SoftDev P02: Makers Makin' It, Act I
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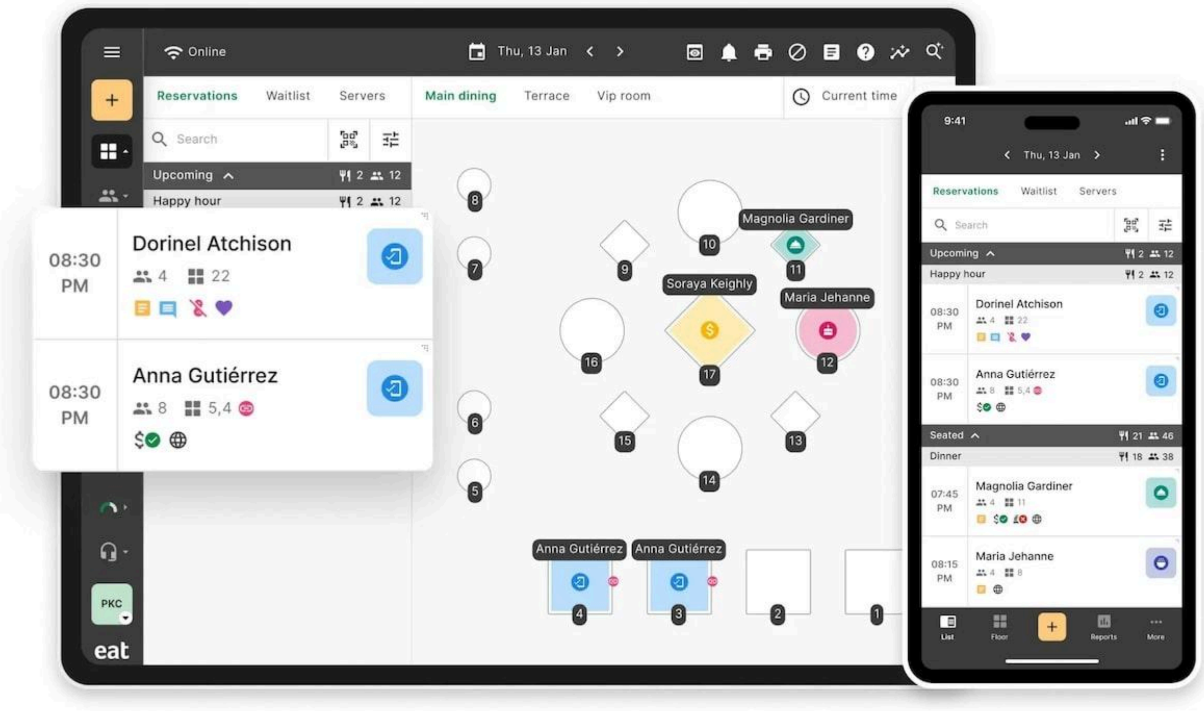
TARGET SHIP DATE: 2025-01-17



Overview

Restaurant reservation website for customers and managers. Must login/register with email and password. On the customer side, users can view the list of restaurants. From there, they can select a restaurant and make a reservation by entering the number of people they expect to bring and the time. The website shows all available tables, from which they can claim one by clicking on it. On the manager side, users can view the list of their restaurants, set up the layout of each one (place tables, customize the number of seats at each table), and view reserved tables.

Program Components

- Login Page
    1. Two types: Manager Account and Customer Account
    2. Email & Password login format
- Register Page
    1. Register for a new account as either manager or customer
    2. Same system as login
- Home Page

    - Once logged in, a customer could select and search for a restaurant by name, and then click on it to go to the restaurant page itself.
    - A manager could view their own restaurant and create/edit parts of it, as well as view the status of their tables.

- Algorithm for managing reservations
    1. Each restaurant is set up with a “time between reservations” variable. This variable represents the gap between each consecutive reservation at each specific table. For example, if Alice reserved table 8 at 9 AM, Bob can't reserve table 8 until 9:30 AM if the variable is set to 30 minutes.
    2. Returns a list of all available times when there exists at least 1 available table with minimum capacity >= number of people expected from reservation.

- If logged into Manager Account, users can:
    1. Create a restaurant
        - Enter restaurant name, opening time, closing time, time between reservations (minutes)
    2. Manage existing restaurant
        a. Set up restaurant layout
            - Layout is a 2D coordinate grid. Add a table to the grid by dragging and dropping it into the desired cell and entering the number of seats at that table.
        b. View the info of already processed reservations
            - Email of the account that made the reservation, how many people expected, time reserved, table ID

