



# DineWise



Team 2 Pace Super Giants



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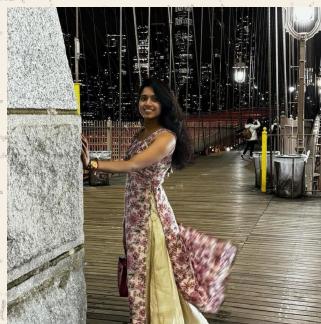
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# OUR TEAM



★ **Deekshitha  
Navuluri** ★

Full Stack Developer



★ **Panguluri  
Bhavya** ★

Product Designer /  
Frontend Developer



★ **Phanindhr  
Thota** ★

Frontend Developer

# OUR TEAM



★ **Manoj Kumar  
Ambavarapu** ★

Scrum Master /  
Backend Developer



★ **Sai Mahesh  
Sandeboina** ★

Machine learning  
Engineer

# Project Description

Project Name:	DineWise
Team:	Pace Super Giants
Project Description:	<p>For restaurant customers who wants personalized menu and even dynamic pricing options, the solution is the website which is machine learning based recommendation and handling dynamic pricing and this is an AI powered website that provides dishes based on your preference and pricing based on the demand unlike regular classic restaurants where they have single menu and even static pricing our application will provide personalized dine in experience with dynamic pricing.</p>
Benefit Outcomes:	<ul style="list-style-type: none"><li>• This will improve the customer satisfaction rate through personalized dishes and on demand based pricing.</li><li>• This will even increase the revenue for the restaurant.</li><li>• This will even the operations for the restaurant efficient.</li></ul>
Github Link:	<a href="https://github.com/htmw/2024F-pace-super-giants/wiki">https://github.com/htmw/2024F-pace-super-giants/wiki</a>

# Team Agreement

## Team Collaboration Agreement

### Purpose:

This document outlines the expectations, roles, and code of conduct for our 5-member team and sets priority for a positive, collaborative, and productive work environment. It will create the basis on which we will interact with each other to reach our goals for the project.

### Guiding Principles:

#### 1. Respect and Communication

**Respect:** All ideas, opinions, and contributions of every team member shall be valued. We will maintain the atmosphere of professionalism and support.

**Open Communication:** There shall be proper, straight forward, and timely communication. Any team member can share whatever they think, feedback, or any concern that comes to their mind.

**Constructive Feedback:** Regular feedback and at all times for the betterment of each other.

#### 2. Roles and Responsibilities

Specific roles within the team will be assigned to each member, based on individual strengths and experience.

The roles can change as time progresses, since project needs will change. Any role should be subject to discussion and agreed upon among the team members.

#### 3. Meetings and Communication Channels

**Weekly Meetings:** Our team shall meet once a week every Saturday at 3 pm for a full project update.

**Daily Sync:** A light check-in every day on Slack at 10 pm to take a call on immediate progress and blockers of the day.

**Agenda:** An agenda for the meeting shall be shared at least 24 hours in advance of each meeting by the team lead so that everyone comes prepared to the meeting.

**Attendance:** All members shall be present in each and every meeting. In case a member needs to miss any meeting, the member needs to be intimate in advance. Also, the member needs to go through the summary of the meeting shared on Slack. **Primary Communication Channel:** Slack will serve as our main communication channel, where the flow of information, discussion, and notifications will be shared.

#### 4. Decision-Making Process

**Consensus-Based Decisions:** Most decisions will be made through consensus as a means of keeping everyone's opinions heard.

**Majority Vote:** If we cannot reach a consensus, there will be a majority vote.

**Documentation:** Key decisions are to be documented down on Slack for reference and transparency.

#### 5. Conflict Resolution

**Open Discussions:** Any kind of conflict or misunderstanding will be discussed openly and resolved respectfully among the team members.

#### 6. Task Allocation and Management

**Task Assignment:** Tasks will be assigned by expertise and workload balance to ensure an equal amount of responsibilities.

**Flexibility:** Group members can seek help and/or redistribute the tasks among themselves if someone feels overwhelmed.

**Tools:** We will be using GitHub for version control and Slack for updating on task management.

#### 7. Performance and Feedback

**Weekly Performance Reviews:** Individual and team performance will be reviewed each week in order to keep aligned with project goals.

**Continuous Improvement:** Regular sessions of constructive feedback will enable us to identify the problems at an early stage and fine tune our approach with time.

#### 8. Change in Agreement

**This is a living agreement:** hence, the team has reserved the right to change it at any time if needed. Proposed changes will be discussed and mutually agreed upon by all parties concerned.

#### Team Members

1. Deekeshitha Navuluri
2. Bhavya sri Panguluri
3. Manoj kumar Ambavarapu
4. Sai mahesh Sandeboina
5. Phanindhr Thota



# Sarah

- ★ Age: 29
- ★ Occupation: Fitness Instructor
- ★ Goals: Sarah is always looking for healthy meal options that fit her dietary restriction (gluten-free, low-carb) while exploring new dishes.
- ★ Frustrations: Most restaurant menus are not customized for her dietary needs, making it harder for her to find suitable dishes or restaurants.
- ★ How the app helps: The app provides personalized menu suggestions based on her dietary preferences and tracks her past orders, offering healthy options without the need for constant searching.



