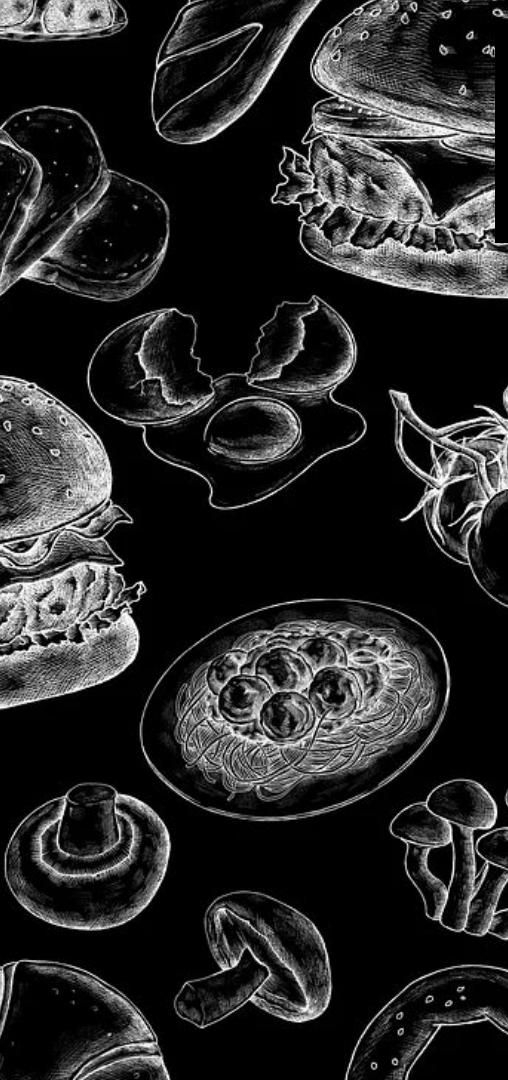




# TasteBuddies

*"Dine with confidence"*

Team Iron  
Fall 2024



# Today's Menu

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# Meet the Team



**Colette Woods**  
Creative Director  
Maître d'



**Grant Fitch**  
Project Lead  
Iron Chef



**Ben Nissley**  
Webmaster / Frontend Developer  
Sommelier / Cicerone



**Oronde' Brown**  
Backend Developer  
Saucier



**Ashley Barasebwa**  
Database Developer  
Grillardin



**Nate Donald**  
Backend Developer  
Rôtisseur

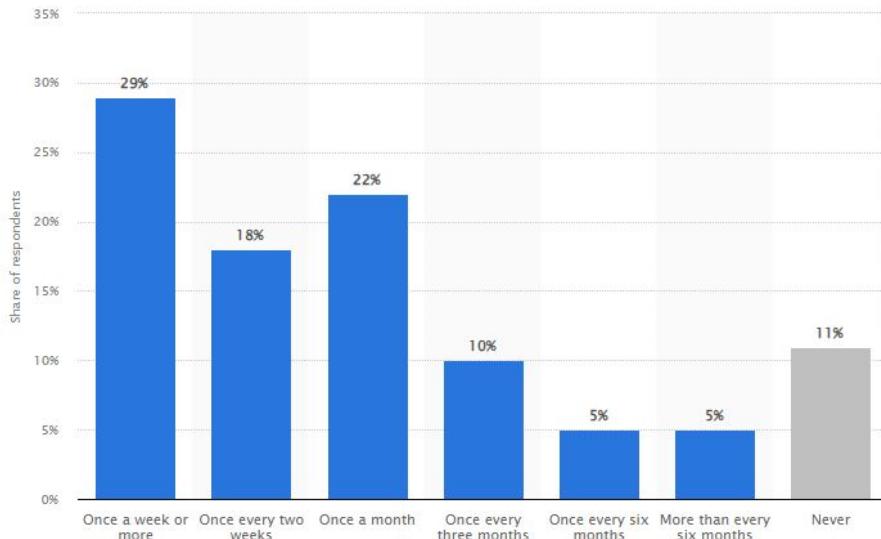
# The Dish (background)

 Everyone eats

 In 2023, Americans spent \$1.5 Trillion dining out<sup>[1]</sup>

 Family spending on dining out has increased year after year, passing pre-pandemic levels<sup>[2]</sup>

Frequency of eating out at a restaurant in the United States as of January 2022



Source: Statistica [3]

# The Dish

- 🍔 Dining out is used for several occasions, be it graduations, dates, or just promoting stronger bonding
- 🍔 Research suggests that communal eating increases an individual's wellbeing, social bonding, and happiness<sup>[4]</sup>
- 🍔 50% of American diners prefer to dine out in a group<sup>[5]</sup>



Restaurants provide:

- 🍔 **Social engagement**
- 🍔 **Safe space**
- 🍔 **An opportunity to bond over food without the hassle.**

# The Deep Dish

So why not just eat at home with family and friends?



## Time

- 🍴 It takes time to cook, and people have busy schedules.



## Space

- 🍴 Not everyone can accommodate all their friends and family



## Tastes

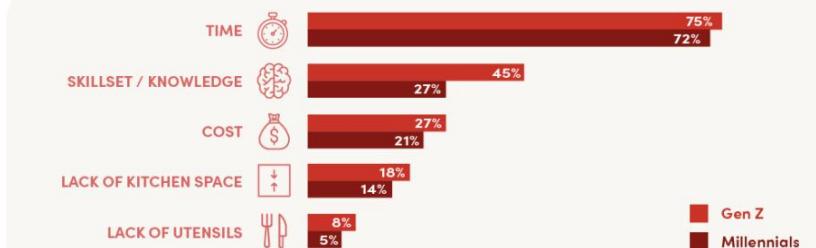
- 🍴 Who's cooking? Vegan Val might not find any suitable dishes at Carnivore Carl's house.