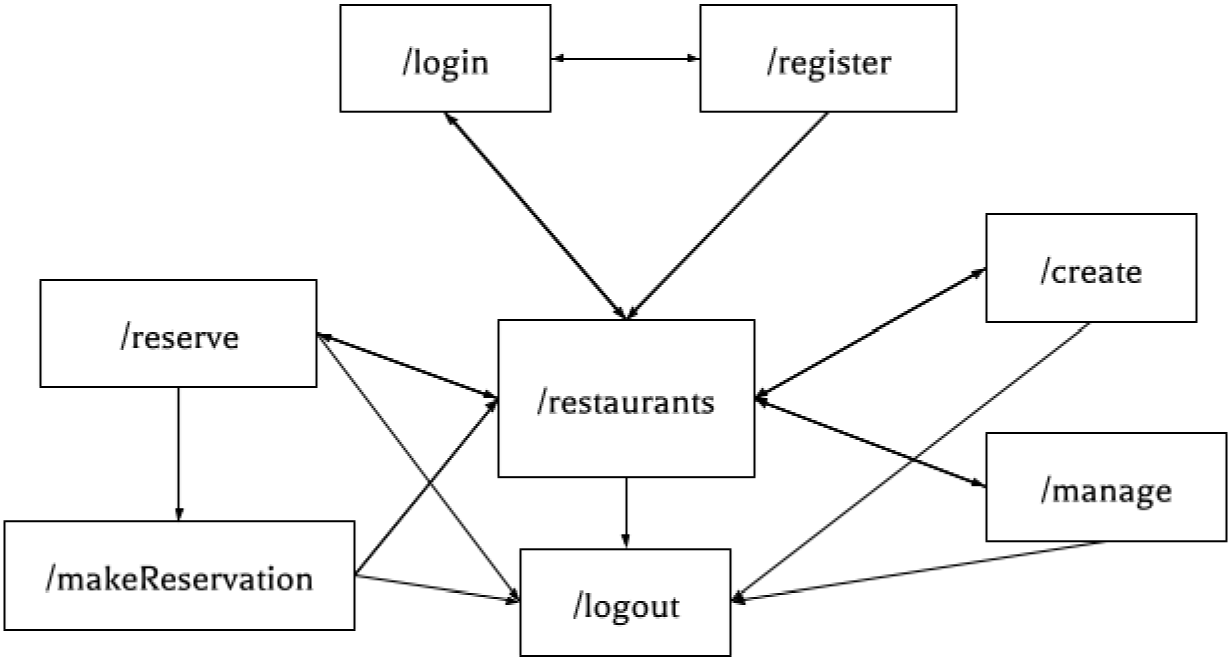
- If logged into Customer Account, users can:
    1. Select a restaurant from the list to make a reservation at.
    2. Enter the date, time, and number of expected people for the reservation.
    3. Select table to reserve, prompted by our algorithm.
    4. Be notified if the reservation was successful.

- Python/Flask components:
    1. We will have a main python file that will run the entire python-flask interaction. This will also run our algorithms and decide which site to display per type of user.
    2. Other python files will allow for interaction with the databases for both customers and managers.

Component Map

```
Frontend (HTML/CSS/Bootstrap/JS)
   |
   v
Backend (Flask) --> login/register/logout
   |
   +-- SQLite Database
   |      - User table
   |      - Restaurant table
   |      - Tables table
   |      - Reservations table
   |
   +-- Functions for managing restaurant creation/setup
   +-- Functions for making reservations
```

Site Map



Database Organization (Column names with grey background, entries without)

- User Database

email	password	type
Topher@gmail.com	*********	customer
Mykolyk@hotmail.com	*********	owner
...	...	...

- Restaurants Database

Restaurant Name	Open Time (military)	Close Time (military)	Time Between Reservations (minutes)	Owner User
Berri's Berries	8	18	30	Mykolyk@hotmail.com
#GUDFAM Bagels	7	19	62	Mykolyk@hotmail.com
...	...		...	...

- Tables Database

Table ID	Restaurant ID	Number of Seats	XCoor	YCoor
23	37	2	1	1
2	12	3	3	3
...	...	...	4	2

- Reservation Database

Reserver User	Table ID	Number of People	Time (military)
Topher@gmail.com	23	2	9
Topher@gmail.com	2	2	17
...	...	...	...

APIs

- We do not plan on using any APIs.

Front-End Framework: Bootstrap

Why

Bootstrap is versatile and easy to use and comes with many predefined elements. Its designs automatically adjust to different screen sizes and are highly customizable, and do not depend on CSS as much as the other FEFs do.

How

We plan to use the following Bootstrap elements:

- Top navbar to navigate the site
- Forms for login, registration, restaurant creation, reservations
- List groups to neatly display list of restaurants

Task Assignments

Victor - Database and JS Lead

- Create database and create functions to add / modify / get data
- Add JavaScript features to make pages interactive

Andy - Python implementation from Databases/Flask

- Integrate databases within python and create access methods
- Make flask implementation using methods
- Focus on customer and manager specific methods

Chongtian - Flasky PM

- Facilitate seamless collaboration
- Manage Timelines
- Ensure Clear and Consistent Communication
- Work on back-end functionalities with Flask

Anastasia - Frontend Development

- Design responsive HTML pages with Bootstrap styling