UHUNGRY? Food Service Application

CSC431 | Introduction to Software Engineering

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Our Team

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Developer

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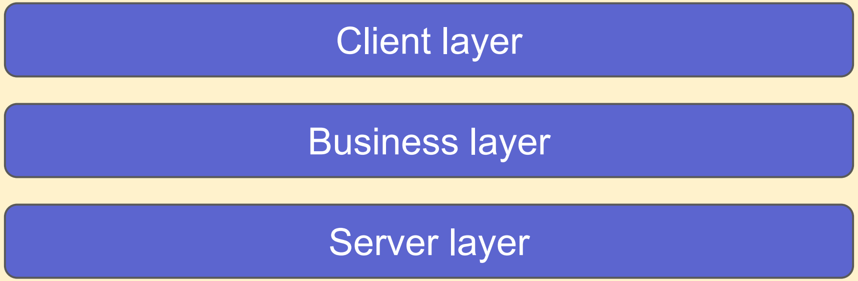
Developer

Product Overview

- Mobile application (IOS and Android)
- Similar to Waze (Wait Times & Traffic for food locations)
- Powered entirely by users
- Universities/On campus
- Need a big enough user base
- Users must register in order to use UHungry?
- Users self report time depending on (# of people and average order time. Lots of Data to be collected)
- Access to all food locations on campus (including frequent food trucks)

System Overview

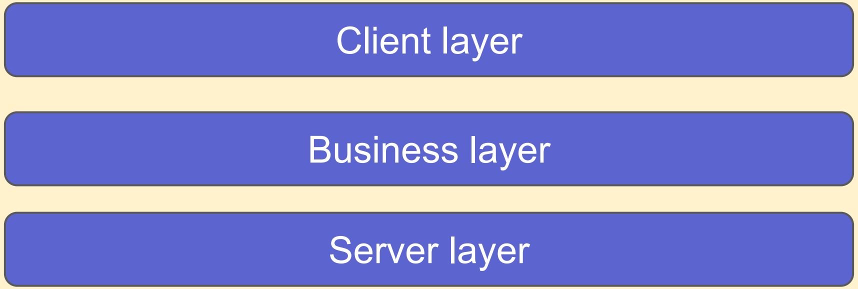
- Three-tier architecture: client layer, business layer, and service layer
- Client layer: Composed of the UI layer (Flutter) to create widgets and is connected to MySQL within the business logic layer
- Business layer: where application logic occurs (Ex: algorithm, location cards, filtering feature)
- Service layer: Uses Amplify package to read in and store data (GraphQL) and to handle functions like registration, login, authentication and security (AWS Cognito)



Why a 3-tier architecture system was chosen?

- A business logic layer allowed for ease when interacting between the client and the database
- Highly compatible frameworks (Flutter: front-end and AWS Amplify: backend)
- Flutter allows us to develop application for IOS and Android devices simultaneously
- AWS Amplify allows for the integration of many AWS API's to increase functionality within the business layer