## Skill

- 🍴 Not everyone is capable of cooking at home.

### Top 5 Reasons Gen Z & Millennials Don't Cook More at Home



Source: Home Run Pizza [6]

# But wait...

Which restaurant will you go to?

- 🍔 You can look at online reviews, but they are generic, resulting in inefficient decision making <sup>[7]</sup>
- 🍔 Besides, what does your buddy like to eat? How can you find a place that suits both of you?
- 🍔 Choose wisely, because dining out is becoming increasingly expensive.



# The Deeper Dish



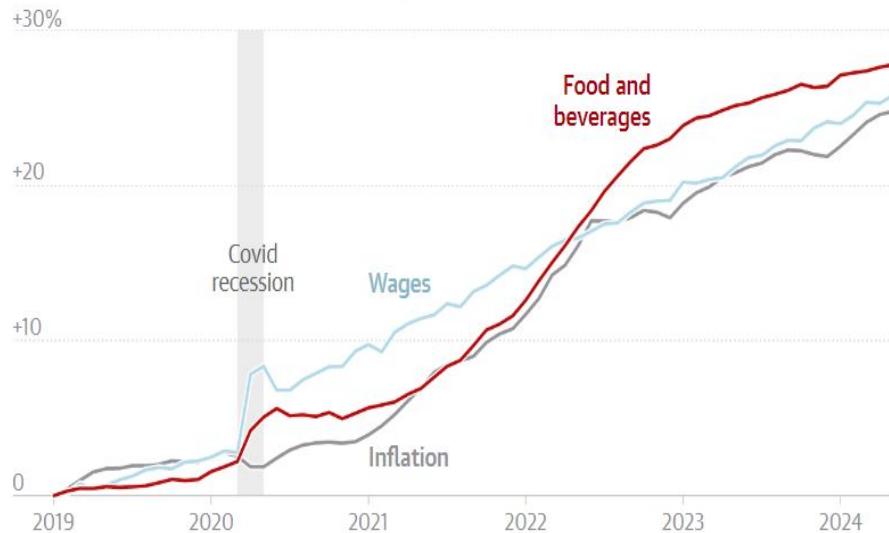
Inflation is up 2.53% over the year with restaurants up 4.1%, affecting the price of dining out and wages not keeping up with these increases.<sup>[8][9]</sup>



The financial risk may cause people to avoid going to a restaurant for a possibly disappointing experience.

**Food prices have risen more than wages and overall inflation**

Percent change from January 2019 to May 2024



Guardian graphic. Source: Company profit growth is calculated using a recent quarterly SEC filing compared to the same quarter two years prior. Companies' quarterly calendars differ, their most recent profits range from late 2023 to early 2024. US workers' wage growth from BLS is the change in the inflation adjusted median weekly earnings of private employees. Food and beverage and inflation figures from BLS. Source: T. Perkins<sup>[10]</sup>

# Problem Statement

---

Despite the fact that dining out offers a rich experience—bringing people together and enhancing social bonding—rising inflation has shifted the behavior of many Americans. With inflation up and restaurant prices increasing by 4.1%, 68% of Americans are now choosing to eat at home.<sup>[8]</sup> This means that people are missing out on new culinary experiences and the well-being benefits of communal dining.<sup>[4]</sup> Furthermore, with the overwhelming number of restaurant choices and generic reviews, finding the perfect dining option has become a risky financial decision, leaving many diners hesitant to explore new venues.

# Problem Characteristics

## High Financial risk:

With restaurant prices outpacing inflation, dining out has become a more expensive and risky decision for the average consumer. In recent years, United States food prices rose by 25%. [11]

## Overwhelming Choice:

Customers experience indecision when selecting dishes, making it difficult to confidently choose meals they will enjoy based on taste.

## Generic Reviews:

Online reviews may not accurately reflect the customer's personal taste, leading to dissatisfaction in the dining experience. About 30% of online reviews are fabricated. [9] How do you know which reviews to believe?

## Group Indecision:

Studies show that group decisions regarding where to eat is heavily influenced by social environment. [12] Can lead to individuals eating at places they don't enjoy just to fit in with the group and avoid conflict.

# Who is Affected

-  **Families** looking for a shared experience without the hassle of cooking
-  **Young Professionals** that don't have the time or skill to cook
-  **Group Organizers** looking for a dining experience that everyone can agree on
-  **Tourists** looking to narrow down a long list of restaurants to match the limited amount of meals they will eat



