CS 411 Project Proposal - HangOut

❖ <u>Project Summary</u>

➢ Our project introduces an innovative user interface program designed to revolutionize restaurant discovery by offering personalized recommendations based on users' preferences, location, and dining history, while also considering the safety of dining areas by incorporating local crime rates. Unique to our platform, the "HangOut" or "Group Dining" feature enhances the social aspect of dining out by allowing users to organize meals at selected restaurants and invite friends for private events or use public posts to welcome anyone interested in joining, fostering community and encouraging new friendships through shared culinary experiences. This comprehensive approach aims to simplify the search for the perfect dining spot, ensure safety, and bring people together over the love of food, setting our application apart in the competitive landscape of restaurant recommendation services.

❖ <u>Application Description</u>

➢ In this project, our team aims to develop a user interface program that provides restaurant recommendations to the users based on their preferences, location and dining history. The core objective is to simplify the process of finding suitable dining options based on specific filters and previous dining experiences. Our platform will utilize the standard functionality of a typical restaurant recommendation app. However, in order to differentiate our program, we will address safety concerns during the daily commute by considering the crime rate of the area surrounding each restaurant when making recommendations.

➢ In addition, we will be introducing an innovative feature called "HangOut" (or "Group Dining") to make our site even more unique. This feature allows users to plan a meal at a specific restaurant and invite friends to join them for a social dining experience. Users can create an event by selecting a restaurant and time, which will be shared within their community and visible only by their friends. For

those looking to expand their social circle, there is also the option to make public post invitations to build new friendships through shared meals.

❖ Usefulness Description

➢ Our web application offers a comprehensive suite of features designed to enhance the dining-out experience by integrating restaurant information, user reviews, neighborhood crime rates, and the ability to make dining appointments all within a single platform. Unlike conventional apps such as Yelp, which primarily focus on restaurant discovery and reviews, our app places a significant emphasis on safety, helping users find not just great places to eat, but also ensuring these locations are in safe neighborhoods.

➢ In today's digital landscape, users often find themselves toggling between social apps like WhatsApp to make plans and other platforms to gather restaurant details and share recommendations—a process we believe is inefficient and cumbersome. Our solution streamlines this experience, allowing for seamless coordination and informed decision-making without the need to switch between multiple apps.

➢ Safety is a paramount concern, especially in cities like Chicago and Baltimore, known for their varying crime rates across neighborhoods. Our application addresses this by providing users with up-to-date crime data, enabling them to make informed decisions about where to eat out, particularly during nighttime.

❖ Data Resource Description

➢ Restaurant Information

■ We have curated data from two prestigious sources:

● **Yelp Open Source Dataset**: This dataset offers detailed information on restaurants, including `name`, `address`, `city`, `postal code`, `latitude`, `longitude`, `stars`, and `attributes` such as `BusinessParking` (indicating the

availability of a parking lot), `categories`, and `hours`. More details can be found in the Yelp Dataset Documentation.

- **Kaggle Open-Source Restaurant Dataset**: As an alternative, we utilize a dataset available on Kaggle, which encompasses similar attributes to provide our users with a robust selection of restaurant choices. This dataset can be explored further via Kaggle's Website.

➢ Crime Rate Information

- Understanding the importance of safety in dining experiences, our application integrates crime rate information by leveraging the US Department of Justice's open-source API. This feature allows us to present crime rates based on the restaurant's address or its geographical coordinates (latitude and longitude), enabling users to make informed decisions about their dining locations. Further information is available at the US Department of Justice Developer Resources.

➢ User Reviews

- Initial restaurant scores are determined by the `stars` and `review_count` from the Yelp dataset. These scores are dynamically updated based on user feedback within our app. Additionally, we are introducing a new data entity to encapsulate comments and reviews from our app's users, ensuring that our platform remains up-to-date and reflective of genuine customer experiences.

❖ Functionality Description

➢ Restaurant Information and Details:

- Each restaurant profile includes essential information such as address, category, price range,star and hours of operation.

- Users can view relevant information to plan their visits effectively.

- ➢ Restaurant Search and Discovery:

  - ■ Users can search for restaurants based on location, category, price range, and other filters.

- ➢ User Reviews and Ratings:

  - ■ Users can read and write reviews to share their experiences and opinions about restaurants.

- ➢ Posting Schedules:

  - ■ Users can create and post their schedules, indicating the date and time they plan to eat out at a particular restaurant.

  - ■ The posted schedule can be seen by the user's friends or the public.

- ➢ Viewing public and Friends' Posted Schedules

  - ■ Users can also view the schedules posted by their friends/ public post

  - ■ Users can add comments to the schedule, like indicating whether they want to join.

- ➢ Safety Ratings and Indicators:

  - ■ The crime rate evaluation function presents safety ratings and indicators for the location near the selected restaurant.