Flutter



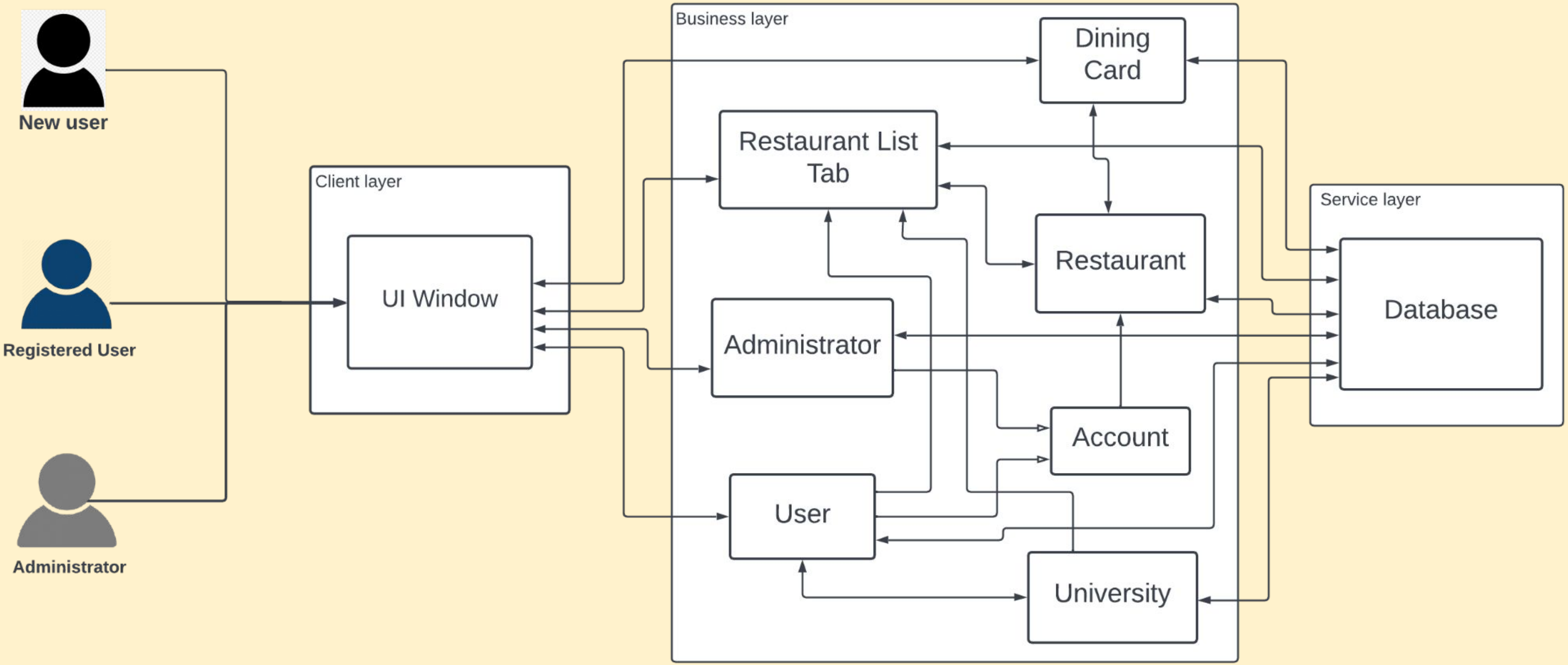
Client layer

Business layer

Server layer

AWS Amplify

System Diagram

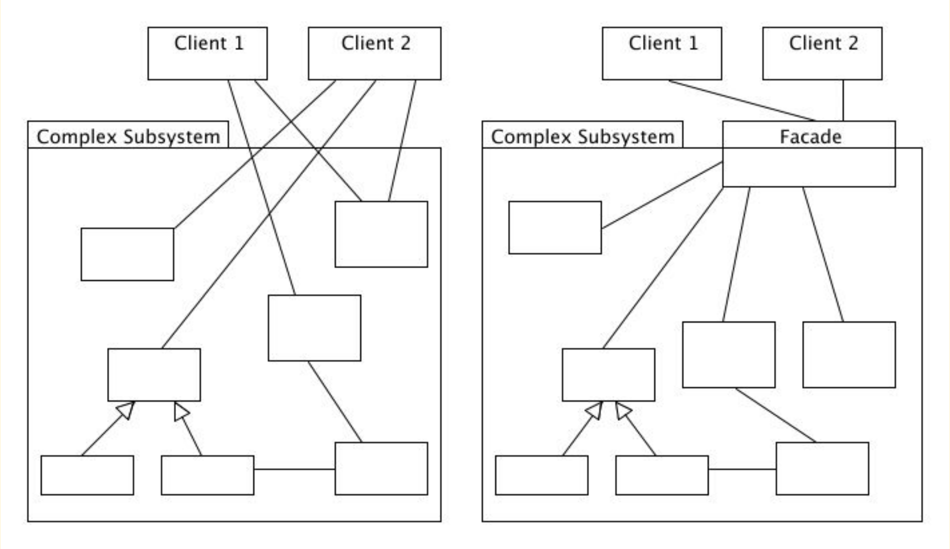


Actors Identification

- New user
- Registered user
- Administrator

Why the Facade Design Pattern?