# Current Process Flow

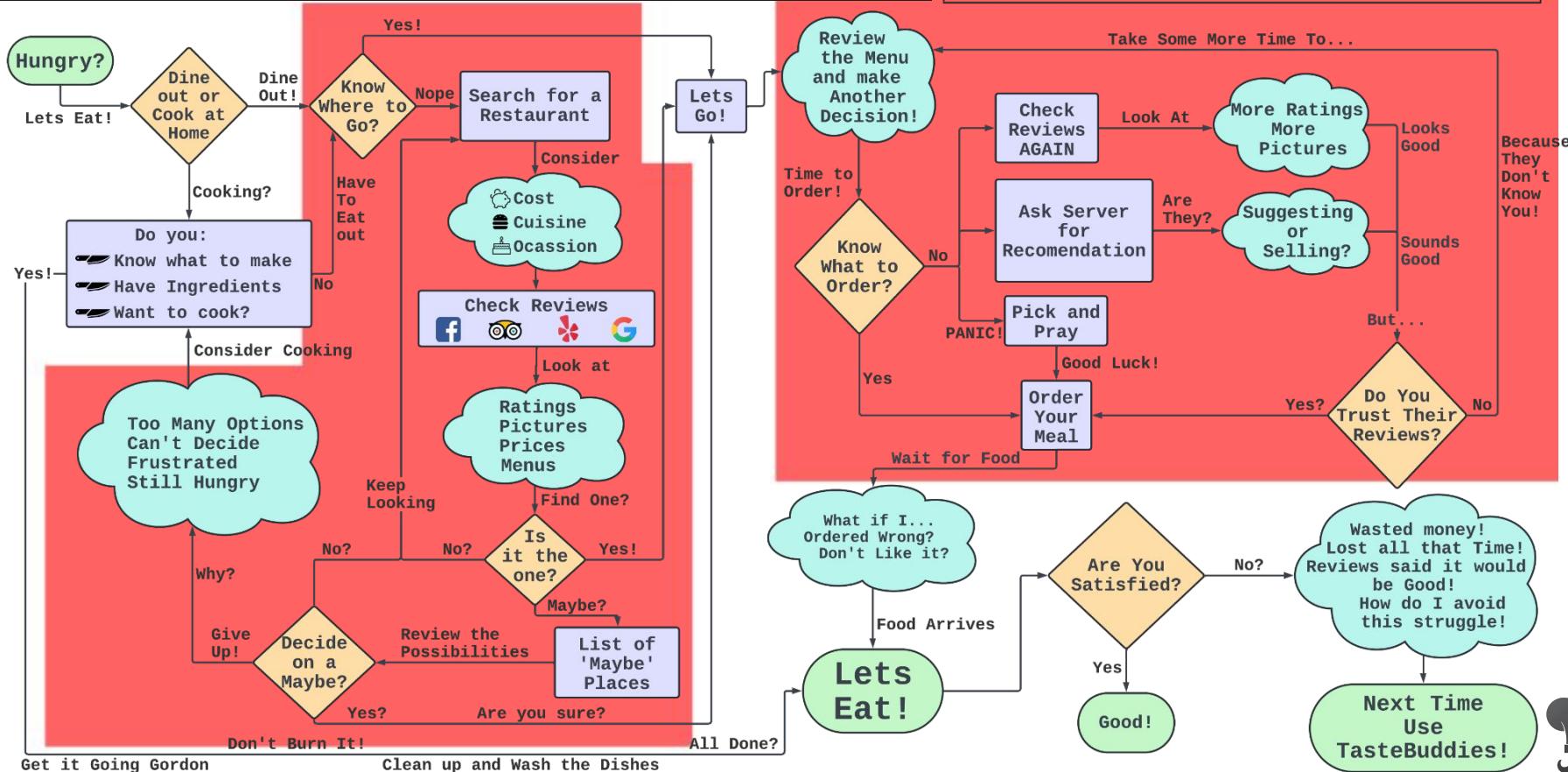
Diagram Key

Start / End

Decision

Consider

Action



# Solution: Dine with confidence

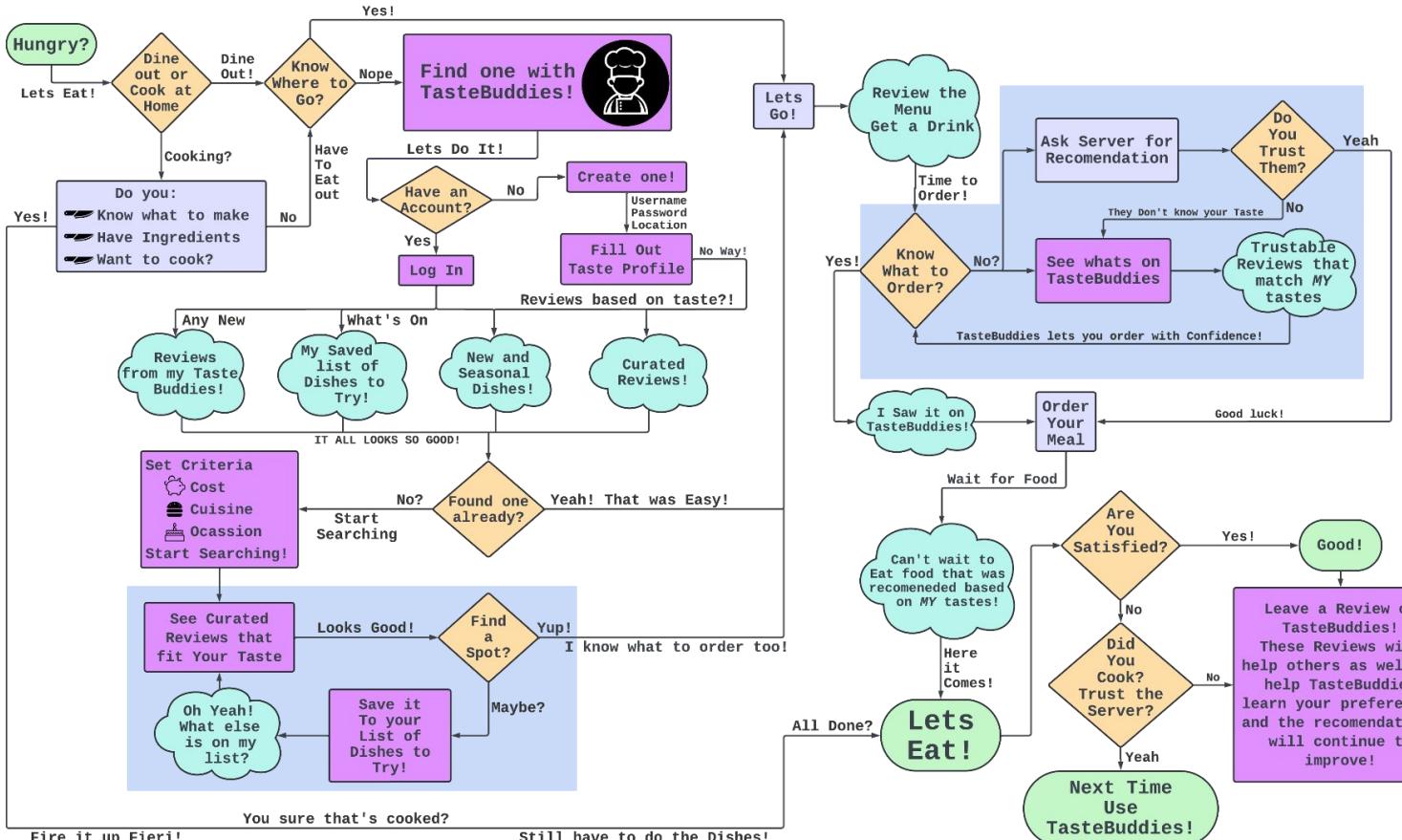
TasteBuddies is a smartphone app that will provide tailored restaurant and dish recommendations based on taste profiles. TasteBuddies will use data clustering to connect users with others who share similar preferences, offering relevant suggestions rather than generic reviews. Instead of guessing if a review is relevant, TasteBuddies users can rely on aggregated data that is catered to their taste.