# David

- ★ **Age:** 45
- ★ **Occupation:** Restaurant Owner
- ★ **Goals:** David wants to increase customer satisfaction and optimize pricing strategies to boost profitability during peak and off-peak hours.
- ★ **Frustrations:** Struggles with pricing static menus efficiently, as well as managing inventory and customer preferences.
- ★ **How the app helps:** The app uses dynamic pricing to adjust menu prices based on demand and time of day, while also offering personalized menu suggestions to customers, helping David increase sales and reduce food waste.



# Emily



**Age:** 21

**Occupation:** College Student

**Goals:** Emily wants to enjoy meals at restaurants without exceeding her budget, especially during social outings with friends.

**Frustrations:** High prices during peak times make dining out expensive, and she struggles to find good deals or discounts.

**How the app helps:** The app provides Emily with meal recommendations based on her preferences and budget, while offering her dynamic discounts based on off-peak times or restaurant promotions.

# MVP

- ★ **User and Restaurant Onboarding**
  - **Customer and Restaurant Sign-up:** Email and social login (Google).
  - **Basic Profile Setup:** Customers set dietary preferences, restaurants onboard basic menu.
- ★ **Authentication & Login**
  - **Login/Sign-up:** Simple email/password or social login.
  - **Session Management:** Basic secure login flow.
- ★ **Personalized Menu Recommendations**
  - **ML-powered Recommendations:** Personalized dish suggestions based on customer preferences.
- ★ **Dynamic Pricing**
  - **Real-Time Price Updates:** Dish prices adjust dynamically based on demand and time of day.
- ★ **Basic Order Flow**
  - **Add to Cart & Checkout:** Users can select dishes, view cart, and place orders.



# Technologies



## Languages

- TypeScript
- Python
- NoSQL



## Frameworks

- ReactJS
- Node JS
- Flask
- Pytorch



## Tools

- Github
- MongoDB
- Trello
- Azure
- Slack

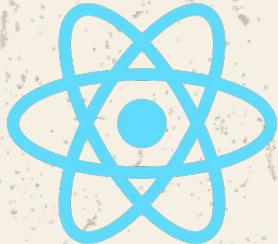
# Languages



- ★ TypeScript is subset of Javascript with static typing, that makes the code easy to debug. It is useful in this project, as it code reliable and good for large scale projects and it's used for developing client side as well the server side of the application
- ★ Python is high level programming language and its known for its readability and for this project is it used for developing machine learning models and models API.
- ★ NoSQL is a database, where data storing is flexible. Schema less format like key value store. This is efficient in storing user profiles, past orders and many.

# Frameworks

- ★ ReactJS its a Javascript library which is used for building UI and for single page applications.
- ★ NodeJS is a Javascript runtime which allows to build scalable applications and for this project it is used for handling APIs requests and managing connection between client and server side.
- ★ Flask is lightweight python framework and for this project is it used for building Machine learning API.
- ★ Pytorch is deep learning library and it is used for building deep learning models for this project.



# Tools



- ★ Github is a platform used for version control and collaboration. In this project it is used for tracking the code and manage the code base.
- ★ MongoDB its a NOSql data and its used for storing the data.
- ★ Trello is project management tool using boards and cards and for this project it is used for track progress and managing tasks.
- ★ Azure is a cloud computing platform where the website services are hosted.
- ★ Slack is a communicable tools which is designed for teams and for this project, it is used for communication among team members.

# Algorithms



## Neural Collaborative Filtering (NCF)

This Algorithm is just combining the traditional collaboration approach with neural networks. NCF captures the complex patterns with users needs and how they interact based on that, it recommends the dishes.