- UI simplicity allows the user for the most ease when navigating by providing a a simpler, unified interface
- Limits user's accessibility to all components of application



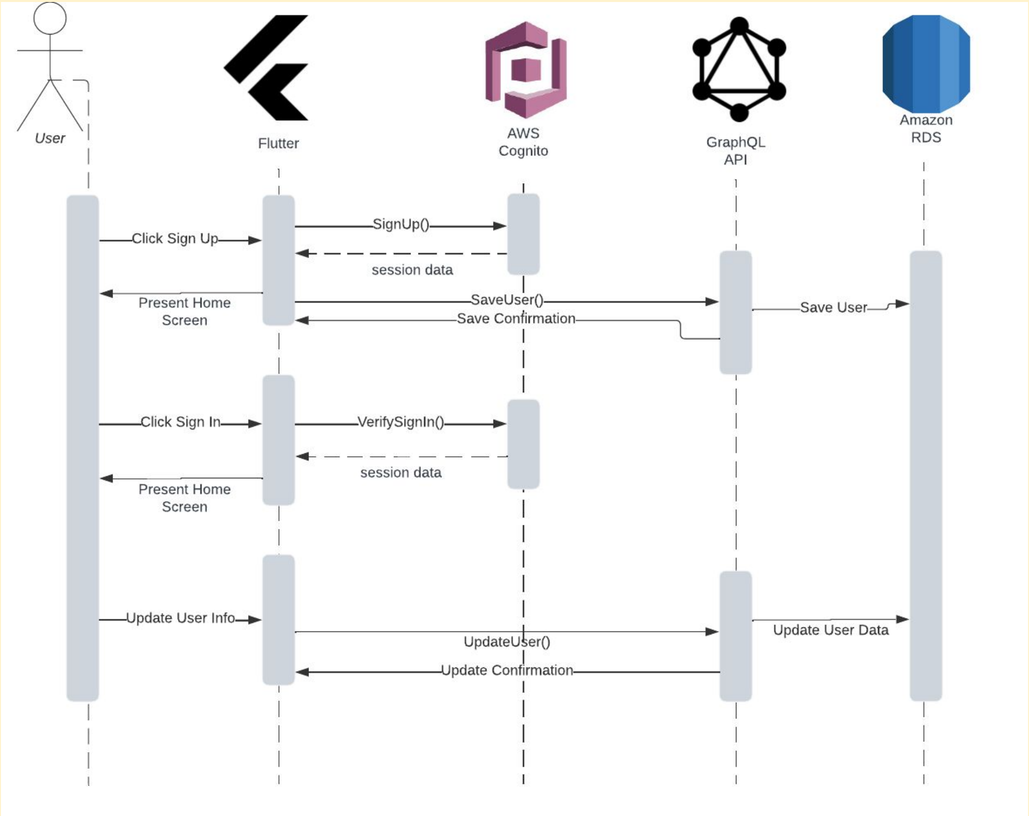
Why use the Flutter framework?

- Flutter as a front end framework allows us to deploy on IOS and Android simultaneously
- Dart syntax is very similar to Java
- “hot reload” functionality for development and debugging
- Comparable app performance to other frameworks (REACT)
- Allows for complex animation in UI

