

Chapter 1

1. Introduction:

It's, an innovative system poised to revolutionize the way patrons experience dining within a singular, yet expansive restaurant. Rooted in the belief that the journey of selecting the perfect dish should be as delightful as the culinary indulgence itself, This project seamlessly integrates technology and gastronomy to create an immersive and user-centric platform.

At its core, This system seeks to address the often daunting task of choosing from a diverse menu. With an extensive array of food categories encompassing vegetarian and nonvegetarian options, breakfast selections, beverages, sea-food specialties, and delectable desserts, users are invited to embark on a culinary exploration within the digital confines of this unique restaurant.

The hallmark of this system lies in its Recommendation module, a sophisticated algorithm finely tuned to the nuances of individual preferences. By considering factors such as ingredients, calories, price, and user ratings & reviews, this module crafts personalized dish suggestions, alleviating the burden of choice and enhancing the overall dining experience.

Upon entering the website, users are greeted with an intuitive interface designed for simplicity and ease of navigation. The menu categories beckon exploration, offering a visual feast that mirrors the richness of the culinary offerings within. This system aims to transform the act of ordering into a pleasurable and efficient process, allowing patrons to seamlessly select their chosen dishes.

This project is not merely a digital menu but a comprehensive journey through global cuisines encapsulated within the walls of a single restaurant. From the bold flavours of traditional dishes to the nuanced profiles of beverages and the sweet symphony of desserts, the system invites users to embrace a gastronomic adventure without leaving the confines of their chosen dining establishment.

In essence, this project is more than a tool for ordering; it is a bridge between culinary artistry and digital innovation. It aspires to not only satisfy the palate but to elevate the entire dining experience by empowering users with informed choices and a personalized journey through the world of cuisines.

1.1 Project Objectives:

This system emerges with a set of clear and ambitious objectives, aiming to reshape the dynamics of the dining experience within a single restaurant. At its core, the project seeks to achieve the following key goals:

- **Enhancing User Experience:** This system endeavours to elevate the overall user experience by providing a seamless and enjoyable platform for patrons to explore, select, and indulge in a diverse range of culinary offerings. The project places a premium on user-friendly interfaces, ensuring that the digital journey mirrors the pleasure derived from the physical act of dining.
- **Simplifying Dish Selection:** The primary objective of This system is to simplify the often intricate process of choosing a dish from an extensive menu. By incorporating a sophisticated Recommendation module, the project aims to alleviate decision-making burdens, offering users personalized suggestions based on factors such as ingredients, calories, price, and user ratings & reviews.
- **Promoting Informed Choices:** This system seeks to empower patrons with information. By providing detailed insights into each dish, including ingredients, nutritional content, pricing, and feedback from fellow diners, the project encourages users to make informed choices aligned with their preferences.
- **Streamlining Ordering Process:** A key objective is to streamline the ordering process, making it efficient and user-friendly. It endeavours to transform the act of placing an order into a straightforward and enjoyable task, ensuring that users can seamlessly navigate through the menu and select their desired dishes.
- **Curating Culinary Exploration:** Beyond the functional aspects, The system aspires to curate a culinary exploration within the digital realm. The project aims to immerse users in a global journey of flavours, from traditional dishes to innovative creations, providing a diverse and enriching dining experience.

In essence, the objectives of this system extend beyond the confines of a typical ordering system. The project envisions a harmonious fusion of technology and gastronomy, where users not only relish their chosen dishes but also embark on a digital culinary adventure guided by informed choices and personalized recommendations. Tastynavigator sets out to redefine the benchmarks of dining satisfaction and engagement.

1.2 Existing System and Need of System:

Existing System:

- Prior to the introduction of Tastynavigator, the traditional dining experience within the chosen restaurant relied heavily on conventional menu systems. Patrons would be presented with a physical menu, often extensive and diverse, requiring them to manually sift through the options to make a choice. This process, while familiar, could be time-consuming, overwhelming, and occasionally hindered by the lack of comprehensive information about each dish.
- The existing system often left patrons grappling with indecision, especially in the face of diverse culinary offerings or when attempting to cater to specific dietary preferences. The absence of a personalized recommendation system meant that diners were left to navigate the menu without tailored guidance, potentially resulting in suboptimal choices that did not align with their preferences.

Need of System:

- **Streamlined Decision-Making:** Tastynavigator responds to the need for a more streamlined and efficient decision-making process. By incorporating a sophisticated Recommendation module, the system aims to guide users through the extensive menu, presenting personalized suggestions based on individual preferences and factors such as ingredients, calories, price, and user ratings.
- **Enhanced User Experience:** In the era of digital convenience, there is a growing demand for enhanced user experiences. The intuitive interface and personalized recommendations contribute to a more enjoyable and user-centric journey.
- **Empowering Informed Choices:** With an increasing emphasis on health consciousness and diverse dietary preferences, there is a need for systems that empower users with information. Tastynavigator fills this gap by offering comprehensive details about
- **Efficient Ordering Process:** The need for efficiency in the ordering process is addressed by Tastynavigator. The system aims to transform the act of ordering into a seamless and efficient task, ensuring that users can navigate the menu effortlessly and place orders with ease.

1.3 Scope of Work:

The scope of work for this system encompasses the development and implementation of a comprehensive web-based platform within a single restaurant. This platform will feature an extensive menu with diverse food categories, a streamlined ordering process, and a sophisticated Recommendation module. The project aims to enhance the overall user experience by providing personalized dish suggestions based on factors like ingredients, calories, price, and user ratings. Additionally, the system will offer detailed information about each dish, empowering users to make informed choices. The scope also includes creating an intuitive interface, ensuring efficient navigation, and curating a digital culinary exploration within the confines of the chosen restaurant.

1.4 Operating Environment-Hardware and Software

Software Specification : IDE: Pycharm, Database: MySQL, Server : , Web app :

Hardware Specification : Desktop/Laptop, Processor intel core i3 11gen, HardDisk 8GB or more, Ram 4GB or more

1.5 Technology Used

Frontend : Html, CSS, Bootstrap, Javascript

Backend : Python, Django, MySQL, MySQL8.0

1.6 Module Specification

- **Admin Dashboard:** The Admin Dashboard provides restaurant staff with a centralized platform to manage menu items, track orders, and analyze user feedback. It empowers administrators to make data-driven decisions, ensuring the smooth operation of this platform.
- **User Account Module:** This System includes a user account module that allows patrons to create accounts, personalize their profiles, and track their order history. This module enhances user engagement and offers a tailored experience for frequent visitors.
- **Menu Module:** This module presents a visually appealing and user-friendly interface, allowing patrons to explore an extensive menu featuring diverse food categories. Users can seamlessly navigate through the available options, making dish selection an effortless and enjoyable experience.
- **Order Module:** The Order module streamlines the ordering process, ensuring a hassle-free and efficient experience. Users can select and place orders for their chosen dishes with ease, contributing to a seamless transition from exploration to culinary indulgence.
- **Recommendation Module:** At the heart of this system, the Recommendation module employs sophisticated algorithms to offer personalized dish suggestions. By considering factors such as ingredients, calories, price, and user ratings & reviews, this module assists users who may find it challenging to decide on a dish, enhancing the overall dining experience.

Chapter 2

2.1. Proposed System

1. Personalized Guidance:

- The Recommendation Module tailors dish suggestions based on individual preferences, dietary needs, and factors like ingredients, calories, price, and user reviews, enhancing the dining experience.

2. User-Friendly Interface:

- The intuitive interface simplifies dish exploration, making the Menu Module visually appealing and easy to navigate. The Order Module streamlines the process, ensuring efficient and enjoyable ordering.

3. Information Empowerment:

- Patrons are empowered with comprehensive details about each dish, including ingredients, nutrition, pricing, and peer reviews. The User Account Module enables personalization and order history tracking for an informed dining experience.

4. Digital Culinary Exploration:

- The system goes beyond a typical ordering tool, curating a digital culinary journey with diverse food categories. Tastynavigator invites users to explore global cuisines, from traditional to innovative dishes, enriching the dining experience within the restaurant's digital confines.

2.2 Objectives of System

Enhancing User Experience:

The system aims to elevate the overall user experience by providing a seamless and enjoyable platform. User-friendly interfaces ensure that the digital journey mirrors the pleasure derived from the physical act of dining, contributing to a satisfying and immersive experience.