## Deep Reinforcement Learning (DRL)

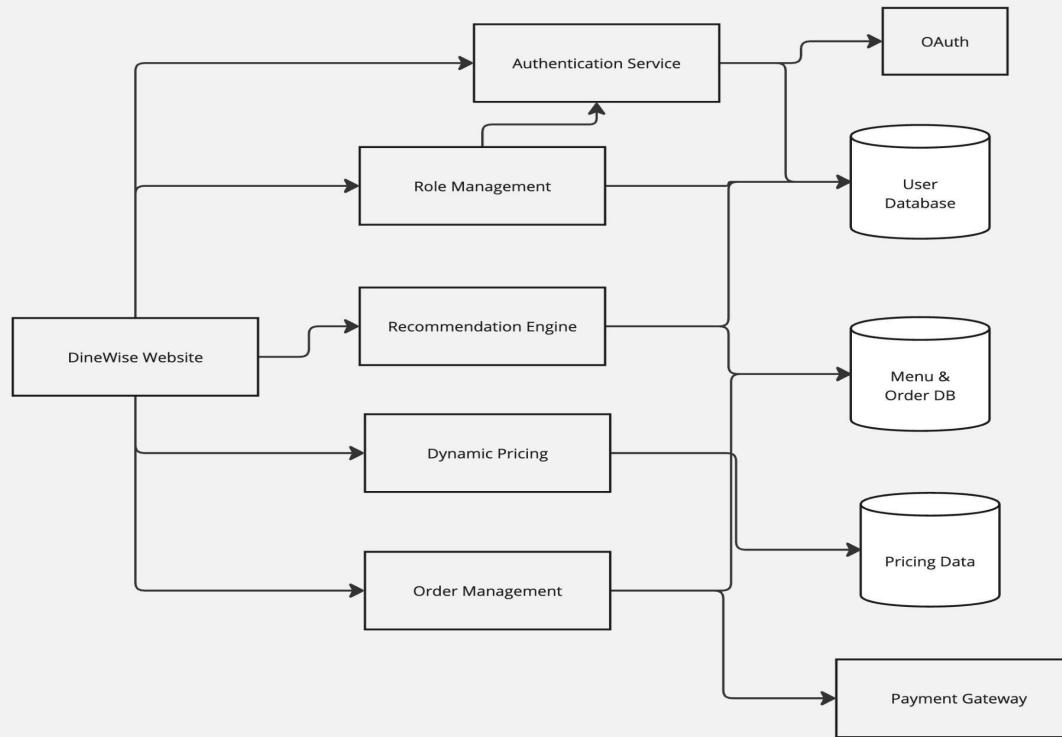
This Algorithm is just a combination of reinforcement learning with neural network. This helps the this system in dynamic pricing by learning it through trail and error.



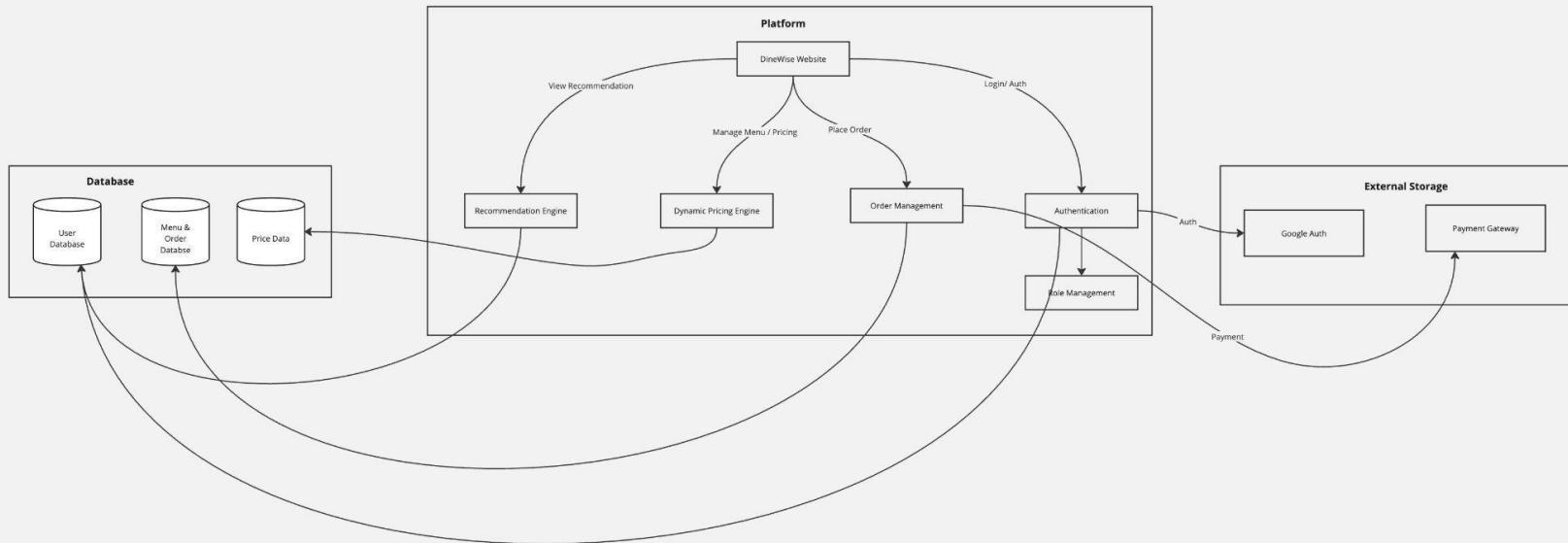
## AutoEncoders

This Algorithm is used unsupervised for unsupervised learning approach and it is used for understanding the dishes content based on their ingredients.