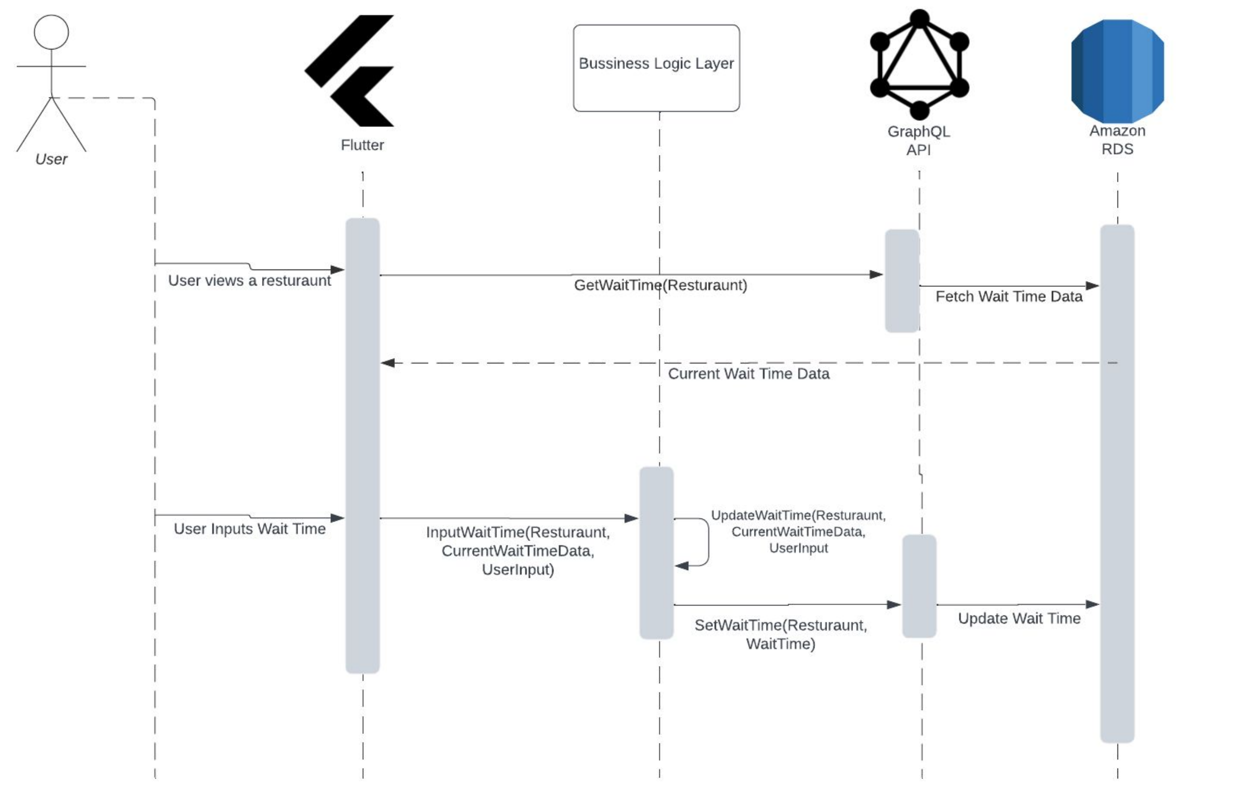
Why use the AWS Amplify framework?

- AWS Amplify allows for seamless integration of many AWS cloud services
    - User authentication (AWS Cognito)
    - Data Storage (Amazon RDS)
    - API (GraphQL)
    - Push Notifications
- “amplify_flutter” package allows for full compatibility with our Flutter front end
- AWS servers are highly scalable and can handle heavy amounts of traffic
- Saves development time compared to building a back end from scratch