By using TasteBuddies, diners are more likely to end up with a meal they truly enjoy, while reducing the stress of sifting through irrelevant reviews, enhancing their overall dining experience. Restaurants will also benefit from fewer complaints, less food waste, and happier customers who are more likely to return, give positive reviews, and tip well.

# Solution Characteristics

- 🍔 **Personalization:** Our revolutionary app will provide personalized dish and restaurant recommendations tailored to individual tastes rather than offering a one-size fits all approach
- 🍔 **Tailored Recommendations:** Instead of relying on broad, generic reviews, the app connects users with others who have aligned taste profiles, offering relevant reviews and a customized dining experience
- 🍔 **Customer Satisfaction:** By offering recommendations based on individual preferences, the app helps customers get a better value for their money, and food they truly enjoy, enhancing the dining experience.
- 🍔 **Reduced Waste:** With more accurate recommendations, fewer dishes are sent back due to dissatisfaction, reducing food waste and lost revenue for restaurants.
- 🍔 **Increased Tips:** Happier customers lead to increased tips for working staff and more positive reviews, benefiting restaurant owners and workers

# Solution Process Flow



# Major Functional Components

## Presentation Layer



### User Interface

- Smartphone app
- Web application



### Social Features

- TasteBuddies
- SuperTasteBuddies
- DailyDish Feed  
contains new Dishes  
and Curated Reviews



### Dining Filters

- Location
- Cuisine
- Occasion

## Application Layer



### Web Server



### User Profile Manager

- User registration,  
login and preferences



### Taste Matching Engine



### Recommendation Engine



### Group Dining

- Pair with other users  
for recommendations



### Location Services

- Required for local  
recommendations

## Data Layer



### PostgreSQL Database

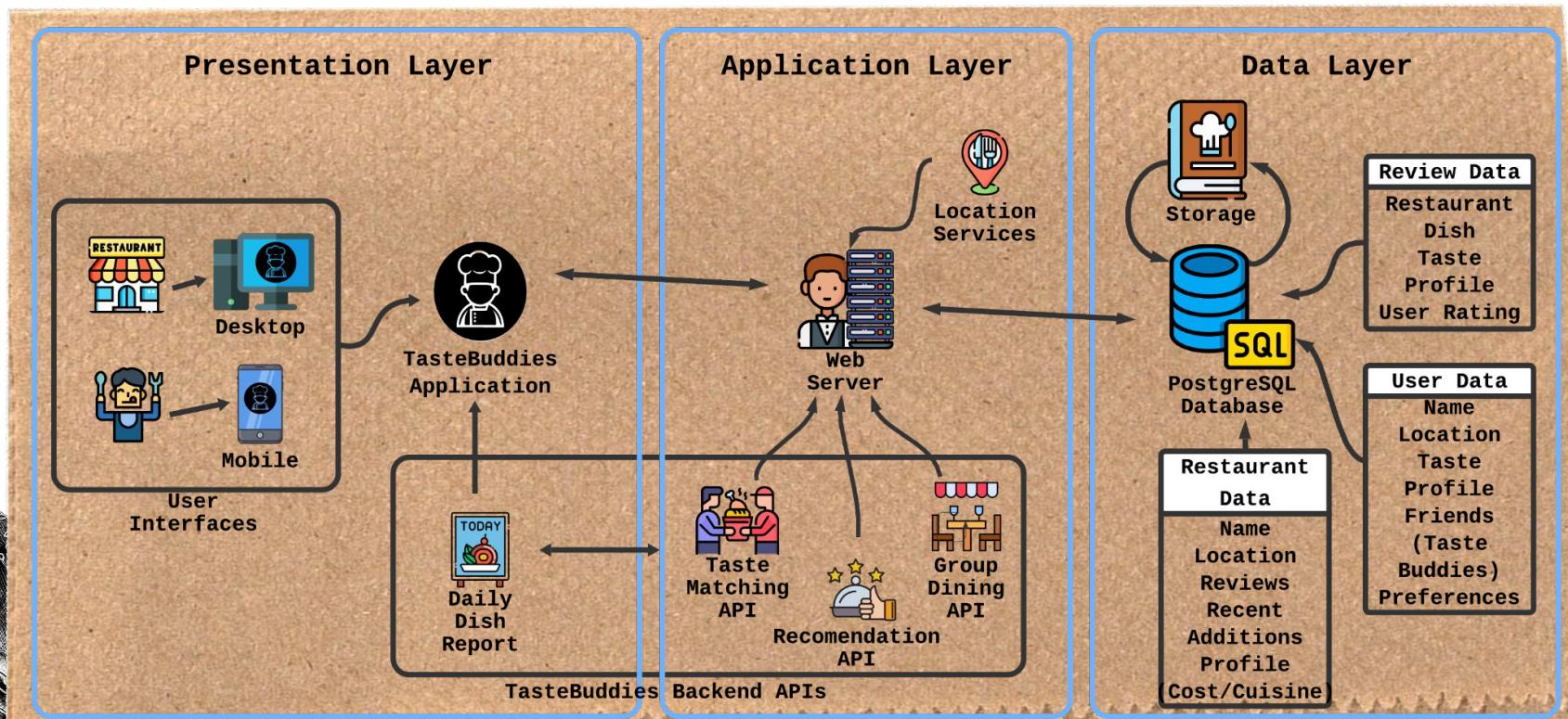
- Review Data
- User Data
- Restaurant Data