Simplifying Dish Selection:

The primary objective is to simplify the intricate process of choosing a dish from an extensive menu. The sophisticated Recommendation Module alleviates decision-making burdens, offering personalized suggestions based on ingredients, calories, price, and user ratings, making the dining selection process effortless.

Promoting Informed Choices:

The system seeks to empower patrons with information. By providing detailed insights into each dish, including ingredients, nutritional content, pricing, and feedback, the project encourages users to make informed choices aligned with their preferences and dietary considerations.

Streamlining Ordering Process:

A key objective is to streamline the ordering process, making it efficient and user-friendly. The system transforms the act of placing an order into a straightforward and enjoyable task, ensuring that users can seamlessly navigate through the menu and select their desired dishes with ease.

2.3 User Requirements

Intuitive Interface:

- Users require an intuitive and visually appealing interface that facilitates easy navigation through the system. The Menu Module should present a diverse range of food categories in a user-friendly manner.

Personalized Recommendations:

- Users expect a personalized experience through the Recommendation Module. The system should consider individual preferences, dietary restrictions, and other factors to provide tailored dish suggestions, simplifying the decision-making process.

Comprehensive Dish Information:

- Users want detailed information about each dish, including ingredients, nutritional content, pricing, and feedback from other diners. The User Account Module should allow patrons to track their order history, providing a comprehensive view for informed decision-making.

Efficient Ordering Process:

- The ordering process should be streamlined and efficient. The Order Module should enable users to easily select and place orders for their chosen dishes, contributing to a seamless transition from exploration to culinary indulgence.

User Account Personalization:

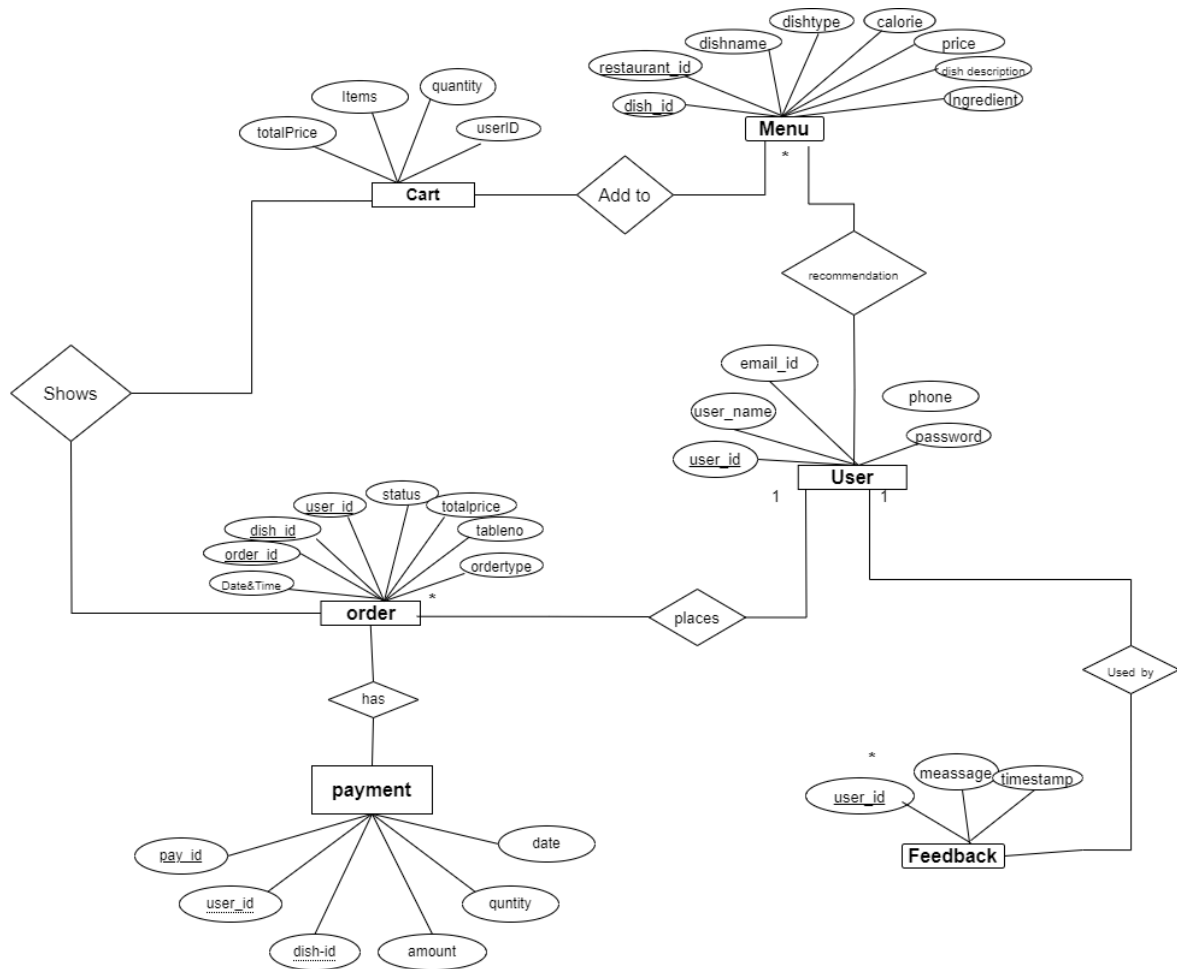
- Users require the ability to create accounts and personalize profiles. The User Account Module should allow patrons to customize their preferences, ensuring a more tailored and engaging experience for frequent visitors.

Digital Culinary Exploration:

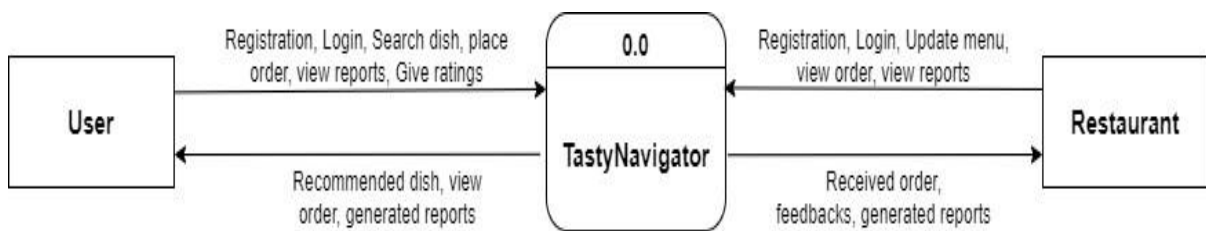
- Users seek a platform that goes beyond a mere ordering tool. The system should provide a digital culinary exploration, allowing users to embark on a global journey of flavors, from traditional to innovative dishes, within the confines of the chosen restaurant.