Sequence Diagram - User Actions

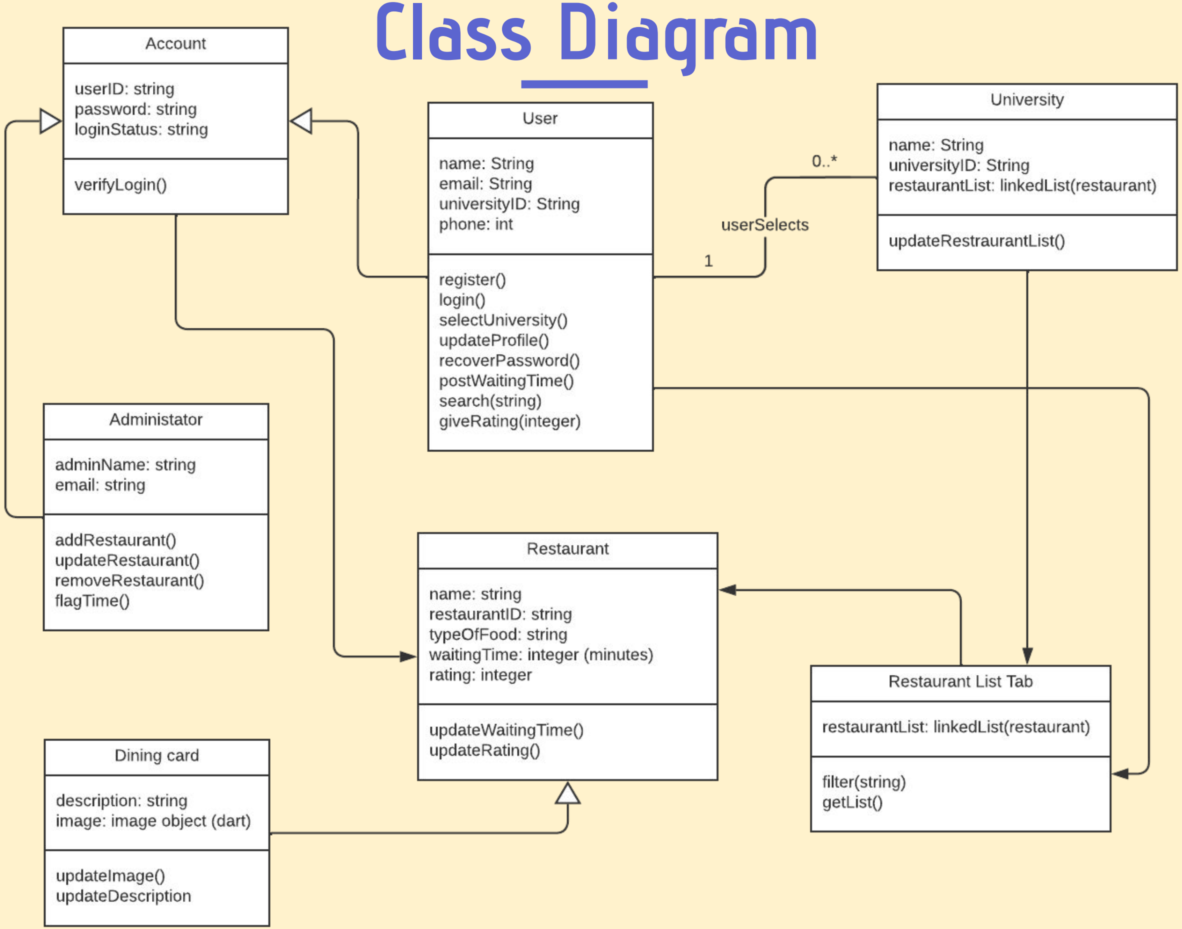


Sequence Diagram - Wait Times



UHUNGRY? UML Class Diagram

Class Diagram



Account

userID: string
password: string
loginStatus: string

verifyLogin()

User

name: String
email: String
universityID: String
phone: int

register()
login()
selectUniversity()
updateProfile()
recoverPassword()
postWaitingTime()
search(string)
giveRating(integer)

University

name: String
universityID: String
restaurantList: linkedList(restaurant)

updateRestraurantList()

Administator

adminName: string
email: string

addRestaurant()
updateRestaurant()
removeRestaurant()
flagTime()

Restaurant

name: string
restaurantID: string
typeOfFood: string
waitingTime: integer (minutes)
rating: integer

updateWaitingTime()
updateRating()

Restaurant List Tab

restaurantList: linkedList(restaurant)

