Lab 2 – TasteBuddies Product Description

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1 Introduction

1.1 Purpose

This Software Requirements Specification (SRS) document is written specifically for developers, serving as a technical reference for system implementation. It defines the technical requirements necessary for developing TasteBuddies, ensuring accurate implementation, systematic testing, and ease of future development and modification.

1.2 Scope

TasteBuddies is a recommendation application with aspects of social media designed to help users discover restaurants and dishes tailored to their individual tastes, dietary restrictions, and previous dining history. The application uses the taste matching, dish recommendation, and group dining algorithms to give users accurate recommendations. The results from these algorithms are presented to the user by the “Daily Dish Feed” which will contain recommended dishes, restaurants, and reviews from other users that share a similar taste profile to the user. TasteBuddies does not allow functions such as reservation booking, payment processing, and food delivery.

1.3 Definitions, Acronyms, and Abbreviations

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

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

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

Data clustering: grouping diners in a group that is similar to determine taste profiles and recommendations

Dining Filters: Ability to filter restaurants by location, cuisine, occasion, and how busy they are.

Generic reviews: The issue of unauthentic online reviews, which the app addresses by focusing on personalized recommendations.

Google API: An external tool integrated into the app that provides real-time data on how busy a restaurant is.

Group Dining Algorithm: Algorithm that combines multiple users profiles and provides reviews for restaurants and dishes that best match the group preferences.

Group Indecision: Conflicting opinions and preferences of a group lead to more difficult decision making which causes delays.

High financial risk: The risk of losing/wasting money based on a decision.

ODU: Old Dominion University.

ORM: Object-Relational Mapping.

Overwhelming choice: An excessive number of options to choose from which makes decisions difficult.

Recommendation Algorithm: Algorithm that provides users with relevant recommendations based on their matched TasteBuddies, taste profile, and interacted content.

Restaurants: Venue that provides a sit-down dining experience where the primary revenue is prepared food. It must have a nice bathroom.

Safe space: Space where people are free to express and enjoy their interest without fear of being judged.

Social engagement: Promote users to interact with one another and be involved within the community.

Super TasteBuddies: Taste influencers or food experts that have specialized knowledge and can recommend specific cuisines or dishes.

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

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

Taste Matching Algorithm: A key algorithm of 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 preferences for spicy, sweet, salty, etc.

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1.5 Overview

The remaining sections of this Software Requirements Specification are structured as follows: Section 2 provides an Overall Description, offering context about the TasteBuddies application, detailing its architecture, product functions, and defining user characteristics and constraints. Section 3 outlines the specific functional and non-functional requirements that define the expected system behavior, constraints, and performance standards necessary for the development and validation of the prototype.

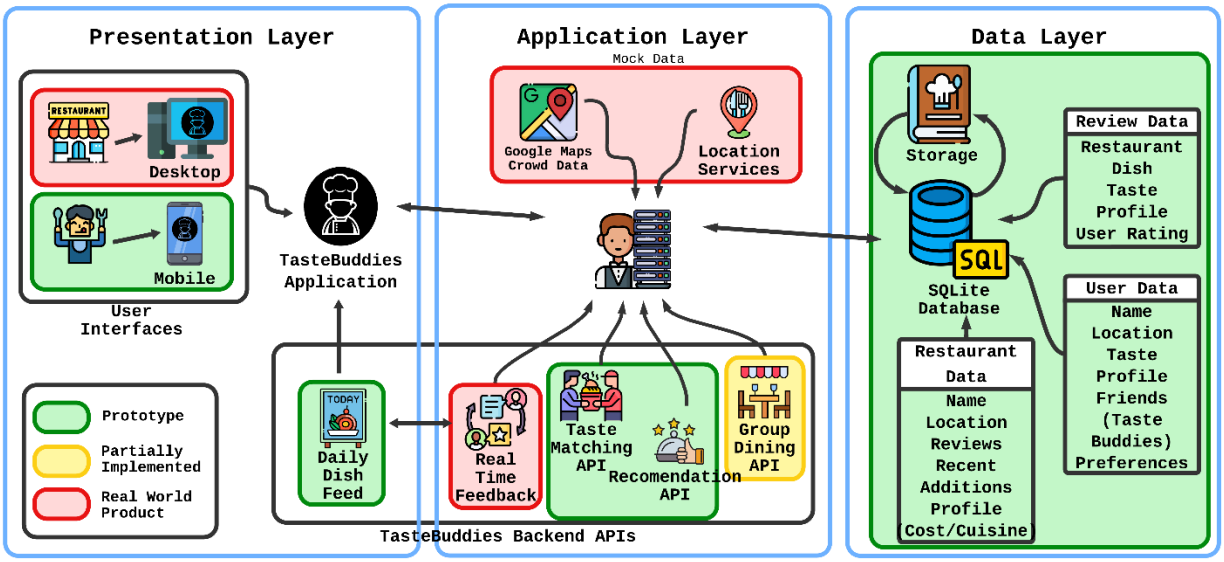
2 Overall Description

2.1 Product Perspective

TasteBuddies is a recommendation application with aspects of social media hosted on DigitalOcean. It has two interfaces: a desktop-focused interface designed specifically for restaurant use, allowing efficient management and productivity, and a mobile-focused interface tailored to provide convenient access for users.