3. Analysis & Design

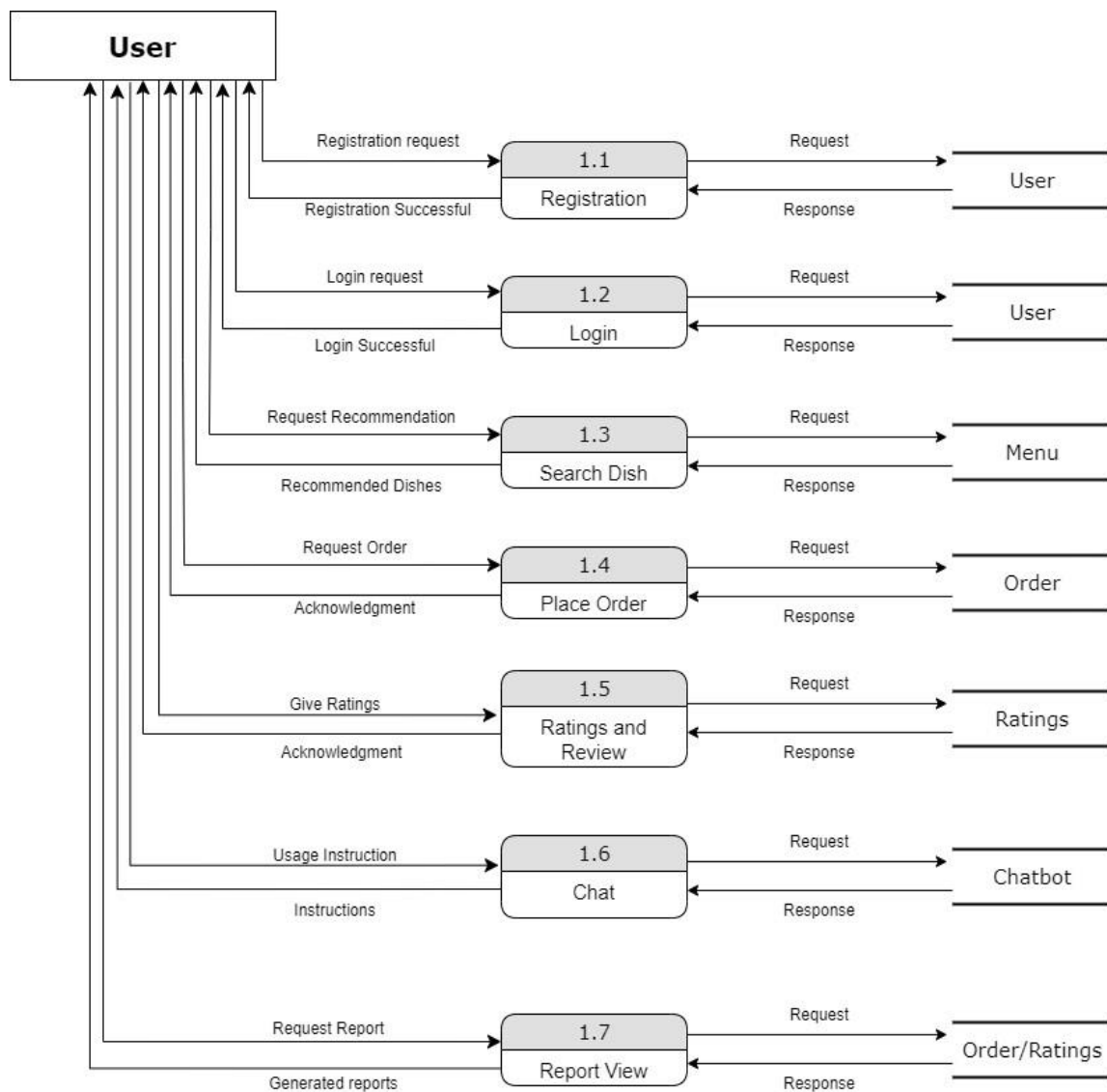
3.1 Entity Relationship Diagram

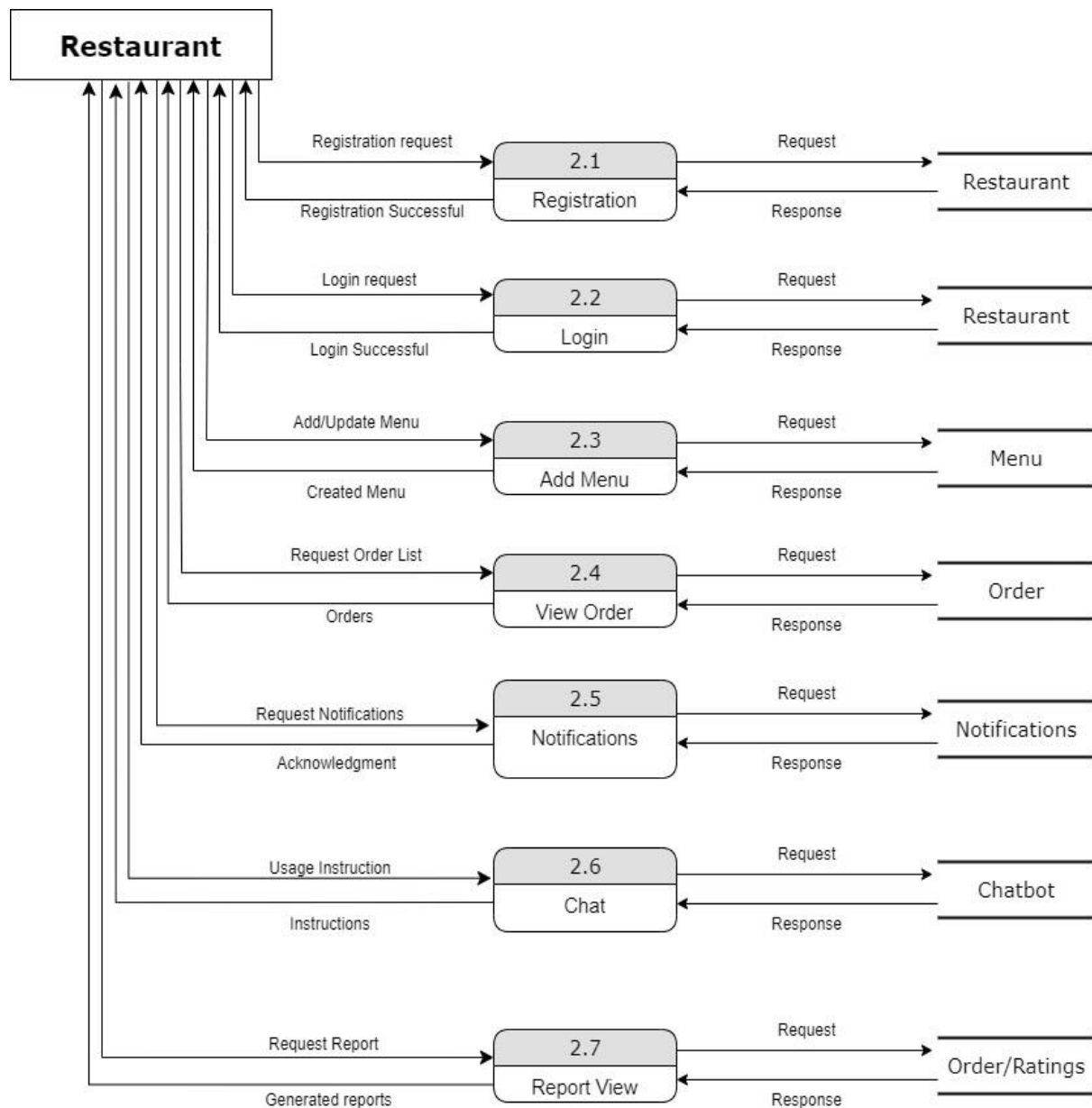


Context level Diagram:

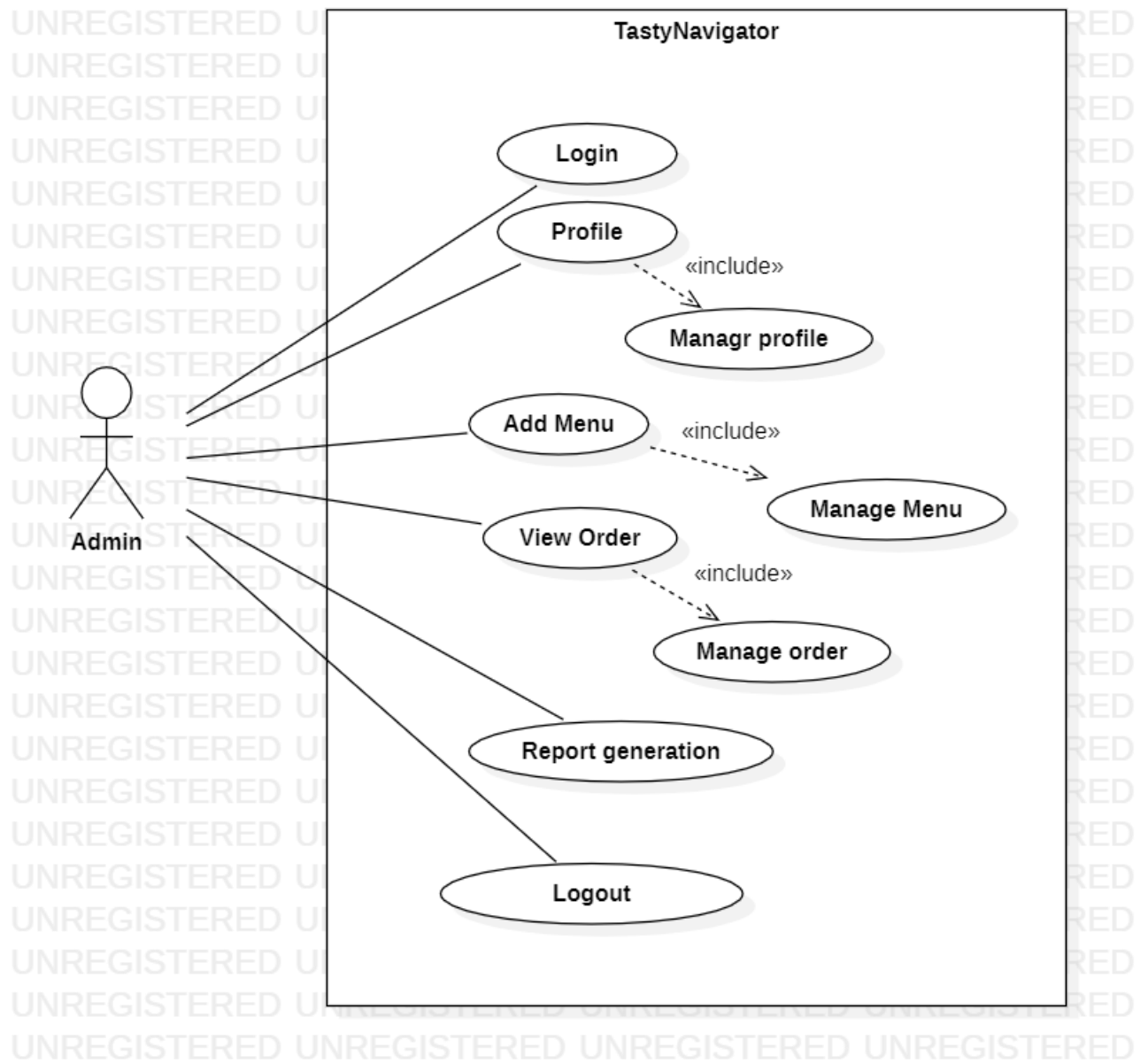


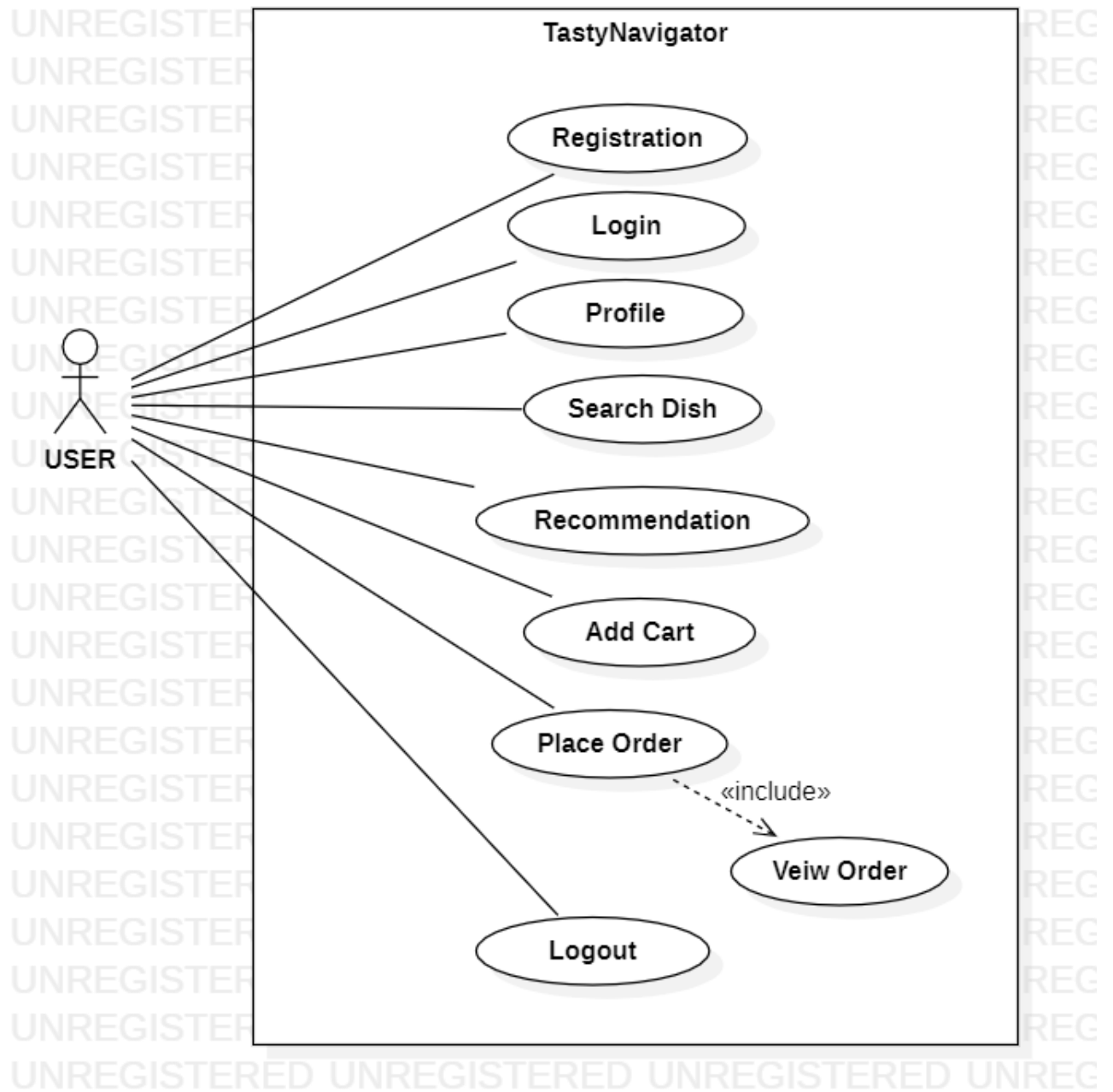
3.1 Data Flow Diagram:



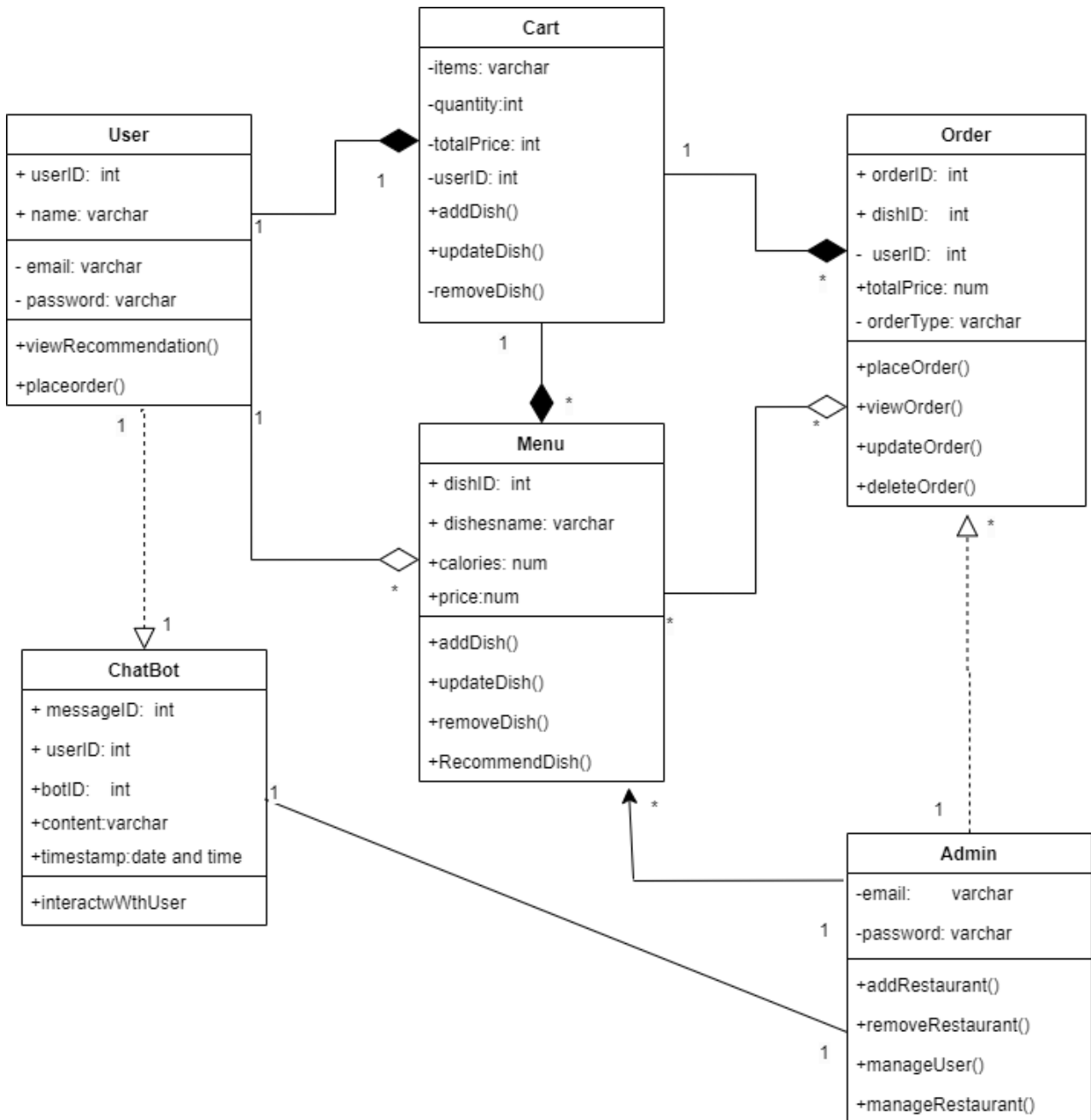


3.3 Use Case Diagram:

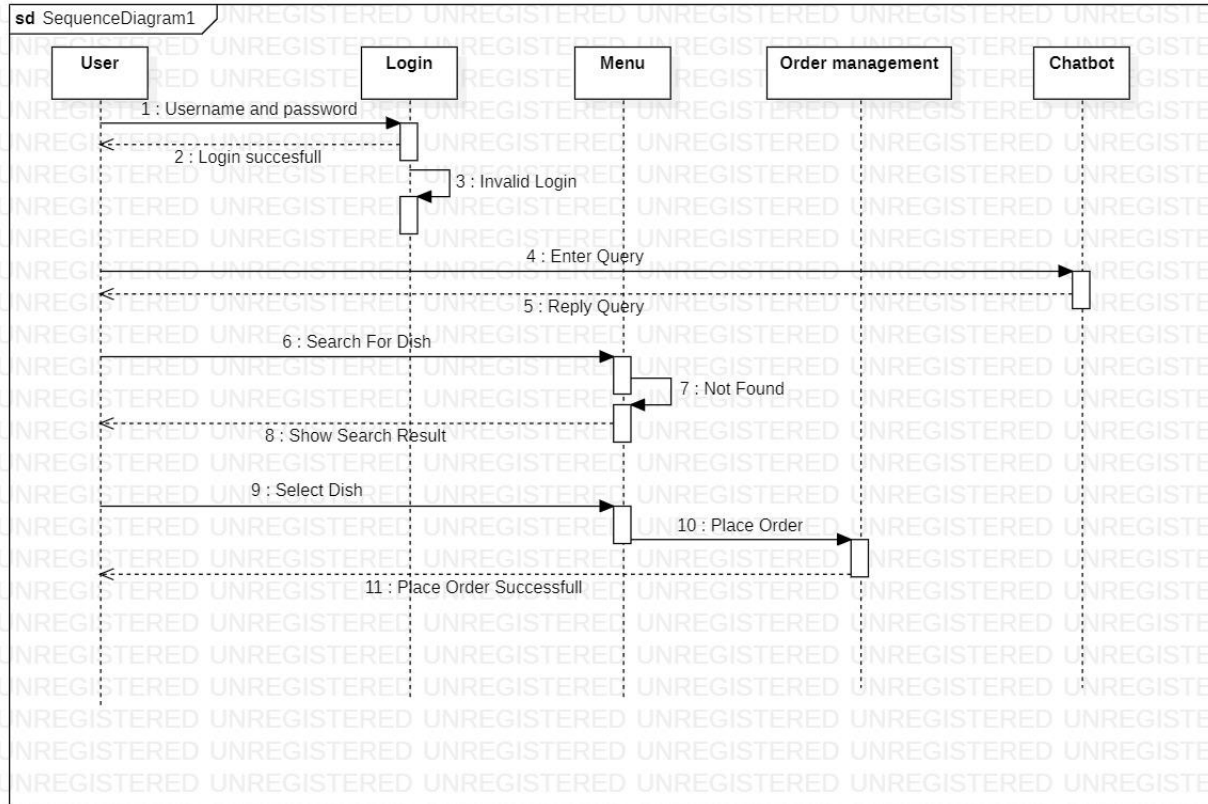




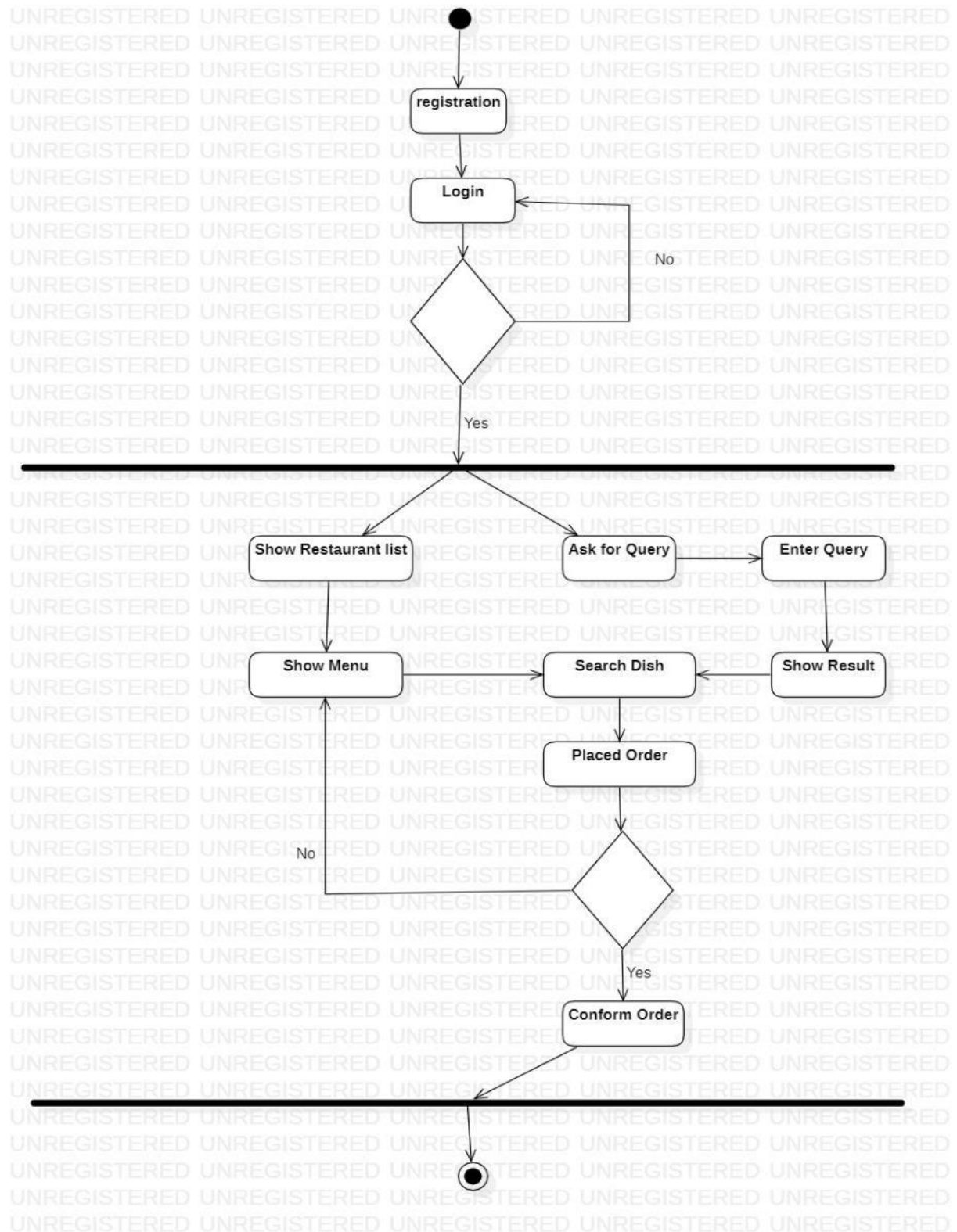
3.4 Class Diagram:

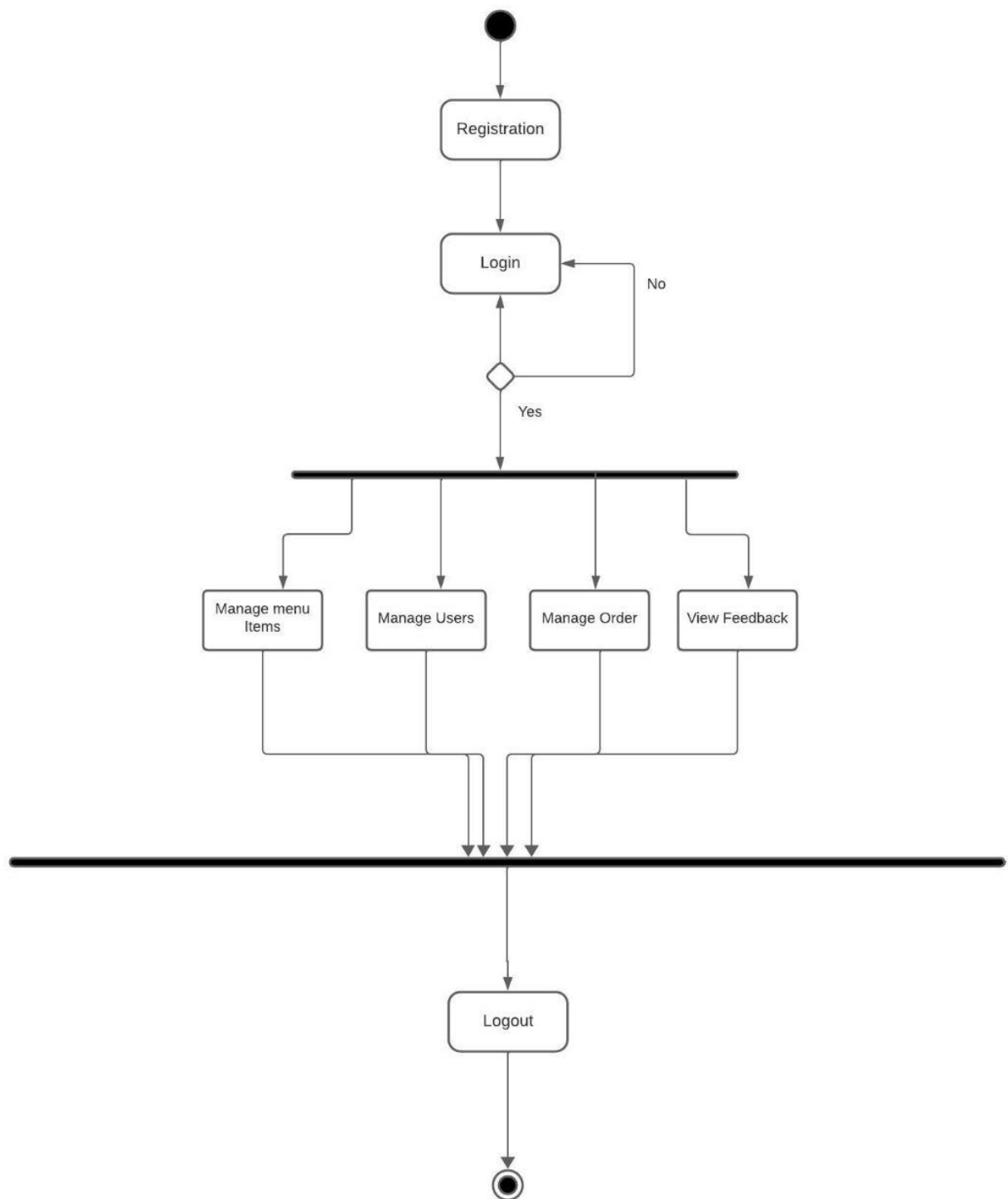


3.5 Sequence Diagram:



3.6 Activity Diagram:





3.7 Table Structure:

1. User:

Sr. No.	Field/Column Name	Data Type	Size	Constraints	Description
1	user_id	INT	20	Primary key Not Null	User ID
2	user_name	VARCHAR	255	Not Null	Name of User
3	email_id	VARCHAR	255	Unique key Not Null	Mail Id of user
4	phone	DOUBLE	55	Not Null	Phone number of user
5	password	VARCHAR	20	Not Null	ProfilePassword

2. Menu

Sr. No.	Field/Column Name	Data Type	Size	Constraints	Description
1	dish_id	INT	20	Primary key Not Null	Dish ID
2	restaurant_id	INT	20	Foreign key	Restaurant Id
3	dish_name	VARCHAR	255	Not Null	Name of specific dish
4	dish_type	VARCHAR	255	Not Null	Types of dishes on basis of various filters
5	calorie	INT	20	Not Null	Calories in specific dish
6	price	INT	20	Not Null	Price of a specific dish
7	Ingredient	VARCHAR	55	Not Null	Dishes with specific ingredients
8	Dish Description	VARCHAR	255	Not Null	Description of dish in the menu

3. Feedback

Sr. No.	Field/Column Name	Data Type	Size	Constraints	Description
1	id	INT	20	Primary key Not Null	FeedbackID
2	user_name	Text	20	Foreign key Not Null	User name
3	email	VARCHAR	255	Foreign key Not Null	User email
4	rating	INT	20	Not Null	Phone number of user
5	message	VARCHAR	55	Not Null	Feedback message

4. Cart

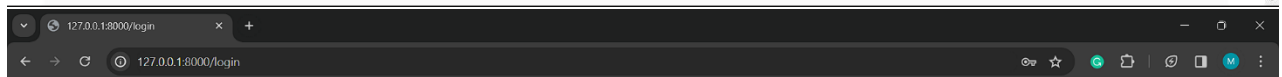
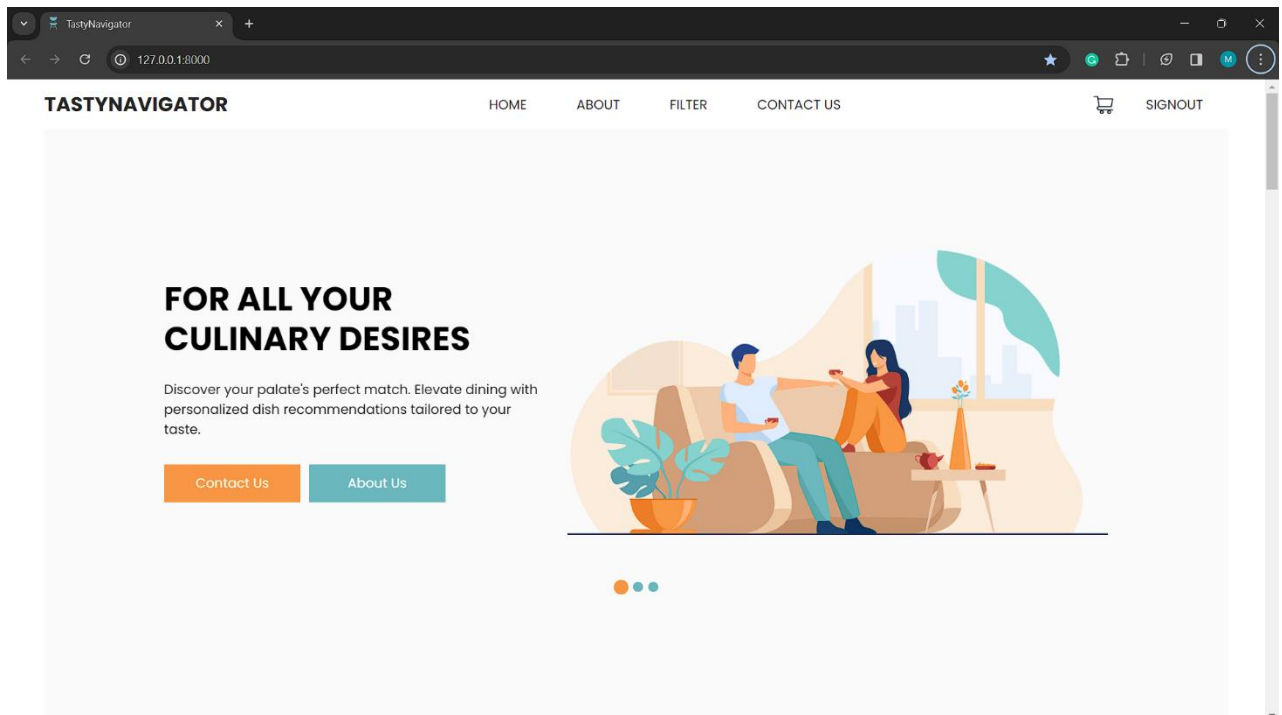
Sr. No.	Field/Column Name	Data Type	Size	Constraints	Description
1	dish_id	INT	20	Primary key Not Null	Dish ID
2	dish_name	VARCHAR	255	Not Null	Name of specific dish
3	dish_type	VARCHAR	255	Not Null	Types of dishes on basis of various filters
4	calorie	INT	20	Not Null	Calories in specific dish
5	price	INT	20	Not Null	Price of a specific dish
6	Ingredient	VARCHAR	55	Not Null	Dishes with specific ingredients