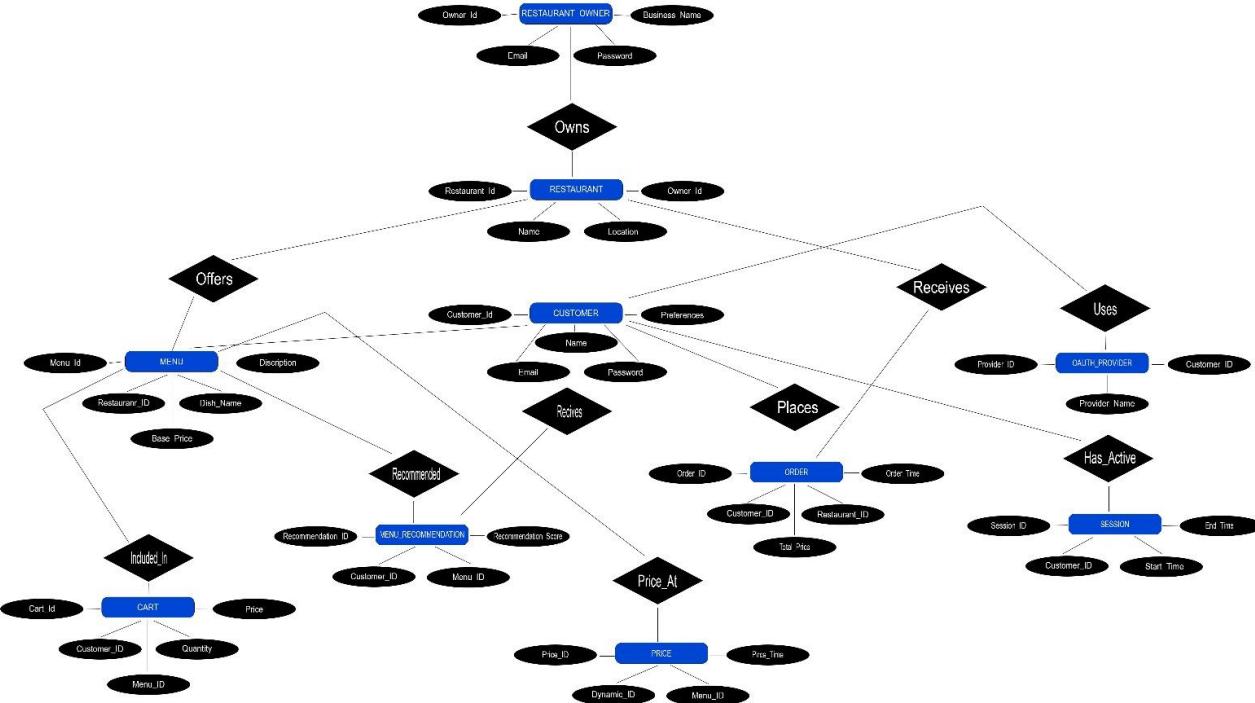
# Architecture Diagram



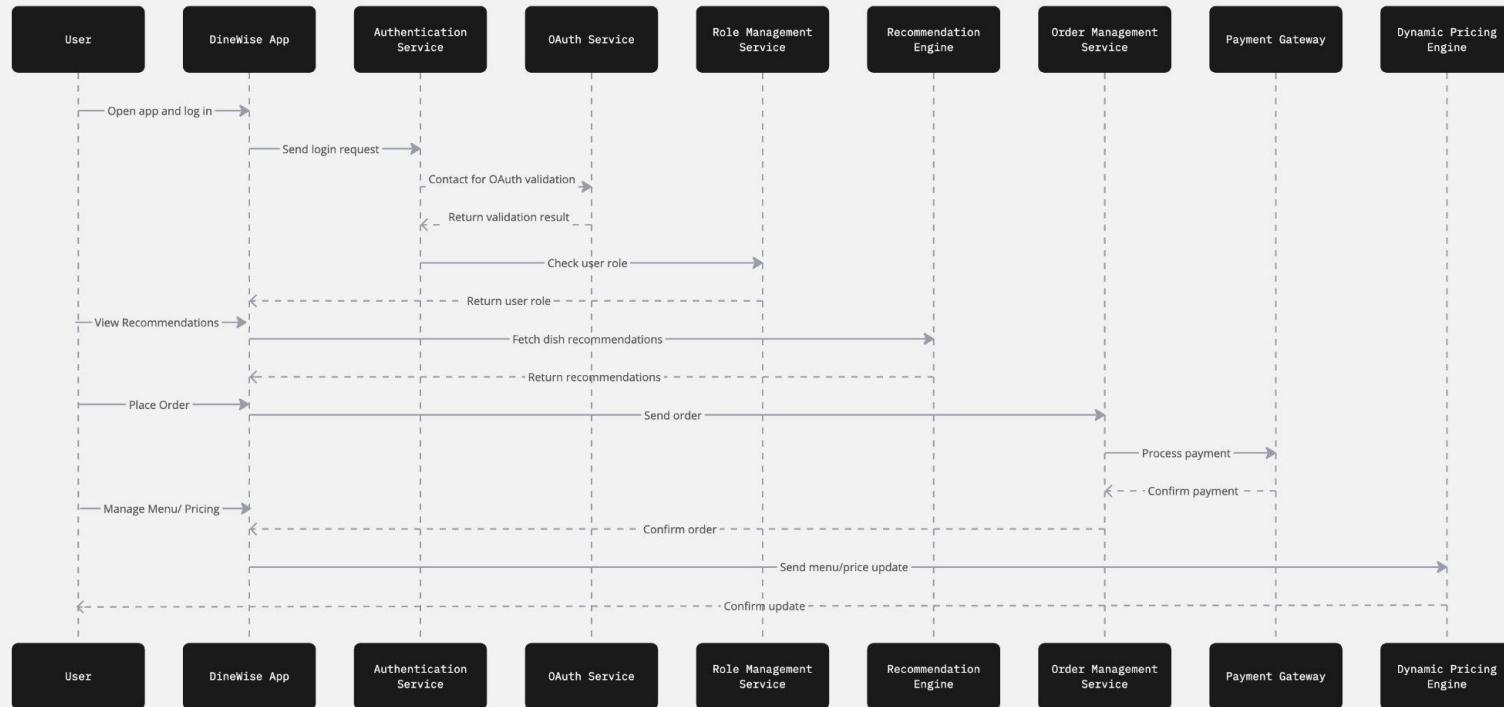
# Context Diagram



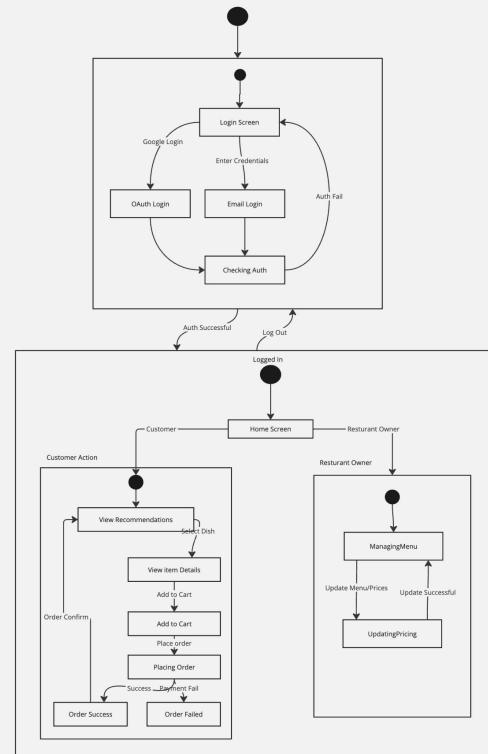
# ER Diagram



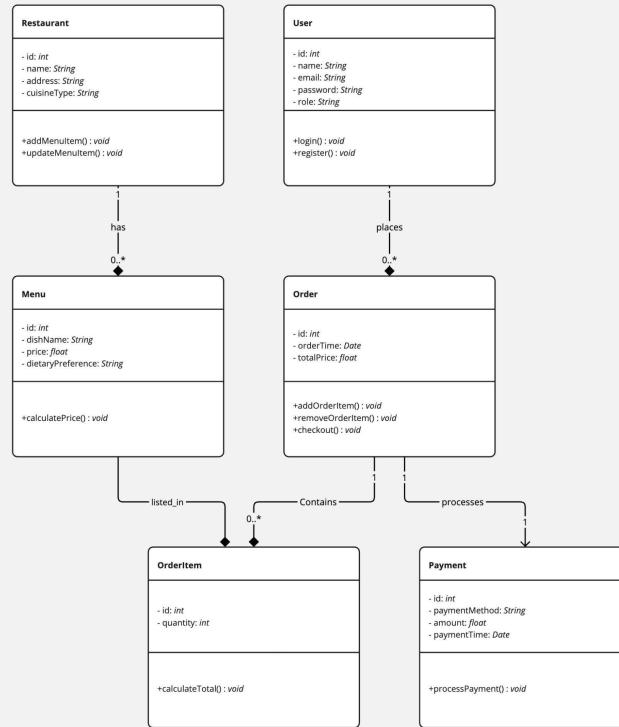
# Sequence Diagram



# State Diagram



# Class Diagram



# Product Backlog

User Story / Task	Description	Priority	Acceptance Criteria	Sprint
User Story: Customer Registration	As a customer, I want to register and create a profile to receive personalized menu recommendations.	High	- Users can sign up via email or social login. - Successful sign-up redirects to profile setup.	Sprint 1
User Story: Restaurant Registration	As a restaurant owner, I want to create an account to list my restaurant and its menu on DineWise.	High	- Owners can sign up using business credentials. - Successful sign-up redirects to the dashboard.	Sprint 1
User Story: Customer Login	As a customer, I want to log in to my account using registered credentials to access my personalized recommendations.	High	- Users can log in via email/password. - Successful login redirects to the dashboard.	Sprint 1
User Story: Restaurant Owner Login	As a restaurant owner, I want to log in to manage my restaurant menu and customer activity.	High	- Owners can log in with email/password. - Successful login redirects to the restaurant dashboard.	Sprint 1