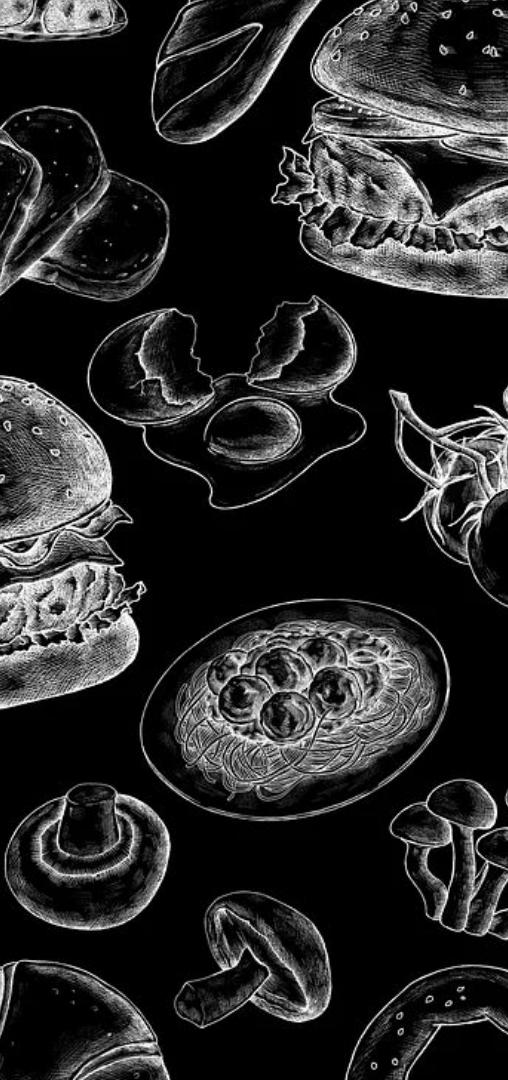


### Storage and CDN

- Images
- Reviews
- Social Posts

# Major Functional Components Diagram





# Kitchen Aids (Development Tools)

**Integrated Development Environment (IDE)** - VSCode

**Version Control** - Git through GitHub.

**Continuous Integration (CI) and Continuous Deployment (CD)** - GitHub Actions & Workflows

**Selected Language (Backend)** - Python and Node.js.

**Selected Language (Frontend)** - HTML, CSS, JS for the site. React Native for mobile app to allow us to hit both IOS and Android market.

**Testing Framework(s)** - PyTest for Python, Jest for JavaScript, and Maestro for UIs in React Native.

**Documentation Tool** - Pydoc for Python, JSDoc for JavaScript and React Native.

# TasteBuddies Will Provide...

---



# ...Social Engagement

- 🍔 **Tastebuddies:** Connect with users who share highly similar taste profiles for accurate suggestions.
- 🍔 **Super Tastebuddies:** Follow taste influencers for expert recommendations in specific cuisines or dishes.
- 🍔 **Opt-in notifications** for seasonal dishes or specials that users loved previously.



# ...Taste Profiles

- Users can select their favorite restaurants and dishes, as well as input their preferences for core taste components, including spicy, salty, sweet, sour, and savory. These preferences will be used to create a personalized taste profile.
- Uses machine learning to continuously refine taste profiles and improve recommendation accuracy.
- Recommendations are based on the collective data of users with similar profiles.
- Filters for allergies, dietary restrictions, and preferred dining experience.

# ...Intelligent Systems

---

-  **Prioritizes reviews and ratings from users with similar taste profiles and preferences, ensuring relevant feedback.**
-  **Match restaurants to fit the preferences of a group, perfect for company dinners or family outings.**
-  **Recommends dishes based on the user's current mood.**

# TasteBuddies Will Not

---

-  Provide recommendations for non-restaurant establishments or experiences
-  Offer health advice or weight loss recommendations
-  Prioritize generic reviews from all users
-  Offer food delivery or pick up
-  Offer budgeting tools

# Competition Matrix

Feature	TasteBuddies	yelp*	Tripadvisor	Google	facebook	Foodaholix
Taste Profiles	chef					
Personalized Dish Recommendations	chef					
Lifestyle Personalization	chef	chef				
Restaurant Reviews	chef	chef	chef	chef	chef	
Dish Review	chef					chef
Followers	chef	chef			chef	chef *
Restaurant Notifications	chef				chef	chef
Group Restaurant Matching	chef					



# Steakholders



# Local Economy Feasts on Diners

Respondents of the OnePoll study say that restaurants help boost their local economies by:



Source: OpenTable Restaurant Impact Report [13]

## Stakeholders



Restaurants attract more visitors.