7	Dish Description	VARCHAR	255	Not Null	Description of dish in the menu
8	quantity	int	5	Not Null	Quantity of dish
9	User_id	int	5	Foreign key	User Id

5 . Order

Sr. No.	Field/Column Name	Data Type	Size	Constraints	Description
1	id	INT	20	Primary key Not Null	Order ID
2	User_id	INT	20	Foreign key Not Null	User Id
2	user_name	Text	20	Not Null	User name
3	Amount	double	30	Not Null	Amount of Bill
4	Card Number	INT	16	Not Null	Card number of user
5	CVV	INT	3	Not Null	CVV Number

3.8 User Interface Screens:



Login

[Forgot password?](#)

Submit

[Don't have an account? Sigup now](#)

Customer Registration Form

127.0.0.1:8000/Registration

Name:

Email:

Password:

Address:

Mobile Number:

Security Question:

What is your pet's name?

Answer for Security Question:

☐ I accept the terms and conditions

submit

TastyNavigator

127.0.0.1:8000/filter/

TASTYNAVIGATOR

HOMEABOUTFILTERCONTACT US

Avdhut SIGNOUT

RECOMMENDATION CRITERIA

Recommendation Using Calories

400

500

8

20

3

SUBMIT

Recommendation Using Ingredients

Enter Comma Seprated Ingredients

SUBMIT

TastyNavigator

HOMEABOUTFILTERCONTACT US

Avdhut

SIGNOUT

SR.NO	DISH ID	DISH NAME	DESCRIPTION	INGREDIENTS	PRICE	CALORIES	CUISINE	USER RATING	CATEGORY	ADD
1	2	Paneer Tikka	Grilled cubes of paneer marinated in yogurt and spices.	paneer, yogurt, spices	10.99\$	400	Indian	3.3	Veg	Add to cart
2	4	Veggie Wrap	A delicious wrap filled with black beans, avocado, and veggies.	tortilla, black beans, avocado, vegetables	9.99\$	400	Indian	3.6	Veg	Add to cart
3	7	Malai Kofta	Deep-fried vegetable balls in a creamy cashew-based curry.	paneer, potatoes, cashews, cream	12.99\$	500	Indian	4.6	Veg	Add to cart
4	12	Palak Paneer	Cottage cheese in a rich spinach and tomato-based curry.	paneer, spinach, tomatoes, spices	11.99\$	400	Indian	3.5	Veg	Add to cart
5	18	Aloo Paratha	Whole wheat flatbread stuffed with spiced mashed potatoes.	wheat flour, potatoes, spices	9.99\$	400	Indian	4.1	Veg	Add to cart
6	20	Vegetable Korma	Creamy vegetable curry with cashews and coconut milk.	mixed vegetables, cashews, coconut milk	11.99\$	450	Indian	3.2	Veg	Add to cart
7	23	Tandoori Chicken	Grilled chicken marinated in yogurt and tandoori spices.	chicken, yogurt, tandoori spices	13.99\$	500	Indian	3.5	Non-Veg	Add to cart
8	31	Chicken Malai Kebab	Succulent chicken kebabs marinated in cream and spices.	chicken, cream, spices	13.99\$	450	Indian	3.4	Non-Veg	Add to cart
9	34	Fish Tikka	Grilled fish marinated in yogurt and aromatic spices.	fish, yogurt, spices	14.99\$	500	Indian	3.7	Non-Veg	Add to cart
10	40	Keema Pav	Spiced minced meat served with soft pav bread.	minced meat, pav bread, spices	12.99\$	500	Indian	4.1	Non-Veg	Add to cart
		Chicken Malai	Succulent chicken kebabs marinated in cream							Add to

TastyNavigator

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Avdhut

SIGNOUT

RECOMMENDATION CRITERIA

Recommendation Using Calories

Enter Minimum Calories

Enter Maximum Calories

Enter Minimum Price

Enter Maximum Price

Enter Minimum User Rating

SUBMIT



Recommendation Using Ingredients

chicken,garlic

SUBMIT

SR.NO	DISH ID	DISH NAME	DESCRIPTION	INGREDIENTS	PRICE	CALORIES	CUISINE	USER RATING	CATEGORY	ADD
1	230	Chicken in Garlic Sauce	Chicken stir-fry with bold flavors of garlic and soy sauce.	chicken garlic soy sauce	15.99\$	290	Chinese	4.6	Non-Veg	Add to cart
2	806	Pollo al Ajillo	Spanish garlic chicken cooked with garlic and olive oil, a flavorful dish.	garlic chicken olive oil	15.99\$	280	Spanish	4.2	Non-Veg	Add to cart

Shopping Cart

Product Name & Details		Price	Quantity	Total	cancel
	Paneer Tikka Description: Grilled cubes of paneer marinated in yogurt and spices.	10.99 \$	<input type="text" value="1"/>		×
	Tandoori Chicken Description: Grilled chicken marinated in yogurt and tandoori spices.	13.99 \$	<input type="text" value="1"/>		×
	Palak Paneer Description: Cottage cheese in a rich spinach and tomato-based curry.	11.99 \$	<input type="text" value="1"/>		×

Promocode

Total price

Back to shopping
Checkout

**** * 1060

Expiry date:10/16

Name:Kumar

**** * 1060

Expiry date:10/16

Name:Kumar

**** * 1060

Expiry date:10/16

Name:Kumar

Payment Methods

PayPal

Credit Card

Summary

Customer Name:: Avdhut

Price: \$36.97

Lorem ipsum, dolor sit amet consectetur adipisicing elit. Atque nihil neque quisquam aut repellendus, dicta vero? Animi dicta cupiditate, facilis provident quibusdam ab quis, iste harum ipsum hic, nemo qui!

CARD NUMBER

123456789123456

MM / YY

12/2024

CVV CODE

NAME ON THE CARD

Avadhut Lad

Sumbit

Make Payment

Welcome to TastyNavigation | /

127.0.0.1:8000/admin/

Adminstration

WELCOME ADMIN: VIEW SITE / CHANGE PASSWORD / LOG OUT

Welcome to TastyNavigation

AUTHENTICATION AND AUTHORIZATION

Groups

+ Add

Change

Users

+ Add

Change

HOME_APP

Contactss

+ Add

Change

Registration_datas

+ Add

Change

RECOMMENDATION

Cart items

+ Add

Change

Contactss

+ Add

Change

Menus

+ Add

Change

Recent actions

My actions

✖

avadhut@gmail.com's Peda

Cart Item

✖

avadhut@gmail.com's Peda

Cart Item

✖

Mayur@123's Paneer Tikka

Cart Item

✖

Mayur@123's Palak Paneer

Cart Item

✖

Mayur@123's Shahi Paneer

Cart Item

✖

Mayur@123's Malai Kofta

Cart Item

✖

Mayur@123's Kadai Paneer

Cart Item

✖

abc@123

User

✖

abc@123

User

✖

Mayur@123

User

26

3.9 Test Cases:

Test Case ID	Test Objective	Step Description	Input Data	Expected Result	Actual Result	Status
TC_001	User Registration	Navigate to the registration page, fill valid details, click "Register".	Valid username, password, email	User is registered successfully and redirected to the login page.	User was registered successfully. Redirected to login page.	Pass
TC_002	Invalid Registration	Navigate to the registration page, fill invalid details, click "Register".	Invalid username, password, email	User receives an error message and stays on the registration page.	Error message displayed. User on registration page.	Pass
TC_003	Duplicate Registration	Register with an already registered username or email.	Existing username or email	User receives an error message about the duplication.	Error message displayed. Duplicate registration prevented	Pass
TC_004	User Login	Navigate to the login page, enter valid credentials, click "Login".	Valid username and password	User is logged in successfully and redirected to the homepage.	User logged in successfully, redirected to the homepage.	Pass
TC_005	Invalid Login	Navigate to the login page, enter invalid credentials, click "Login".	Invalid username and password	User receives an error message and remains on the login page	Error message displayed. User on login page.	Pass
TC_006	Logout	Log in, navigate to the logout option, click "Logout".	N/A	User is logged out and redirected to the login page.	Logout successful. Redirected to login page.	Pass
TC_007	Display Menu	Log in, navigate to the homepage, check if the menu is displayed.	N/A	The menu is displayed with categories and dishes.	Menu displayed with correct categories and dishes.	Pass
TC_008	Order Dish	Log in, navigate to the menu, add a dish to the cart, proceed to checkout.	Valid username and password, valid dish selection	User can add a dish to the cart and order it.	Dish added to the cart, checkout successful.	Pass
TC_009	Empty Cart	Log in, navigate to the cart, proceed to checkout without adding any dishes.	Valid username and password	User receives an error message and stays on the cart page.	Error message displayed. User on cart page.	Pass
TC_010	Cart Operations	Log in, navigate to the cart, perform operations (add, remove, update).	Valid username and password, valid cart operations	Cart is updated according to the operations.	Cart operations performed successfully.	Pass