Figure 1

Major Functional Components Diagram



The application is structured into three primary layers. The presentation layer is built using Python with Flask, delivering content from both the application and data layers directly to users. Within this layer, users interact primarily through the "Daily Dish Feed," which displays personalized recommendations generated by the underlying algorithms.

The application layer contains the algorithms written in Python, including taste matching, dish recommendation, and group dining. The taste matching algorithm retrieves user taste profiles from the database, compares them to identify similar taste profiles among users, and stores these results for further use in the database. The dish recommendation algorithm uses these taste-matching results to provide users with dish recommendations based on positively reviewed dishes from matched users. Recommendations are delivered through the Daily Dish Feed. The group dining algorithm aggregates individual user taste profiles within a group, identifying restaurants that best accommodate all group members' tastes. Additionally, this layer includes mocked restaurant location data, which will not be fully implemented in the prototype.

The data layer consists of a SQLite database managed via SQLAlchemy, an ORM tool. SQLAlchemy helps simplify the management of the database, allowing easier development in the application’s backend.

2.2 Product Functions

Table 1

Table of Comparison Between RWP and Prototype

Category	Features	RWP	Prototype	Additional Notes
Account Management	Account Creation	**X**	**X**	
	Login / Authentication	**X**	Eliminated	

	Access Permissions and Preferences	**X**	Partial Implement	required for database
	Taste Profile	**X**	**X**	
Mobile App Features	Social Engagement	**X**	Partial Implement	Find friends only for group matching
	Daily Dish Feed	**X**	**X**	
	Group Restaurant Matching	**X**	Partial Implement	
	Dish Recommendations	**X**	**X**	
	Taste Profile Builder	**X**	**X**	
	Reviews	**X**	Partial Implement	Mock data
	Community Updates	**X**	Eliminated	
	Dish Validation	**X**	Eliminated	
	Taste Matching	**X**	**X**	
	Notification Features	**X**	Eliminated	
	Engagement Features	**X**	Eliminated	
Database Management	Data Analytics	**X**	Eliminated	
	Data Privacy and Security	**X**	**X**	
	Trend Reports	**X**	Eliminated	
	Data Backups	**X**	**X**	

TasteBuddies provides several features across multiple categories: Account Management, Mobile App Features, Database Management.

In Account Management, the prototype fully implements account creation and taste profiles, partially implements access permissions and preferences, and eliminates login/authentication.

For Mobile App Features, the Daily Dish Feed is fully implemented, while social engagement, group restaurant matching, and reviews are partially implemented. Other features such as dish recommendations, community updates, dish validation, notification features, and engagement features are eliminated.

Expanding upon the Mobile App Features, social engagement includes limited functionality centered around connecting with other users. Users can find and follow other TasteBuddies for group matching and personalized recommendations. However, additional social features such as following restaurants or giving a like to a review are not implemented. Live interactive updates are also limited. Users can view the partially implemented Daily Dish Feed and submit reviews. Other functionalities such as dish updates and receiving notifications have been eliminated from the prototype.

Database Management features, including data analytics, data privacy and security, trend reports, and data backups, are fully implemented in the real-world product but eliminated in the prototype.

The Recommendation Engine fully implements taste matching and dish recommendation, while taste profile and group restaurant matching are partially implemented. Rewards and adaptive taste profile personalization are eliminated.

Search functionalities for filtering restaurants and dishes are eliminated, as are engagement features such as rewards, badges, and challenges.

2.3 User Characteristics

TasteBuddies has two primary user roles: general users and restaurant operators. General users are individuals who use the mobile interface to receive dining recommendations. These users are expected to have basic proficiency with smartphones and common mobile applications.

Typical usage scenarios for general users include creating and updating taste profiles, browsing dish recommendations and interacting with the Daily Dish Feed.

Restaurant operators use the desktop-focused interface, primarily managing their restaurant information. Operators are expected to have moderate technical proficiency with desktop usage and data management applications. Their typical usage scenarios involve updating restaurant details, monitoring user reviews, and managing restaurant-specific information that increases recommendation accuracy.

There are no specific constraints related to user expertise levels beyond basic familiarity with mobile or desktop applications and general internet navigation skills.

2.4 Constraints

N/A

2.5 Assumptions and Dependencies

N/A