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Professor Rzeszotarski
INFO 4310
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INFO 4310 Homework 3

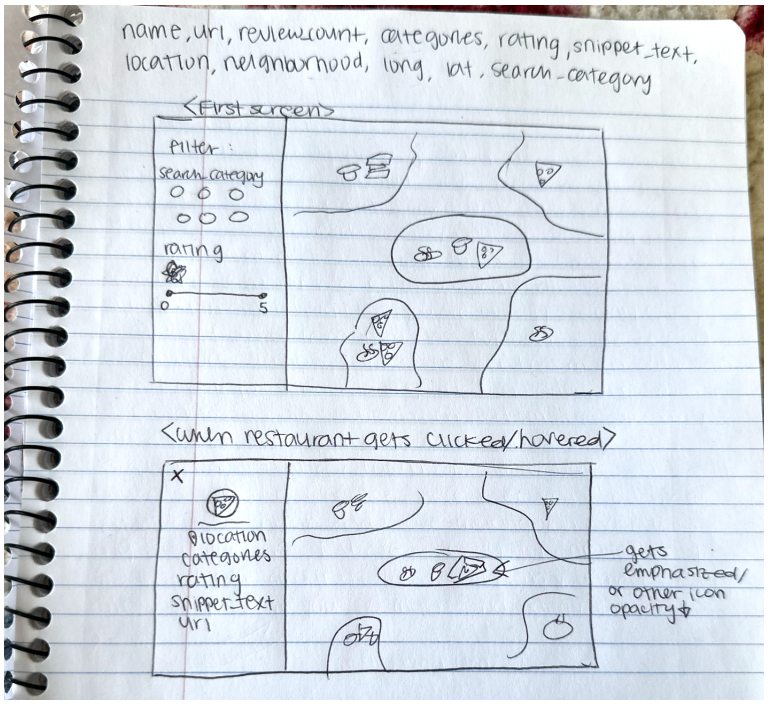
Dataset

We selected the **yelp_boston.csv** dataset for this assignment because we wanted to create a tool that would allow users to easily explore restaurant data to find a spot to eat. The user we had in mind while approaching this assignment is one who does not necessarily have strong preferences, so we created a visualization that allowed them to view all of the Yelp data at once and filter/zoom in on it as necessary.

In terms of pre-processing, we used the **search_category** variable to group a set of cuisines into 6 categories: cafes, American, Asian, Mexican, European, and other—this allowed us to create our filtering functionality. In addition to this, we utilized a majority of the data's features in our dashboard, including **name, url, review_count, categories_json, rating, location_json** (address)**, neighborhood, latitude, longitude,** and **search_category.**