# Product Backlog

User Story / Task	Description	Priority	Acceptance Criteria	Sprint
User Story: Password Recovery	As a user, I want to recover my password if I forget it.	Medium	- Users can request a password reset link. - Successful password reset allows a new login.	Sprint 1
User Story: Enable OAuth Login	As a user, I want to log in using Google or Facebook for easy access.	Medium	- Users can log in with Google/Facebook. - OAuth login redirects users back to the app.	Sprint 1
Technical Task: Session Management	Implement secure session management for logged-in users.	High	- Sessions expire after inactivity. - Users remain logged in until they log out manually.	Sprint 1
User Story: Personalized Menu Suggestions	As a customer, I want to receive menu recommendations based on my preferences and dining history.	High	- Menu recommendations are personalized. - Menu updates dynamically based on preferences.	Sprint 2

# Product Backlog

User Story / Task	Description	Priority	Acceptance Criteria	Sprint
User Story: Add Items to Cart	As a customer, I want to add items to my cart so I can place an order from my personalized menu.	Medium	- Customers can add items to their cart. - Cart updates in real time with selected dishes.	Sprint 2
Technical Task: Menu Recommendation Algorithm	Develop the ML model for personalized dish recommendations based on user preferences.	High	- Recommendation engine uses customer data. - Personalized suggestions are ranked accurately.	Sprint 2
Technical Task: Data Pipeline for ML	Set up a data pipeline to collect customer preferences and feedback for the recommendation model.	High	- Customer data is stored and pre-processed. - Data is fed into the ML model for training.	Sprint 2
Technical Task: Real-Time Pricing Backend	Create backend infrastructure for real-time dynamic pricing updates based on demand.	High	- Backend handles real-time price updates. - Pricing changes are served to the frontend API.	Sprint 2

# Product Backlog

User Story / Task	Description	Priority	Acceptance Criteria	Sprint
User Story: Dynamic Pricing Display	As a customer, I want to see the price of each dish updated in real-time based on demand.	High	- Prices adjust dynamically in real-time. - Users see updated prices on the menu.	Sprint 3
User Story: Remove Items from Cart	As a customer, I want to remove or change items in my cart before placing the order.	Medium	- Customers can remove or modify items. - Cart updates immediately with accurate pricing.	Sprint 3
User Story: View Cart Summary	As a customer, I want to view a summary of my cart before checkout to confirm order details.	Medium	- Cart displays selected items and total cost. - Cart updates dynamically with pricing.	Sprint 3
User Story: Place Order	As a customer, I want to place an order for the recommended dishes.	High	- Customers can place an order after adding items to the cart. - Successful order redirects to confirmation.	Sprint 3
Technical Task: Dynamic Pricing Algorithm	Develop the dynamic pricing algorithm that adjusts prices based on demand and availability.	High	- Pricing algorithm adjusts in real-time. - Customers see price changes in real time.	Sprint 3

# Sprint 1 Backlog

User Story / Task	Description	Story Points	Acceptance Criteria
User Story: Customer Registration	As a customer, I want to register and create a profile to receive personalized menu recommendations.	5	<ul style="list-style-type: none"><li>1. Users can sign up via email or social login.</li><li>2. Successful sign-up redirects to profile setup.</li></ul>
User Story: Restaurant Registration	As a restaurant owner, I want to create an account to list my restaurant and its menu on DineWise.	5	<ul style="list-style-type: none"><li>1. Owners can sign up using business credentials.</li><li>2. Successful sign-up redirects to the dashboard.</li></ul>
User Story: Customer Login	As a customer, I want to log in to my account using registered credentials to access my personalized recommendations.	3	<ul style="list-style-type: none"><li>1. Users can log in via email/password.</li><li>2. Successful login redirects to the dashboard.</li></ul>
User Story: Restaurant Owner Login	As a restaurant owner, I want to log in to manage my restaurant menu and customer activity.	3	<ul style="list-style-type: none"><li>1. Owners can log in with email/password.</li><li>2. Successful login redirects to the restaurant dashboard.</li></ul>
User Story: Password Recovery	As a user, I want to recover my password if I forget it.	3	<ul style="list-style-type: none"><li>1. Users can request a password reset link.</li><li>2. Successful password reset allows a new login.</li></ul>

# Sprint 1 Backlog

User Story / Task	Description	Story Points	Acceptance Criteria
User Story: Enable OAuth Login	As a user, I want to log in using Google or Facebook for easy access.	5	<ul style="list-style-type: none"><li>1. Users can log in with Google/Facebook.</li><li>2. OAuth login redirects users back to the app.</li></ul>
Technical Task: Session Management	Implement secure session management for logged-in users.	3	<ul style="list-style-type: none"><li>1. Sessions expire after inactivity.</li><li>2. Users remain logged in until they log out manually.</li></ul>