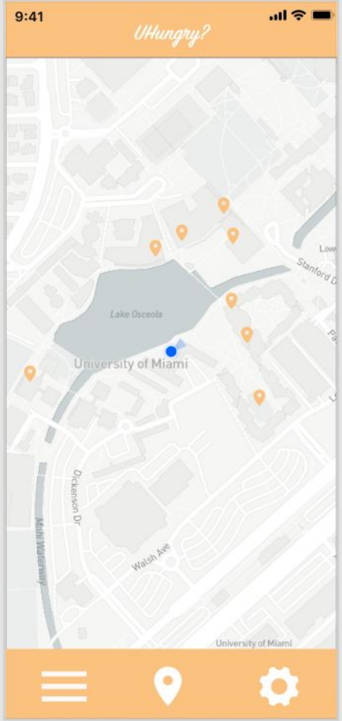
filter(string)
getList()

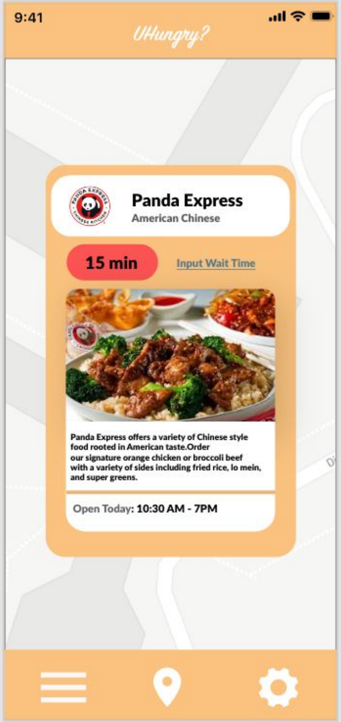
Dining card

description: string
image: image object (dart)

updateImage()
updateDescription

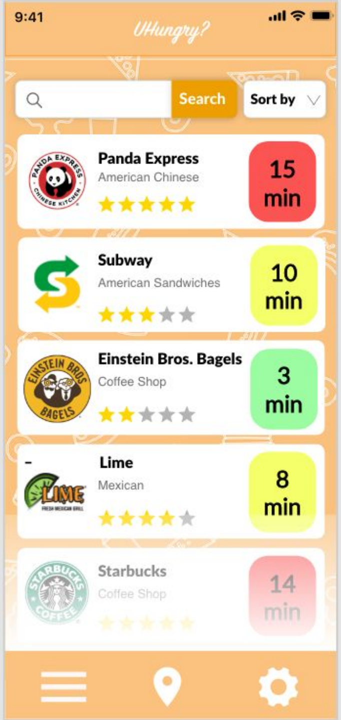
Project Demo





Panda Express offers a variety of Chinese style food rooted in American taste.Order our signature orange chicken or broccoli beef with a variety of sides including fried rice, lo mein, and super greens.

Open Today: 10:30 AM - 7PM



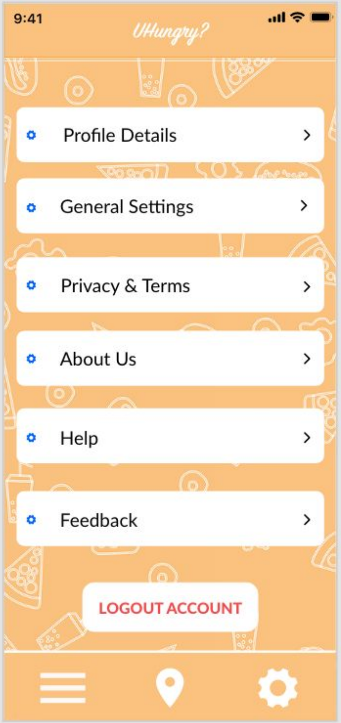
Panda Express
American Chinese
★★★★★
15 min

