Lab 1 - TasteBuddies Product Description

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1 Introduction

In recent years, Americans have spent over $1.5 trillion on dining out, underscoring how the restaurant industry plays a significant role in our social lives and the economy (OpenTable, 2023). Because of rising food costs and inflation (which has consistently outpaced wage increases), dining out has become a financial risk for many (Perkins, 2024). Financial difficulty, when coupled with the overwhelming decision-making process involved in choosing a restaurant, has led to reduced restaurant visits and the social benefits shared meals in a public setting provide (University of Oxford, 2017).

A major challenge facing potential diners is the overwhelming choice of restaurants and the lack of personalized dining recommendations. Online platforms like Yelp, Google, and TripAdvisor offer reviews which are often generic or even fake, losing customer trust and making it more difficult for users to make confident decisions about where to eat (Vaghasiya, 2024). When dining with friends, decision-making becomes even more complicated as the culinary preferences and dietary restrictions of each person must be considered.

An effective solution to these issues would be to provide personalized recommendations based on individual taste preferences while incorporating verified and trusted reviews from users with similar tastes. To address these needs, we propose TasteBuddies, a personalized dish-recommendation app designed to help users “dine with confidence”.

2 Product Description

TasteBuddies provides a solution to the problem of overwhelming dining choices by offering a selection of specific dishes tailored to the user's unique taste profile. Using data from other users, taste profiles can be compared to produce a dish most likely to satisfy the user.

2.1 Key Product Features and Capabilities

The key product features and capabilities of TasteBuddies include Taste Profiles, Live Updates, and Intelligent Systems which work together to provide personalized recommendations, real-time insights, and adapt to individual and group preferences.

Taste Profiles allow users to build a personalized profile based on their unique tastes. In addition to defining their taste preferences, users can also include any dietary restrictions or allergies.

Live Updates provide users with up-to-date information such as updated menus, trending dishes, seasonal dishes, and a daily dish feed using crowdsourced information and information provided by restaurants through the web interface (for example, users are notified when their favorite restaurants update their menus).

Intelligent Systems power TasteBuddies recommendation engine by prioritizing reviews from users with similar taste profiles and filtering out irrelevant feedback. The system also offers mood-based recommendations where users can specify their current mood to receive tailored dish suggestions.

2.2 Major Components (Hardware/Software)

The major components of TasteBuddies are structured across three layers: The Presentation Layer, which includes the mobile interface for users as well as the web interface for restaurants to interact with them, the Application layer which includes data processing and the

Taste Matching, Recommendation, and Group Dining APIs, and the Data layer which stores user and restaurant data in a secure PostgreSQL database.

3 Identification of Case Study

TasteBuddies is designed with everyday diners in mind. Everyone has had negative experiences when dining out in the past; TasteBuddies offers a solution that eliminates some of the uncertainty surrounding dining out and provides an enhanced and more confident process for selecting a restaurant or a new dish to try. TasteBuddies will benefit groups (such as a group of friends, a family, or a business party) by allowing everyone to contribute their own taste profiles and allow the algorithm to suggest restaurants that would have something for everyone.

TasteBuddies will also benefit restaurants by giving them a platform to engage with potential customers and facilitating loyal customer relationships.

We anticipate TasteBuddies to be used by travelers unfamiliar to the local eating scene of their destination, families too busy to cook, couples going on a date, or individuals just looking to treat themselves to a nice dinner. Picky eaters, foodies, and eaters who want to stick with familiar types of dishes can all benefit from using TasteBuddies. Anyone who enjoys dining out are potential TasteBuddies users, as well as local restaurants who are looking for a simple and easy way to engage with their customers and keep them up-to-date.

4 Product Prototype Description

The prototype includes simplified versions of the Taste Profiles, Live Updates, and Intelligent Systems feature which are not as comprehensive as the final product. The prototype focuses on usability testing with a streamlined user interface and uses mock data for

recommendations and restaurant details. The final product will integrate live data feeds using APIs, including real-time data from Google. Community engagement features such as connecting with TasteBuddies are also not fully implemented in the prototype. For the backend, the TasteBuddies Prototype will utilize a simplified database structure, focusing on key features like user profiles and preferences. The final product will involve a more robust data model.

5 Glossary

Crowdsourced Data: User-generated data on restaurant wait times, dish availability, quality, and more.

Curated Reviews: Reviews presented and weighted based on users with similar Taste Profiles.

Daily Dish Report: Provides live updates from TasteBuddies and restaurants, including new reviews, specials, and dishes.

Data Clustering: Grouping diners into clusters with similar preferences to enhance taste profile accuracy and recommendations.

Dining Filters: Options to filter restaurants by location, cuisine, occasion, and current busyness.

Google API: An external tool integrated into the app to provide real-time data on restaurant occupancy and busyness.

Group Dining Algorithm: An algorithm that combines multiple users' profiles to provide recommendations for restaurants and dishes that best match group preferences.

Recommendation Algorithm: An algorithm that provides users with relevant recommendations based on their matched TasteBuddies, taste profile, and previous interactions.

Social Engagement: Encourages users to interact with each other and get involved in the community.

Super TasteBuddies: Taste influencers or food experts with specialized knowledge who can recommend specific cuisines or dishes.

Tailored Recommendations: Personalized recommendations based on a user’s taste profile.

TasteBuddies: Users with highly similar taste profiles, leading to improved recommendations based on aligned tastes.

Taste Matching Algorithm: A key algorithm in the app that pairs users based on similar taste profiles.

Taste Profiles: Personalized profiles created by each user, based on their taste preferences, such as for spicy, sweet, salty, etc.

6 References

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