Increased foot traffic supports surrounding businesses, creating a positive effect in the local economy.



The more guests enjoy their dining experience, the more likely they will spend impulsively.<sup>[14]</sup>



# Community Wellbeing



## Stakeholders

- 🍔 **People** will be encouraged to eat out more, increasing socialization and wellbeing, promoting a sense of wellbeing when connected to the community whilst reducing social isolation [4] [15]
- 🍔 **Local event organizers** may have options of where to hold their event or eat thereafter, increasing community bonds while bolstering the local economy.



# Restaurants win



## Customers



- Increased Customer Satisfaction
- Less Food Waste
- Increased Revenue
- Potential for regular clientele
- New Dishes land
- Targeted Client Outreach
- Subscription allows notifications about featured dishes and other updates



# Everyone Eats, and Everyone Wants to Eat Well.

## Users



### Adventurous Eaters

People looking to try new things and explore different cuisines.



### Conservative Eaters

Users who prefer familiar foods but may be in a new location and want reliable recommendations.



### Travelers

Travelers spend 25% of their budget dining out<sup>[16]</sup>

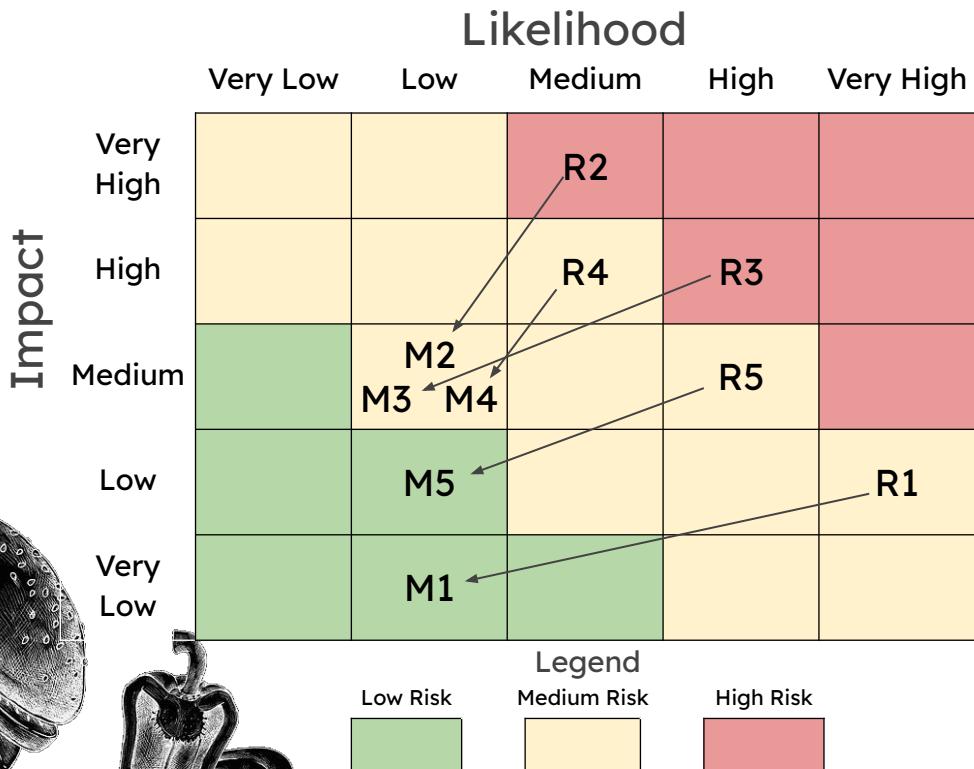


### Foodies

Whether looking for a new place to review, post on your blog, or just please your buds, TasteBuddies has you covered.