  - ■ Safety ratings are typically represented using a numerical scale or a visual indicator, such as a color-coded system or icons.

- ➢ Visualization of Crime rate around restaurant location on map:

  - ■ The mapping feature visually displays restaurant location with crime hotspots

  - ■ Crime hotspots are areas with a higher concentration of criminal activities.

- ➢ Login Function:

  - ■ Users can log in by entering their registered email address or username and password.

- ➢ Sign Up:

  - ■ New users can create an account by providing their name, email address, and password.
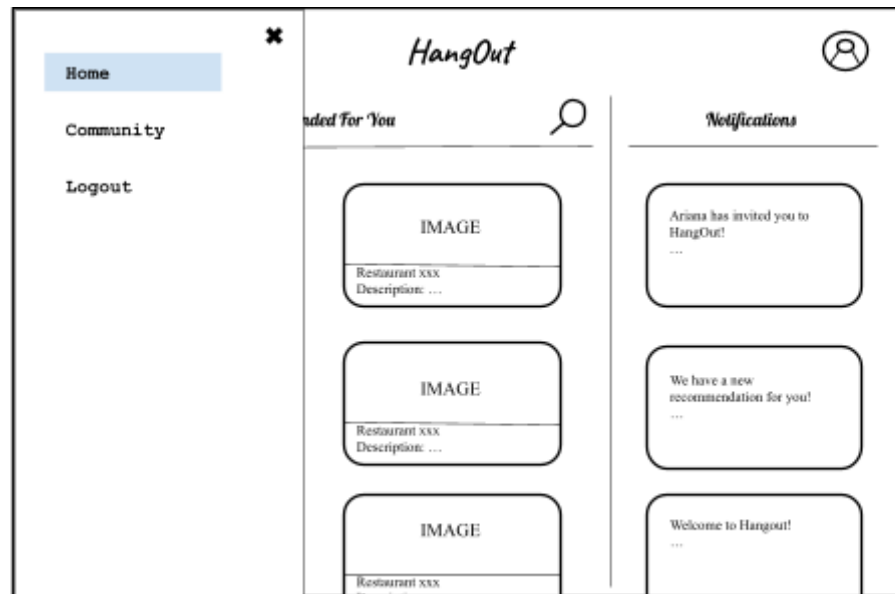
- ➢ Add Friends/ community:

  - ■ Users can search for friends/community by their account numbers or usernames.
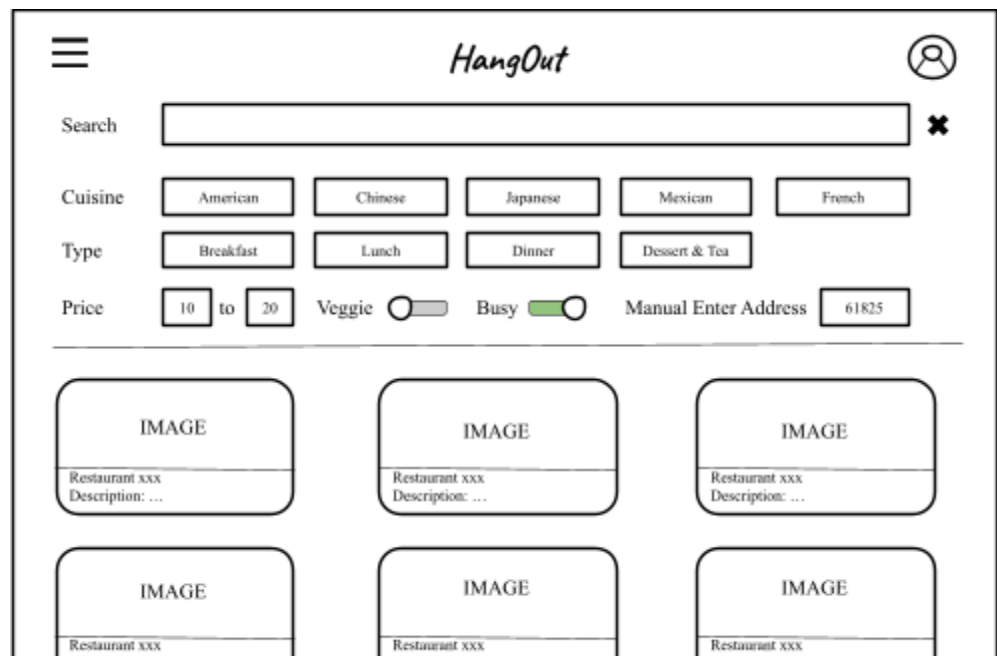
- ❖ <u>Low-Fidelity UI Mockup</u>

