Title: AccommoSeek

- Streamlined Accommodation Discovery and Booking

1. Project Summary

AccommoSeek is a sophisticated web application designed to help users discover the perfect accommodations tailored to their individual preferences. It offers a highly customizable search experience, allowing users to apply filters such as city, accommodation type, ratings, reviews, desired temperature, travel budget, crime rate and more, ensuring the recommendations align closely with their needs. Additionally, the platform allows users to share their experiences by posting reviews and rating their stays across various aspects, further enriching the community's wealth of information and assisting others in making informed decisions.

2. **Description** of an application of your choice. State as clearly as possible what you want to do. What problem do you want to solve, etc.?

When making travel plans, deciding on a location can sometimes be challenging, not to mention choosing accommodations. With our application, it is possible to identify potential locations based on various factors. For example, weather plays a crucial role when you decide to go on a vacation. Travel expense is also an important thing to be considered. What’s more, the crime rate of the accommodation should be taken into account before making reservations. We aim not only to assist users in finding suitable accommodations but also to take into consideration the external factors of the travel destination.

3. What would be a good creative component (technically challenging function) that can improve the functionality of your application? (What is something cool that you want to include? How are you planning to achieve it?)

(1) Interactive Map

Our website showcases available accommodations throughout America, displayed conveniently on an interactive map for easy browsing. This gives users an overview of the choices they have.We will utilize the module from Bootstrap and Amchart to achieve the interactive effect.

(2) Analysis of Historical Statistics

Our website leverages past data like temperature, precipitation, hotel ratings, and city living expenses to aid in decision-making. When users specify their needs in the filter, our intelligent filtering system suggests accommodations that match users' needs using past data. We will select data from the City Temperature Table, State Rainfall Table and Living Wage Table to provide the appropriate information for the selected position.

(3) Regional Crime Rate

Our website will incorporate the US crime rate into our recommendation system, which will provide the information for those who are not familiar with the safety condition of every region but put their safety as the first priority. We will select data from the Crime Rate Table and classify the degree of risk in the form of icons (such as alarm bell) to remind the user.

4. **Usefulness**. Explain as clearly as possible why your chosen application is useful. What are the basic functions of your web application? (What can users of this website do? Which simple and complex features are there?). Make sure to answer the following questions: Are there any similar websites/applications out there? If so, what are they, and how is yours different?

- Simple Feature
    - Users can filter accommodations based on location, weather, rating, crime rate and so on.
    - Users can sort accommodations based on the number of reviews, rating, crime rate.
    - Users can create, edit, delete reviews.
- Complex Feature
    - Interactive UI
    - Analysis of historical climate statistics
    - Regional Crime Rate

This website streamlines the accommodation decision making process from discovery to booking. The basic function of this website is to provide the recommendation of accommodation with the user's preference, including location, date and other user comments. In addition, it will hyperlink to the accommodation website to allow the user to book. After the travel, the user can add or delete the comment of others (in case that will be fraud ones). The similar websites, such as booking.com and agoda.com, lack a user friendly UI and the consideration of weather and crime rate. However, our application includes these features in the website.

5. **Realness**. We want you to build a real application. So, make sure to locate real datasets. Describe your data sources (Where is the data from? In what format [csv, xls, txt,...], data size [cardinality and degree], what information does the data source capture?). It would be hard to satisfy stage 2 requirements with one dataset. Thus, **we strongly recommend identifying at least two different data sources for your project.**

Our project leverages a collection of practical datasets in the form of .csv, primarily sourced from Kaggle's open-source repository and U.S. Climate Data, to provide a comprehensive analysis of hotels across the United States. These datasets detail various attributes such as addresses, cities, and customer feedback, offering deep insights into the accommodations available. To enrich our analysis, we've incorporated data on the weather conditions for each hotel's city, which includes monthly temperature and rainfall statistics. Additionally, we have integrated a dataset detailing the living wages in each city, providing a broader economic context for our analysis.

To further enhance our project, we plan to include an analysis of the crime rate in each city. This new feature aims to offer a more holistic view of the safety aspects, assisting users in making informed decisions about where to live or stay. By leveraging the "city location" attribute as a common key, we aim to merge these datasets seamlessly. This integration will enable us to fulfill specific user requests by filtering data across multiple dimensions, including hotel characteristics, local weather patterns, economic factors, and crime rates. This comprehensive approach ensures a well-rounded analysis that takes into account not only the amenities and environmental conditions but also the safety and economic viability of each location.

