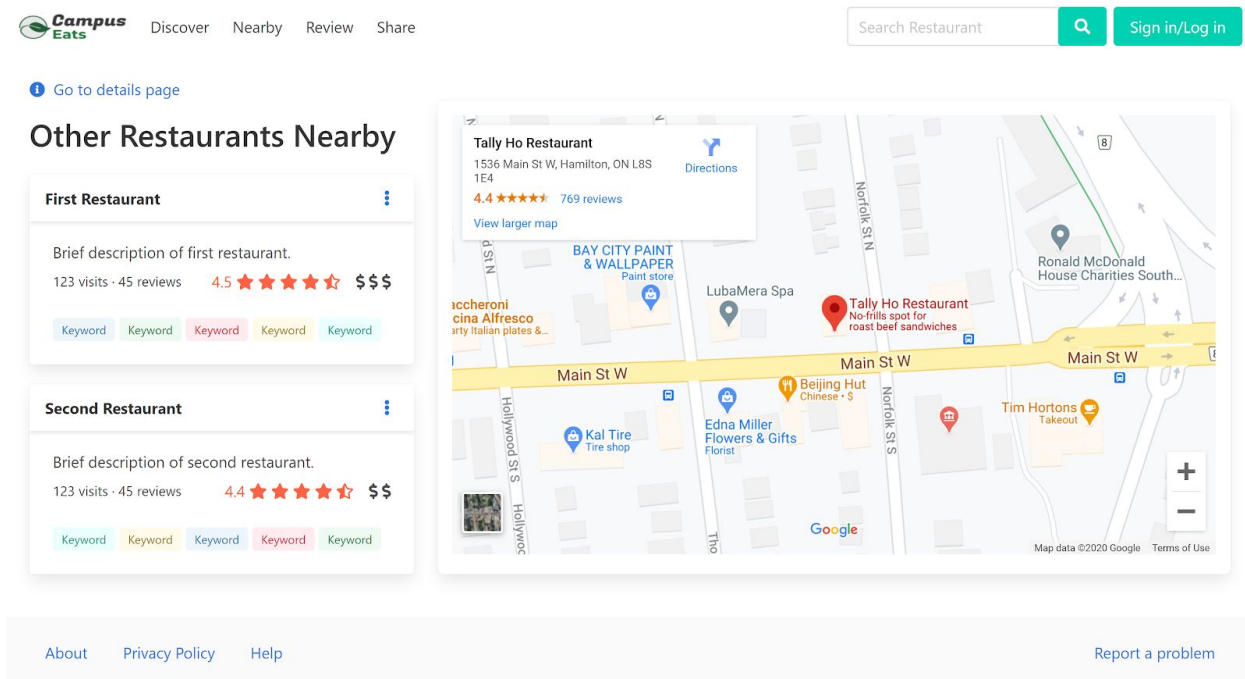
This page shows an interactive map view of restaurants and other buildings/streets nearby to the current restaurant being viewed, along with cards on the left hand side to display quick information about those nearby restaurants that would also be appearing on the map. The main map is an embedded Google map directed at the restaurant most recently searched or viewed from elsewhere within the application, where markers can be placed at the locations of each restaurant in view. The cards displayed on the left follow a similar style to the cards on the main and details pages but display information in a more compact manner. There is additionally a link to go to the details page of the selected restaurant on the interactive map to view more details. This page can be accessed by clicking on the map thumbnail on the details page to lead directly to a map view of that specific restaurant, or by clicking the Nearby tab on the top bar to explore restaurants near the current or most recently detected location of the user.

Mockup of new account questionnaire (Sujan)

New Account Questionnaire

← Previous Page   Next Page →

Personal and Demographic Information

Full Name ∗

John Doe

Age

Gender

Type   or select an option

Ethnicity

Type or select an option

Home and School Location

Home Address

123 Somewhere   Street

Home Postal Code

A1B 2C3

Home City

Home Province

Home Country

School Address ∗

123 Somewhere   Street

School Postal Code ∗

A1B 2C3

School City ∗

School Province ∗

School Country ∗

Preferences and Spending on Food

Preferences ∗

Chinese, savoury,   mild, etc.

Dietary Restrictions ∗

Type or select an option

Weekly Budget ($) ∗

1.23

Frequency of Spending on Food ∗

time(s) per   week ⌄

This page presents the user with a brief questionnaire to collect relevant information when registering a new account, which falls within a short sequence of pages that the user would have to go through. Preceding this would be a simple page with validation to specify a new username and password, and following this would be a page for the user to verify their information entered and finalize registration of their new account. The user is asked for their full name and optional demographic information, requires an address for their school and optionally lets the user specify their home address (may be useful if near school address for pickup, etc.). The questionnaire then requires the user to specify some initial preference keywords and dietary restrictions, as well as their amount and frequency of money spent on food.

Design Discussion:

Rationale behind header design (Darren)

The header of Campus Eats is at the top of the page and contains the logo, discover tab, nearby tab, review tab, share tab, a search bar (not for main.html and search.html), and the sign in/login button. When clicked on the logo on the left side, the user will be redirected to the homepage. This design is similar to the web interfaces provided by many other popular websites such as Facebook. For mobile devices, a hamburger button will exist on the left side and the logo will be on the right side. When you click on the hamburger button, you will be able to see the discover, nearby, etc. tabs. Due to the common look, the learnability of this component should be very high (UI design goals). Users who are using this for the first time should not find this to be too difficult. The header is common across all pages within the website to 'strive for consistency' (8 golden rules). Please note that the 'search' within the header does not exist for main.html and search.html as they both have search text boxes already in the page (News, B. (2010, September 30)). The guideline 'Provide a Search Option on Each Page' (Shneiderman, B. (2006)) is followed.