  - ➢ Home Page

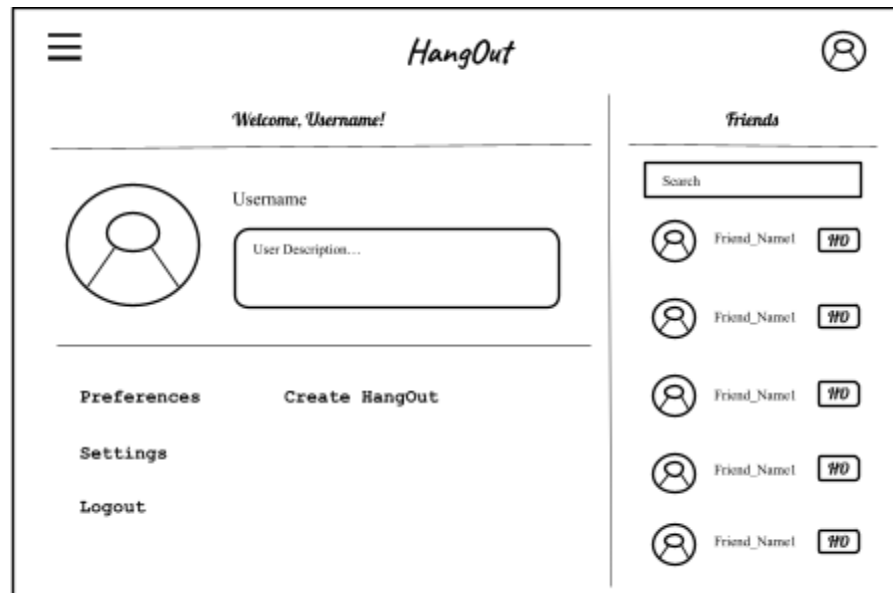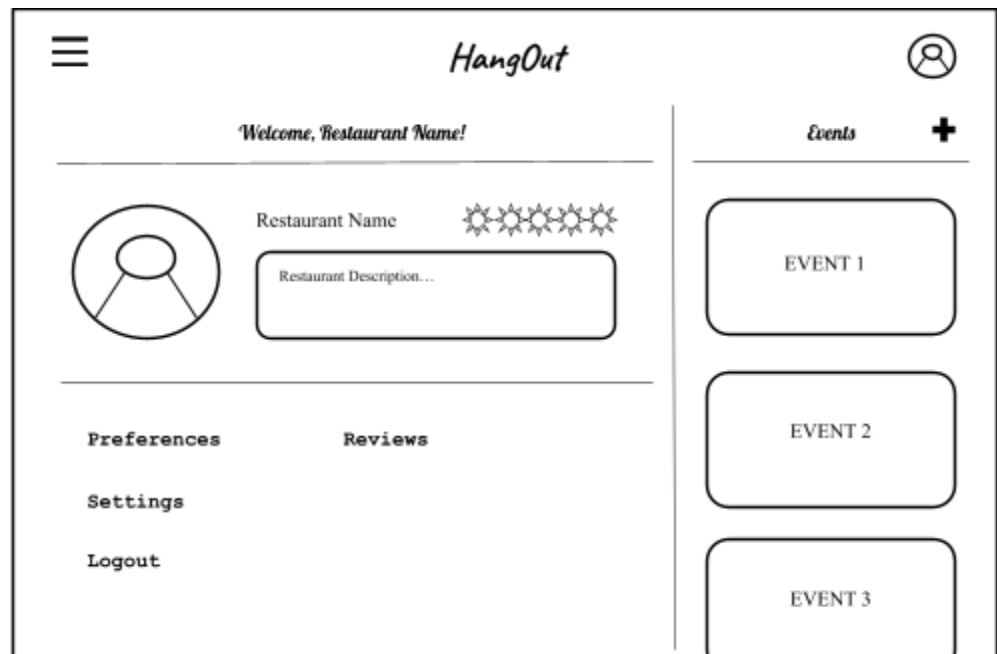 - ■
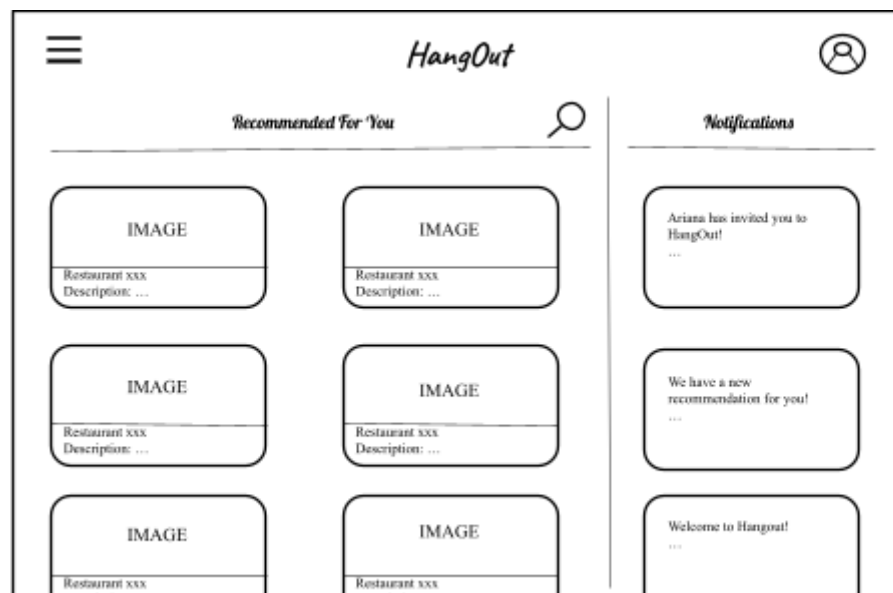
■ On click of the top left button:

➢ Search Page

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➢ User Profile Page

- The "HO" button is the HangOut button that lets user instantly create hangout for that specific friend

➤ Restaurant Profile Page

- The sun to the right of the restaurant name is the current rating of the restaurant

➢ Restaurant Page

HangOut

Restaurant Name ☼☼☼☼☼☼
Restaurant Description…

Reviews

Review Content…

Review Content…

Events

EVENT 1

EVENT 2

EVENT 3

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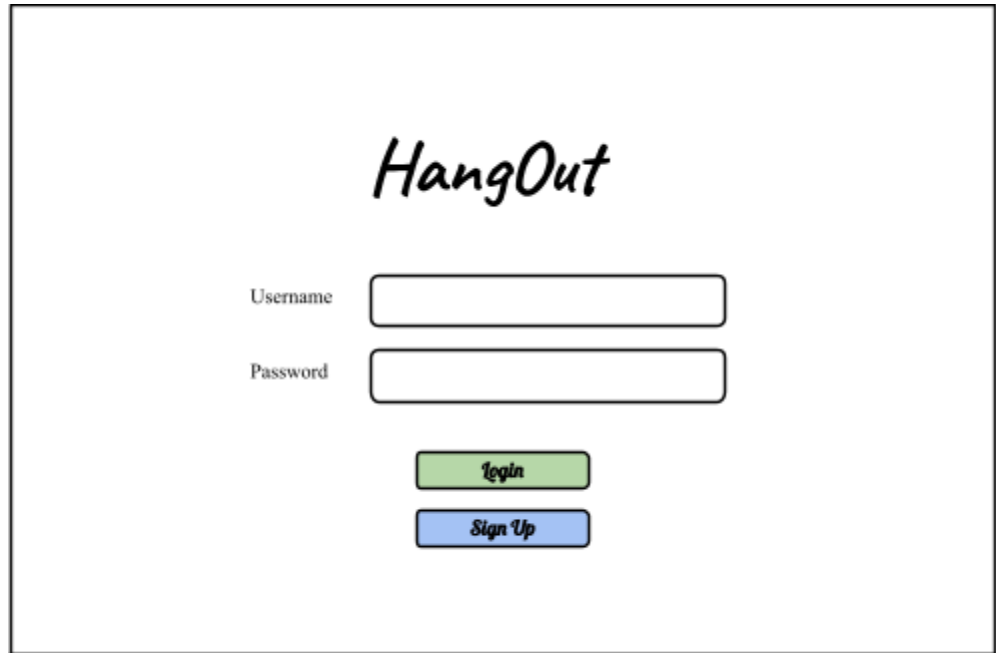
➢ Community Page - View Schedules

HangOut Community

Search

Cuisine | American | Chinese | Japanese | Mexican | French
Type | Breakfast | Lunch | Dinner | Dessert & Tea
Price | 10 to 20 | Veggie ⬤ | Busy ⬤ | Manual Enter Address | 61825

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Request xxx
Description: …

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Request xxx
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➢ Login Page

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➢ Sign Up Page

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❖ Work Distribution

➢ Arthur Li: I will be in charge of team management, frontend design, database implementation. I will also be responsible for the implementation of the communication between the crime rate API and the database. In addition, I will implement the backend with other team members.

➢ Chris Deng: I will be in charge of part of gathering data and preprocessing the data and storing them into databases. In addition, I will help with some backend implementation such as for crime functions.

➢ Justin Wang: I will be in charge of the implementation of the filter and community functionality. In addition, I will also be responsible for the part of the frontend design.

➢ Wendy Wang: I will be in charge of part of the Safety Ratings and Indicators backend design, also the implementation of the login and sign-in and Restaurant Information and Details functionality. In addition, I will also be responsible for the part of the frontend design.