Subway
American Sandwiches
★★★★★
10 min

Einstein Bros. Bagels
Coffee Shop
★★★★★
3 min

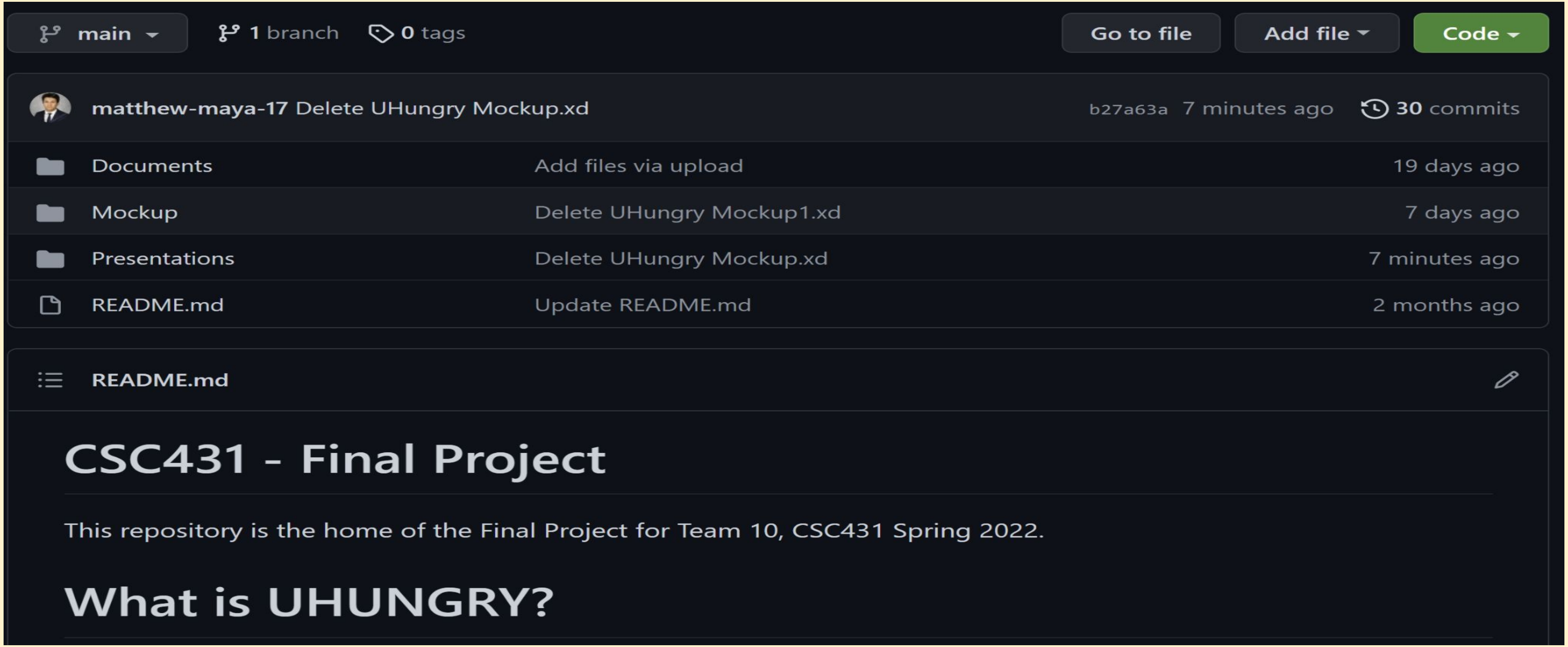
Lime
Mexican
★★★★★
8 min

Starbucks
Coffee Shop
★★★★★
14 min



GitHub

- https://github.com/matthew-maya-17/CSC431



matthew-maya-17 Delete UHungry Mockup.xd b27a63a 7 minutes ago 30 commits

Documents	Add files via upload	19 days ago
Mockup	Delete UHungry Mockup1.xd	7 days ago
Presentations	Delete UHungry Mockup.xd	7 minutes ago
README.md	Update README.md	2 months ago

README.md

CSC431 - Final Project

This repository is the home of the Final Project for Team 10, CSC431 Spring 2022.

What is UHUNGRY?