# User Risk Matrix



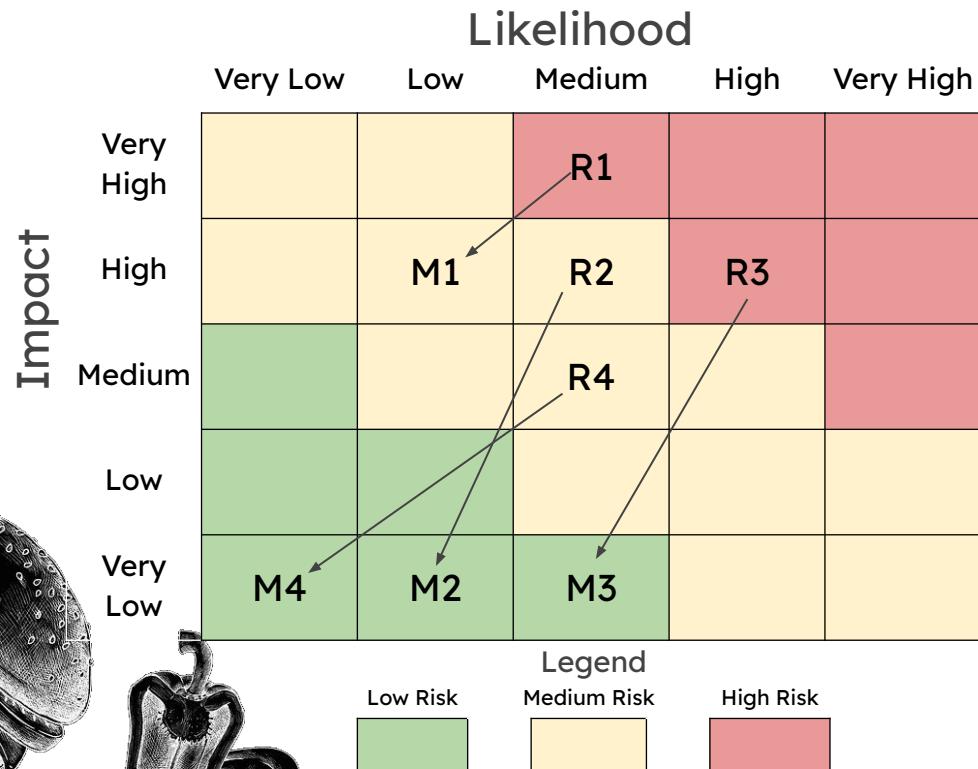
## Risks

- R1: Fake Profiles and Reviews
- R2: User satisfaction with their recommendations
- R3: User Participation and Retention
- R4: Users evolving taste preferences
- R5: Users not wanting to share data

## Mitigations

- M1: Require users to tie accounts to phone numbers and ban phone numbers from websites that provide temporary phone numbers
- M2: Allow user feedback on recommendations
- M3: Implement milestone-based Badges and rewards system for leaving reviews, and send reminder notifications to encourage participation
- M4: Allow users to update preferences and periodically prompt users for updates, “Do you still like...”
- M5: Allow users to opt in or out of data collection for specific features

# Customer Risk Matrix



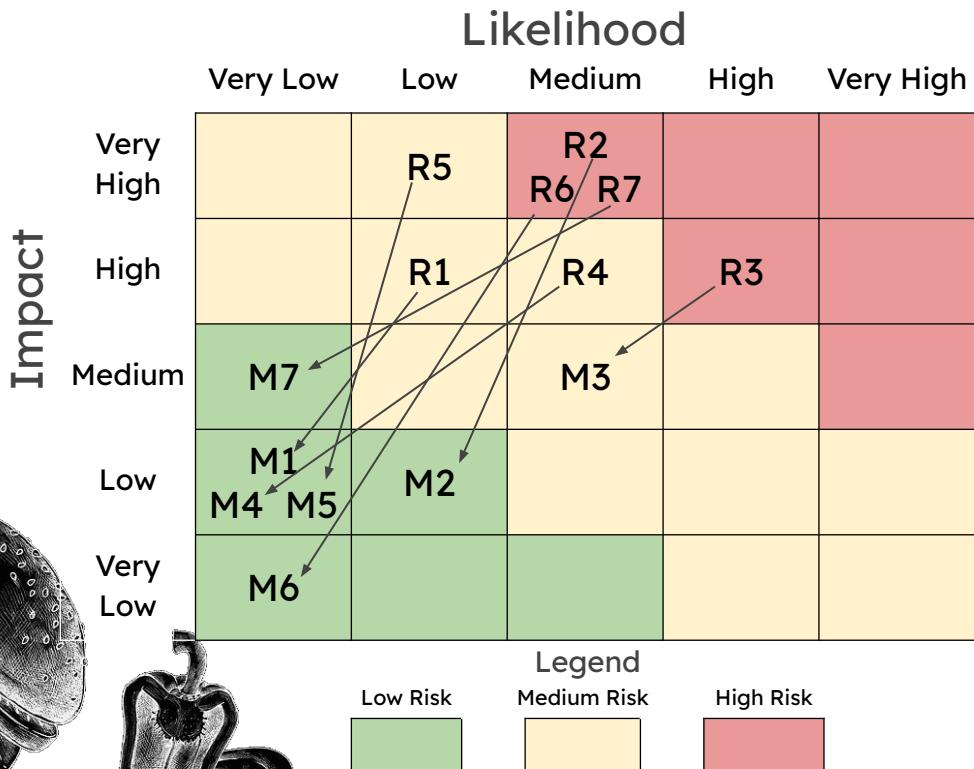
## Risks

- R1: Restaurants won't upgrade to premium accounts
- R2: Matching with closed restaurants
- R3: Matching with outdated dishes
- R4: Users may feel overwhelmed by excessive notifications

## Mitigations

- M1: Offer trial subscription to premium accounts and data-driven insights for the success of other restaurants with premium accounts
- M2: Enable users to report a restaurant closure with a review process to prevent misuse, as well as reviews triggered by events (ending subscription)
- M3: Enable user feedback as well as send periodic reminders to restaurants to verify dish availability
- M4: Allow users to customize notification settings Limit notifications restaurants can send based on subscription tier