Rationale behind design of search (Darren)

The search allows users to search for their favourite food or restaurant. You specify the food/restaurant and then the location of where it should be. This UI also allows for 'advanced search' which when clicked on, will showcase additional fields to specify details (such as dietary restrictions). This is to allow for increased functionality (UI design goals) as users who want something specific would be able to specify. We assume that the average user would not care for the 'advanced search'. Of course, more user feedback is necessary for us to confirm that assumption. Without these additional fields, the page will not be as clustered and would be 'simpler'. This in turn will make error rates lower (UI design goals).

Again, this search is similar to a lot of other search UIs on the internet. This allows for increased learnability with the product (UI design goal).

The search bar is very close to the text fields and the icon for search is common. This should make it 'easier' for users according to Fitts's laws.

The guideline 'Include Hints to Improve Search Performance' (Shneiderman, B. (2006)) is also followed as we will be providing hints as the user is typing in the request.

Rationale behind design of "Write a Review" button on the Details page (Sophia)

- Following the Fitts' law, a large and clickable button with clear boundaries was used to increase reachability
- Following Shneiderman, B. (2006), "13.2 Label Pushbuttons Clearly", the button has a clear and descriptive label, 'Write a Review' that describes its action that will be executed once the button is clicked
- Following Shneiderman, B. (2006), "13.14 Prioritize Pushbuttons", highlighted the push button with its bright tomato color and large size to draw the user's attention and make it distinguishable
- Adding a shadow effect to the flat button to signify tapability. Further, to strive for consistency, large push buttons used in this app have the same box shadow effect.
- To maintain consistency throughout the app, the same shape has been used for the buttons in the app.

Rationale behind Google Maps integration on the map view (Sophia)

- We decided to include both the address and the location of the restaurant as an embedded Google Maps as opposed to displaying only the address or a static map image. The embedded map has a red marker that pinpoints to the restaurant location. Having a red marker for the location of the restaurant improves its visibility on the map.
- The embedded map enables users to interact with a map view of the restaurant. They can further zoom in/out on the map to see other nearby locations. On the other hand, a static map which is just an image is not interactive, which means the user cannot navigate and interact through the map.
- The map also helps users to get directions to the restaurant with the Directions button, which is visible on the restaurant details pop-up. The blue colour of the Directions button along with its icon makes it easy for the user to find directions to the restaurant.
- Since Google Maps is the most popular navigation app, it has high learnability and efficiency. Users can intuitively use the map without additional training or manuals.
- To account for accessibility, I followed Shneiderman, B. (2006), "3.5 Provide Text Equivalents for Non-text elements". The restaurant address is provided in a text format above the embedded map. This text is equivalent to the non-text element(the embedded map) that conveys information.
- Used the unique and descriptive heading, Location that conceptually relates to the content it describes

Rationale behind user input form design (Sujan)

With the amount of manual input required for users to initially specify and later update their food preferences and budget information, it is important to consider data entry guidelines when designing input forms. The new account questionnaire, for example, contains several distinct input fields prompting various types of responses, and users need to be able to understand and effectively use the interface to provide correct information. Placeholder text is used in places where the expected input may not be so clear from the input label alone, or to specify where the user has options for both manual typing and selection from a finite number of options. Numeric input fields reject non-numeric input fields and negative numbers. Such measures serve to prevent errors and remove ambiguity with open text fields to increase learnability. Input fields for gender, ethnicity and dietary restrictions are kept open but quick suggestions for each give minimal input actions for the user to enter typical responses. Input fields are largely uniform in style and functionality, giving consistency of data-entry transactions and overall aesthetic. Putting the entire main questionnaire on a single page reduces short-term memory load for users. The overall form appearance aims to match a user's conceptual model of a real form for providing individual-specific information. Input selection and field focus indicators provide feedback on where the user is interacting with the form. Size, intensity and choice of fonts throughout the form serve to provide a visual hierarchy of importance for each element on the page, including separation of form input groups using headings.

Rationale behind frequent use of card layout (Sujan)

The card interface used throughout the application aims to provide a visual hierarchy to the layout of every page and with similar card styles and layout present wherever it is used, this exemplifies the first of eight golden rules of interface design stating to strive for consistency. The card element encloses groups of elements which are related and helps establish distinct entities in a user's conceptual model of the interface pertaining to individual restaurants, etc. within a list. Quickly counting the number of cards displayed gives a small gulf of evaluation to determine how many individual restaurants or other items are being described by the interface, whereas this would be more difficult without such a logical grouping. Card headings are especially useful to denote what is most significant about the contents of each card, as their increased intensity and size would intentionally draw user attention. Bright colours are used for the cost and star rating for each restaurant as they are usually the second thing to be looked at for each restaurant, following the name. Descriptions and the number of ratings and reviews are made smaller and with a standard font as they are secondary, only to be carefully read when a user is interested in that particular restaurant and has already processed the rest of the information.

References

News, B. (2010, September 30). Multiple Search Boxes. Retrieved October 11, 2020, from
https://www.beacontechnologies.com/blog/2010/09/multiple-search-boxes.aspx?fbclid=IwAR1yy
75aDYNU2kka1fOv8izc-1IqvHtaaQDX5ROGDpT3IxEkML9YOlsNqpQ

Shneiderman, B. (2006). *Research-based web design & usability guidelines* (M. O. Leavitt, Ed.).
Washington, D.C.: U.S. Dept. of Health and Human Services.