1. Hotel Reviews Table: This table catalogs information on various hotels.

Name VARCHAR(255),
City VARCHAR(255),
Reviews Date VARCHAR(255),

Reviews Date Seen VARCHAR(255),
Reviews Rating INT,
Reviews Title VARCHAR(255),
Reviews Text VARCHAR(255)

2. City Temperature Table: This table records monthly temperatures by city.
City VARCHAR(255),
Month INT,
Year INT,
Temperature REAL

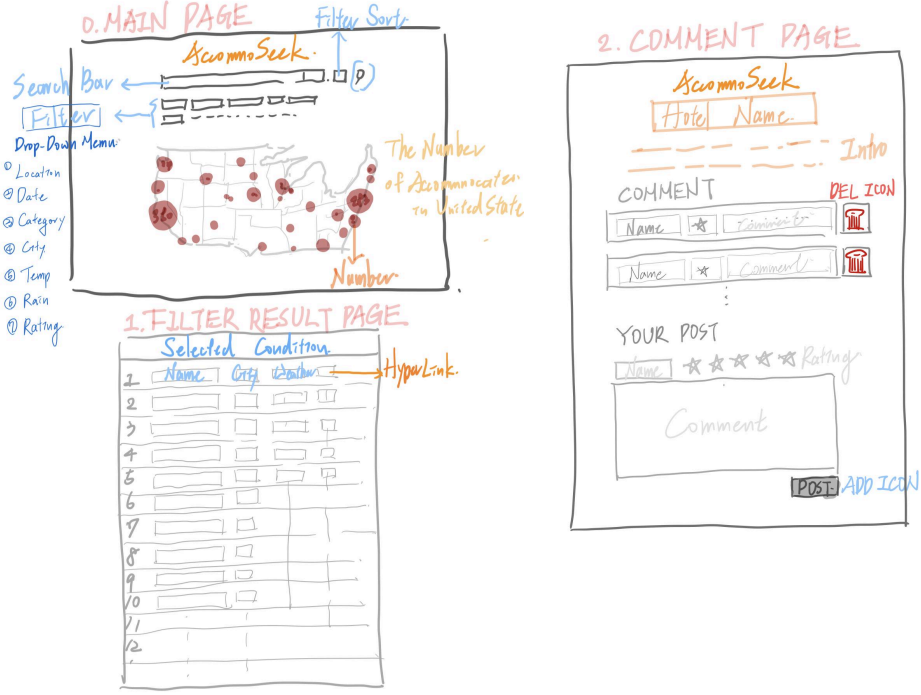
3. State Rainfall Table: This table provides rainfall statistics by state.
State VARCHAR(255),
Month INT,
Year INT,
Precipitation REAL

4. Living Wage Table: This table lists the living wage in different cities.
City VARCHAR(255),
Living Wage REAL

5. Crime Rate Table: This table provides the frequency of crime across various cities.
State VARCHAR(255),
City VARCHAR(255),
Population INT,
Crime Frequency INT

6. A detailed description of the **functionality** that your website offers. This is where you talk about what the website delivers. Talk about how a user would interact with the application (i.e., things that one could create, delete, update, or search for). **Read the requirements for stage 4 to see what other functionalities you want to provide to the users.**
    - Select filters that users want to apply for search result
    - Input text for searching related accommodations
    - Use interactive map to decide traveling destination
    - Click on search result and direct to a new tab with more detailed information
    - Click on URLs that direct to the official website of accommodations
    - Create reviews on previous accommodations
    - Edit or Delete after submitting reviews

    1. **A low-fidelity UI mockup**: What do you imagine your final application's interface might look like? A slide or a pencil sketch on a piece of paper works!



2. **Project work distribution**: Who will be responsible for each of the tasks or subtasks?
   Explain how backend systems will be distributed across members. Be as specific as possible as this could be part of the final peer evaluation metrics.
   - Database management and request
     - Sheng-Min Lin
     - Si-An Chen
   - Data extraction to database
     - Sheng-Min Lin
     - Si-An Chen
   - Backend server framework and API to access database：
     - Bo-Hao Wu
     - Chien-Kai Kuo
   - Backend server framework and API to communicate with frontend
     - Bo-Hao Wu
     - Chien-Kai Kuo