# Test Cases

User Story / Task	Test Case	Expected Result	Actual Result
Customer Registration	1. Test successful customer registration with valid email.	Registration completes, user is redirected to profile setup page.	Completed as expected.
	2. Test social login functionality (Google/Facebook).	User can log in using social accounts, and registration completes successfully.	Completed as expected.
Restaurant Registration	1. Test successful restaurant registration with valid business credentials.	Restaurant registration completes, user is redirected to dashboard.	Completed as expected.
	2. Test if registration redirects to dashboard post-signup.	After registration, the user is redirected to the restaurant dashboard.	Completed as expected.
Customer Login	1. Test login with valid credentials.	User successfully logs in and is redirected to the dashboard.	Completed as expected.
	2. Test error message for incorrect login attempts.	Invalid credentials trigger an error message.	Completed as expected.

# Test Cases

User Story / Task	Test Case	Expected Result	Actual Result
Restaurant Owner Login	1. Test restaurant login with valid credentials.	Restaurant owner successfully logs in and is redirected to the dashboard.	Completed as expected.
	2. Test redirect to restaurant dashboard after login.	After login, the restaurant owner is redirected to the restaurant dashboard.	Completed as expected.
Password Recovery	1. Test password reset request with a valid email.	User receives a password reset link via email.	Not completed (email setup delayed).
	2. Test reset link functionality and creation of new password.	User can set a new password after clicking the reset link.	Not completed.
Enable OAuth Login	1. Test Google login flow.	Google login redirects the user to the dashboard.	Not completed (OAuth integration delay).
	2. Test Facebook login flow.	Facebook login redirects the user to the dashboard.	Not completed.
Session Management	1. Test session expiry after the defined period of inactivity.	Session automatically expires after a set time (e.g., 30 minutes) of inactivity.	Not completed (issues in session logic).
	2. Test that users remain logged in until they manually log out.	Users remain logged in unless they manually log out.	Not completed.

# Sprint 1 Completed

User Story / Task	Status
Customer Registration	Completed
Restaurant Registration	Completed
Customer Login	Completed
Restaurant Owner Login	Completed

# Sprint 1 Not Completed

User Story / Task	Status	Reason for Incompletion
Password Recovery	Not Completed	Integration with email provider delayed, need to finalize setup.
Enable OAuth Login	Not Completed	OAuth implementation for Google/Facebook required more testing.
Session Management	Not Completed	Session expiry logic had bugs, needs further testing and adjustments.

# Metrics

## Team Velocity - This Sprint

- **Total Story Points Committed:** 27 story points
- **Total Story Points Completed:** 16 story points

## Completed/Committed Ratio

- **Committed Story Points:** 27 story points
- **Completed Story Points:** 16 story points

Thus, the **Completed/Committed Ratio** for this sprint 1 is **59.26%**.

# Burndown Chart



# Retrospective

**IdeaBoardz**

start typing to filter stickies

Export | Login

View Section All Sections Sort By created time

## SPRINT 1

**What went well** +4

- customer registration +1
- customers and restaurant owner logins went well +5

**Good Team Effort and Co-ordination +2**

**What can be improved** +5

- Need to improve more test cases actions based on use story requirements +3
- Try to split the different tasks based on the prior and do the tasks accordingly +2

**Action Items** +4

- Need to more focus on password recovery and OAuth login issue which left in sprint 1 +2
- there is some bugs and testing adjustments in session management still working on that +2

# Sprint 2

Story/Task	Description	Story Points	Acceptance Criteria
Carried Over from Sprint 1			
User Story: Password Recovery	As a user, I want to recover my password if I forget it.	3 Story Points	<ol style="list-style-type: none"><li>1. Users can request a password reset link.</li><li>2. Successful password reset allows a new login.</li></ol>
User Story: Enable OAuth Login	As a user, I want to log in using Google or Facebook for easy access.	5 Story Points	<ol style="list-style-type: none"><li>1. Users can log in with Google/Facebook.</li><li>2. OAuth login redirects users back to the app.</li></ol>
Technical Task: Session Management	Implement secure session management for logged-in users.	3 Story Points	<ol style="list-style-type: none"><li>1. Sessions expire after inactivity.</li><li>2. Users remain logged in until they manually log out.</li></ol>