# Technical Risk Matrix



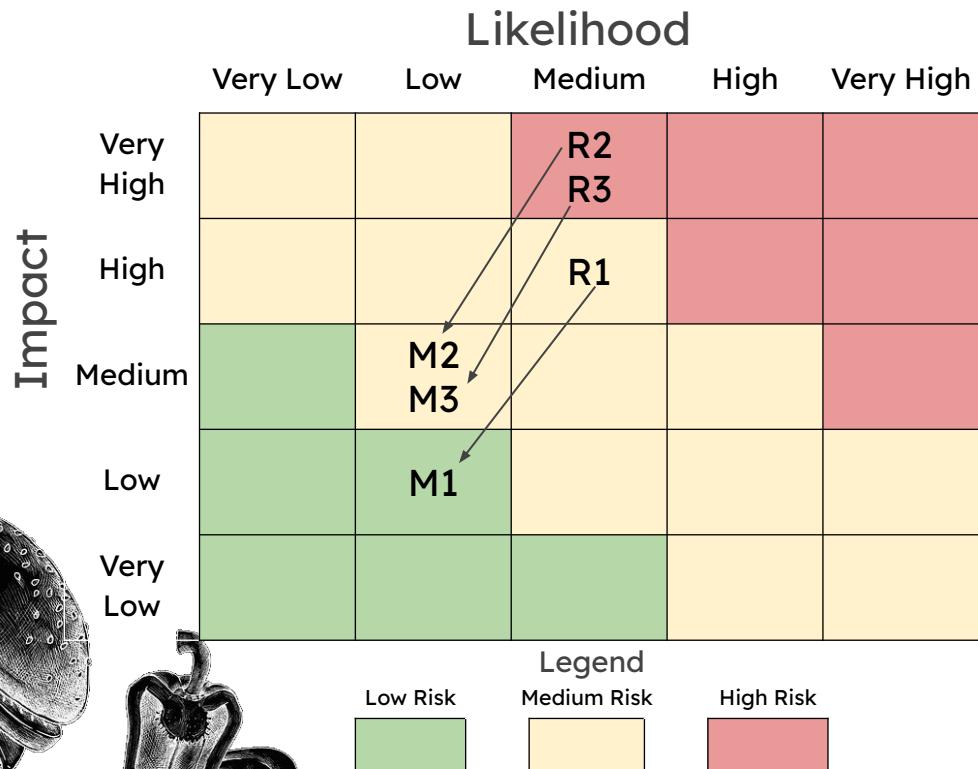
## Risks

- R1: Inaccurate recommendations due to error in algorithm
- R2: Not enough users to create a reliable database
- R3: Credentials / Data Compromisation
- R4: App performance issues
- R5: Server downtime
- R6: User refuses location services
- R7: Loss of Cell/Internet Connection

## Mitigations

- M1: User feedback forwarded to development team to improve algorithm
- M2: Conduct an initial survey among foodies/employees to populate data
- M3: Use Best Practices for Cybersecurity
- M4: Optimize codebase for speed and efficiency
- M5: Use reliable hosting services with automatic failover and scaling capabilities. Implement backup and recovery plan
- M6: Allow user to search by Zip Code or City
- M7: Notify user, store recent suggestions in cache

# Legal & Security Risk Matrix



## Risks

- R1: Civil lawsuits against the app including potential user disputes or trademark violations
- R2: Data privacy regulations and potential mishandling of user data
- R3: Allergens not listed in dish description

## Mitigations

- M1: Detailed terms and conditions for both users and restaurant that must be agreed to before use.
- M2: Obtain explicit user consent in the initial terms and conditions before collecting any personal information to ensure compliance with data privacy laws, including GDPR, CDPD, and the Privacy Act of 1974
- M3: Require restaurant provided dishes to be tagged with any allergens. User submitted dishes will be tagged as 'Unverified Allergens' until the restaurant provides appropriate tags

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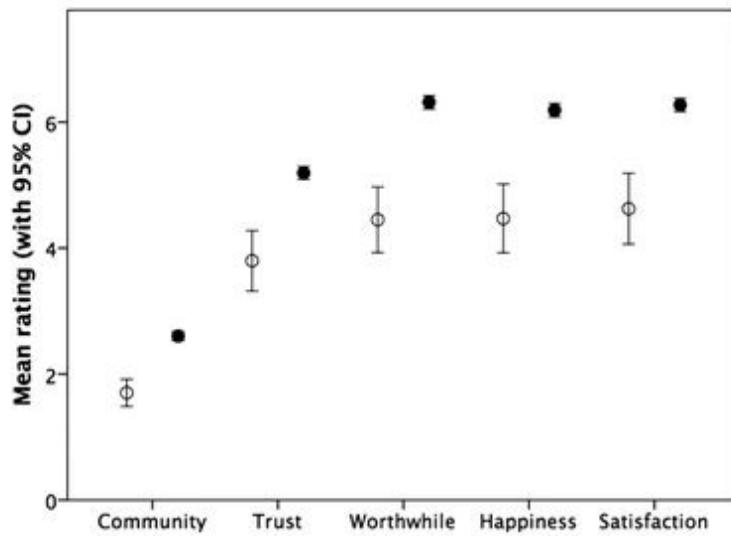
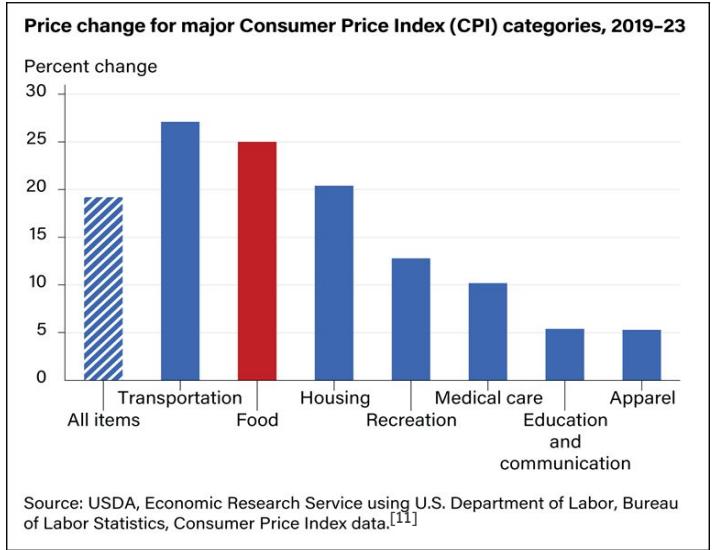


# TasteBuddies



# Thank you

# Appendix



Mean rating (with 95% confidence interval)  
Open symbols represent those who always eat evening meals alone.  
Close symbols are those who at least sometimes ate with others.<sup>[17]</sup>