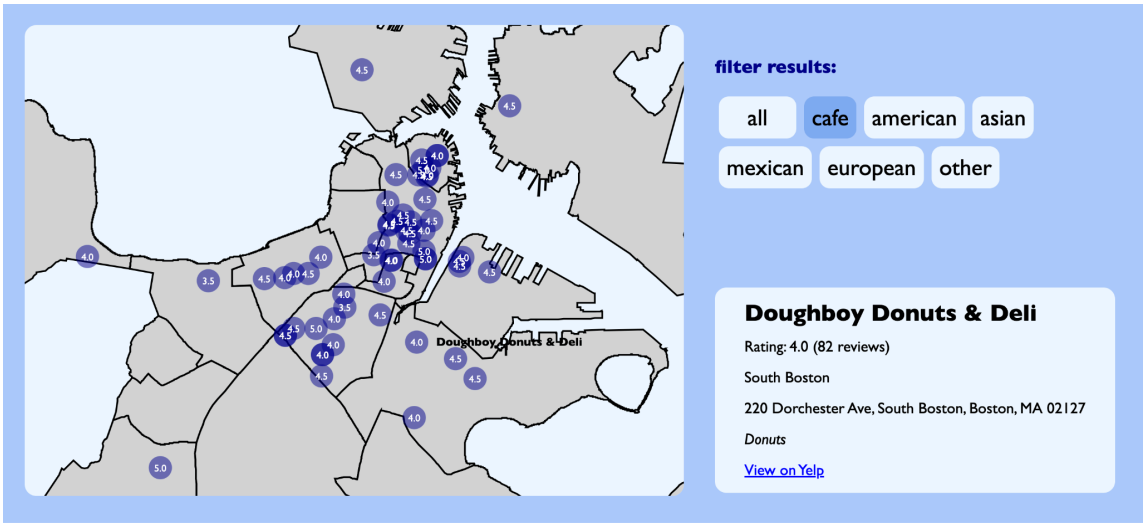
Planning & Final Visualization

***Storyboarding*:** Our storyboards were very much inspired by typical map exploration interfaces such as Google Maps or AirBnb, with the majority of the screen occupied by an interactive map that allows a user to click and hover over a restaurant for additional information. On the side, a filter panel is available for the user to filter the displayed restaurants by cuisine and/or rating. When a restaurant is clicked, a new panel appears, which a user can user to read more about the a given restaurant.



Final Interactive Visualization: Our final visualization stayed very loyal to our initial design plan. The most notable change was our decision to use circles for each restaurant instead of food icons, which are labeled with the restaurants' ratings. This decision was made because once a user decides to filter by a specific type of restaurant, they no longer need to see the type of restaurants available—instead, providing restaurant ratings can encourage them to use a new metric to make their decision on the data.

*After filtering by **cafe**:*



Development Process

In developing our tool, we made several key design choices aimed at improving the user experience and making the tool more engaging. Right from the start, we wanted users to get a quick visual sense of the variety of restaurants available in Boston. To achieve this, we categorized each restaurant by its type of cuisine and used playful images to represent these categories on our website. To view more specific

information on the map, users can first zoom and pan through the map to get a more specific view of certain neighborhoods in Boston. Icons and text labels shrink accordingly based on the users' zoom.

Users can then filter by cuisines they're interested in, and the map instantly reflects these preferences. Instead of using the same cuisine images on the map, which would provide rather redundant information, we chose to use simple circle data points labeled with the corresponding rating for each restaurant. This way, users can easily find highly rated restaurants in their area of interest— this encourages them to use ratings to narrow down their search after their cuisine selection.

When users hover over a data point on the map, the name of the restaurant appears, making it easier to identify places in a crowded map. We made these points enlarge and become more opaque upon hovering to stand out more. Clicking on a data point brings up a panel with more details about the restaurant, such as its name, rating, number of reviews, address, type of cuisine, and a hyperlink to its website. This panel provides all the essential information a user might want before deciding on a restaurant.

Overall, our aim was to make our tool straightforward to use while still offering users the detailed information they need to make informed dining choices. We focused on creating a clean, user-friendly interface that simplifies the process of finding great places to eat in Boston.

Limitations

The primary challenge we faced during the development of this website was the time constraint, which resulted in us prioritizing certain features over others. We made the critical design decision to forego the implementation of a rating filter, which we attempted to compensate for through the rating labels. Given more time, we would have also wanted to make the map more dynamic through implementing an automatic zoom upon a user selecting a specific restaurant.

Another interactivity trade-off involved in our development process was choosing to use fairly large icons for restaurant data (both the food icons and the circles), as this resulted in a significant overlap of icons when a user first views the map. However, these icons become much more visible when a user zooms into the map, which should be expected as part of the user's data exploration process.

Ultimately, we chose to focus our efforts on enhancing the visual appeal of our dashboard and the functionality of the existing interactivity. This decision was made to ensure that, despite our struggle with the assignment timeline, we still delivered a user-friendly and engaging experience on our platform.

Contributions

- **Carly** implemented the filtering, hovering functionality, as well as the restaurant detail panel that appears upon clicking a data point.
- **Myna** implemented the map and the entire pan/zoom functionality, and also implemented the specific icons (food icons for the overview, and rating icons for filtered exploration).