# Sprint 2

Story/Task	Description	Story Points	Acceptance Criteria
New Stories Planned for Sprint 2			
User Story: Personalized Menu Suggestions	As a customer, I want to receive menu recommendations based on my preferences and dining history.	8 Story Points	<ul style="list-style-type: none"><li>1. Menu recommendations are personalized.</li><li>2. Menu updates dynamically based on preferences.</li></ul>
User Story: Add Items to Cart	As a customer, I want to add items to my cart so I can place an order from my personalized menu.	5 Story Points	<ul style="list-style-type: none"><li>1. Customers can add items to their cart.</li><li>2. Cart updates in real-time with selected dishes.</li></ul>
Technical Task: Menu Recommendation Algorithm	Develop and integrate the machine learning model for personalized dish recommendations.	8 Story Points	<ul style="list-style-type: none"><li>1. Recommendation engine uses customer data.</li><li>2. Personalized suggestions are ranked accurately.</li></ul>
Technical Task: Data Pipeline for ML	Set up a data pipeline to collect customer preferences and feedback for the recommendation model.	5 Story Points	<ul style="list-style-type: none"><li>1. Customer data is stored and pre-processed.</li><li>2. Data is fed into the ML model for training.</li></ul>
Technical Task: Real-Time Pricing Backend	Create backend infrastructure for real-time dynamic pricing updates based on demand.	4 Story Points	<ul style="list-style-type: none"><li>1. Backend handles real-time price updates.</li><li>2. Pricing changes are served to the frontend API.</li></ul>

# Website Screenshots

DineWise

Home

Explore

Register

Login

## Welcome to DineWise

Experience personalized dining with AI-driven menu  
recommendations and dynamic pricing

Get Started

Explore Menu

# Website Screenshots

DineWise  
Join the future of dining

Customer      Restaurant

First Name

Last Name

Phone Number

Email

Password    
Min. 8 characters

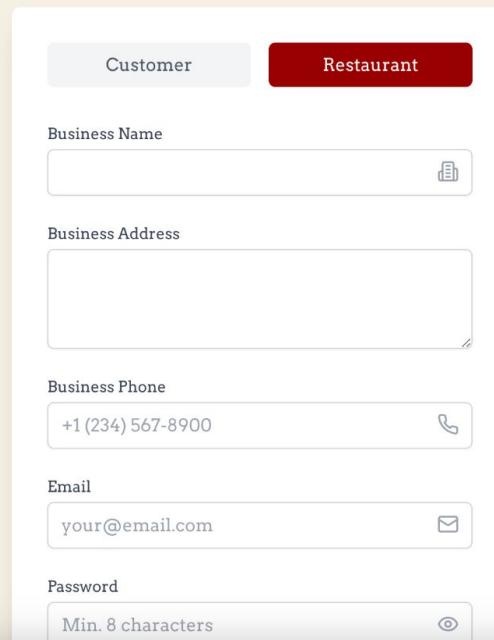
Confirm Password

By registering, I agree to the [Terms of Service](#) and [Privacy Policy](#).

# Website Screenshots

## DineWise

Join the future of dining



A screenshot of a web-based registration form for DineWise. The form is contained within a white rectangular box with rounded corners, set against a light gray background. At the top, there are two buttons: "Customer" on the left and "Restaurant" on the right, with "Restaurant" being the active button and highlighted in red. Below these buttons are four input fields: "Business Name", "Business Address", "Business Phone", and "Email". Each input field is enclosed in a white box with a thin gray border. To the right of each input field is a small, semi-transparent icon: a clipboard for "Business Name", a map pin for "Business Address", a telephone receiver for "Business Phone", and an envelope for "Email". Below the "Business Phone" field is a placeholder text "+1 (234) 567-8900" and a small telephone receiver icon. Below the "Email" field is a placeholder text "your@email.com" and a small envelope icon. At the bottom of the form is a password input field containing the placeholder text "Min. 8 characters", accompanied by a small circular icon with a question mark.

Customer Restaurant

Business Name

Business Address

Business Phone

+1 (234) 567-8900

Email

your@email.com

Password

Min. 8 characters

# Website Screenshots

DineWise

Home

Explore

Register

Login

## Welcome Back

Sign in to your DineWise account

Customer

Restaurant

Email

your@email.com



Password

Enter your password



Remember me

[Forgot password?](#)

Sign In

Or continue with

Continue with Google

Don't have an account? [Sign up here](#)

# Website Screenshots

DineWise

Home

Explore

Register

Login

## Welcome Back

Sign in to your restaurant dashboard

Customer

Restaurant

Email

restaurant@email.com



Password

Enter your password



Remember me

[Forgot password?](#)

Sign In

Or continue with

 Continue with Google

# Website Screenshots

The screenshot shows the DineWise Restaurant Dashboard. At the top, there's a navigation bar with the DineWise logo, a Home button, an Explore button, and three user icons (bell, gear, and profile). Below the navigation is a section titled "Restaurant Dashboard". This section features four cards: "Total Revenue \$0.00" (with a bar chart icon), "Customers 0" (with a person icon), "Menu Items 0" (with a fork and knife icon), and "Active Orders 0" (with a line graph icon). Below these cards is a menu bar with "Menu" and "Orders" options. A table header is visible, showing columns for "ORDER ID", "CUSTOMER", "TOTAL", and "STATUS".

DineWise

Home Explore

Restaurant Dashboard

Total Revenue  
\$0.00

Customers  
0

Menu Items  
0

Active Orders  
0

Menu Orders

ORDER ID	CUSTOMER	TOTAL	STATUS
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# Wikipage Link

<https://github.com/htmw/2024F-pace-super-giants/wiki>



# Thank You

DineWise