TC_011	Payment	Log in, navigate to the payment page, complete the payment process.	Valid username and password	User completes the payment process successfully.	Payment successful. Redirected to order confirmation	Pass
TC_012	Order Confirmation	Log in, place an order, check order confirmation page.	Valid username and password	User sees a confirmation message with order details.	Order confirmed successfully. Order details displayed.	Pass
TC_013	Recommendation	Log in, navigate to the recommendation page, select a recommended dish.	Valid username and password, valid selection criteria	System recommends a dish based on criteria, user selects it.	Dish recommended and selected successfully.	Pass
TC_014	Modify Recommendation Criteria	Log in, navigate to the recommendation page, change criteria, select a recommended dish.	Valid username and password, modified criteria	System recommends a dish based on modified criteria.	Dish recommended based on new criteria.	Pass
TC_015	Chatbot Interaction	Log in, interact with the chatbot.	N/A	Chatbot responds appropriately to user queries.	Chatbot interaction successful.	Pass
TC_016	Order from Chatbot Recommendation	Interact with the chatbot, receive a dish recommendation, place an order.	N/A	User successfully places an order based on chatbot recommendation.	Order placed successfully.	Pass

4. Drawbacks and Limitations

- a Limited Restaurant Scope:** Tastynavigator is tailored for a single restaurant, limiting its applicability to a broader range of dining establishments. The platform's effectiveness relies heavily on the menu diversity and features offered by the specific restaurant it caters to.
- b Dependency on Internet Connectivity:** As a web-based application, Tastynavigator is dependent on stable internet connectivity. Users may face limitations in accessing the platform and placing orders if they encounter connectivity issues, potentially affecting the overall user experience.
- c Limited Personalization:** Although the Recommendation module aims to provide personalized dish suggestions, the system's ability to truly understand individual preferences may have limitations. Users with unique dietary restrictions or highly specific tastes may not find the recommendations entirely tailored to their needs.
- d Feedback Authenticity:** The Feedback and Review module relies on user-generated content, and there may be instances of biased or inaccurate feedback. Authenticity and reliability of reviews could be compromised, potentially impacting the credibility of the recommendation system.
- e Maintenance Challenges:** Continuous updates to the menu, ingredient availability, and pricing may pose challenges for maintaining accurate information within Tastynavigator. Regular maintenance is essential to ensure the system reflects realtime data and provides a reliable experience for users.
- f Learning Curve:** Users unfamiliar with digital ordering systems may experience a learning curve when navigating Tastynavigator. The platform's success relies on its intuitiveness, and efforts should be made to ensure ease of use for users of varying technical backgrounds.
- g Restaurant-Specific Integration:** For Tastynavigator to function optimally, a seamless integration with the restaurant's existing systems, such as inventory management and order processing, is essential. Incompatibilities or disruptions in this integration may hinder the efficiency of the platform.
- h Scalability Challenges:** If the restaurant experiences significant growth or changes, the scalability of Tastynavigator may become a concern. The system should be adaptable to accommodate increased user traffic, menu expansions, and other operational changes over time.

Acknowledging these drawbacks and limitations allows for a proactive approach to addressing challenges, ensuring that Tastynavigator evolves into a robust and resilient platform that consistently meets the needs of both users and restaurant administrators.

5. Future Enhancements

- **Multi-Restaurant Support:** Introduce functionality to support multiple restaurants, broadening the platform's scope and catering to users looking for diverse dining options within a single application.
- **Offline Mode:** Implement an offline mode that allows users to browse the menu and place orders even in the absence of internet connectivity, enhancing the accessibility and reliability of Tastynavigator.
- **Cross-Device Optimization:** Optimize the user interface to ensure a consistent and seamless experience across various devices, including smartphones, tablets, and desktops, addressing potential limitations related to device compatibility.
- **Advanced Personalization:** Enhance the Recommendation module to incorporate machine learning algorithms for more sophisticated personalization, taking into account user behavior, historical preferences, and real-time data for more accurate suggestions.
- **Verified Reviews:** Introduce a verification mechanism for user reviews to enhance the credibility of feedback. This could involve user authentication or other measures to ensure the authenticity of reviews.
- **Automated Data Updates:** Implement automated processes for regular updates to menu items, pricing, and other relevant information, reducing the need for manual maintenance and ensuring that the system reflects real-time data.
- **Enhanced Security Measures:** Strengthen security protocols to safeguard user data, introducing encryption measures, secure payment gateways, and regular security audits to protect against potential threats and enhance user confidence.
- **User Onboarding and Support:** Develop a user-friendly onboarding process and provide robust user support mechanisms to assist those who may be less familiar with digital ordering systems, reducing the learning curve for new users.
- **Dynamic Integration Framework:** Implement a flexible integration framework that can adapt to changes in the restaurant's systems, ensuring seamless compatibility and reducing potential disruptions in the event of operational changes or expansions.
- **Scalability Architecture:** Design the system with scalability in mind, considering the potential growth in user traffic and menu expansions. This involves deploying scalable infrastructure and architecture to accommodate increased demand and operational changes.
- These proposed enhancements aim to address current limitations, improve user experience, and ensure that Tastynavigator remains adaptable to evolving user needs and industry trends.

6. Conclusion:

In conclusion, Tastynavigator stands as a promising endeavor to redefine the dining experience within a single restaurant. While the system exhibits notable strengths in streamlining dish selection and enhancing user engagement, there are acknowledged limitations. The proposed enhancements, encompassing multirestaurant support, offline functionality, advanced personalization, and robust security measures, among others, aim to elevate Tastynavigator into a more versatile, reliable, and user-centric platform. The journey continues towards creating a digital culinary companion that not only simplifies the decision-making process but also adapts to the evolving expectations of modern diners.

7. Bibliography:

Website Reference:

<https://docs.djangoproject.com/en/>

[0/](#)

<https://stackoverflow.com/question>

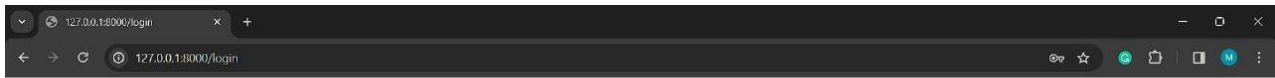
[s/tagged/django](#)

<https://www.tutorialspoint.com/dja>

[ngo/index.htm](#)

8. Annexures

ANNEXURE 1 : USER INTERFACE SCREENS (with validation)



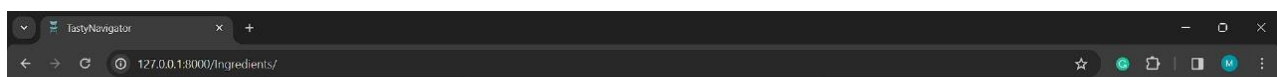
Login

Invalid cradintanl

[Forgot password?](#)

Sumbit

[Don't have an account? Sigup now](#)



TASTYNAVIGATOR

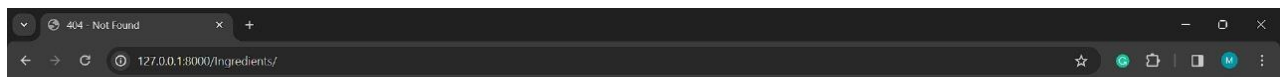
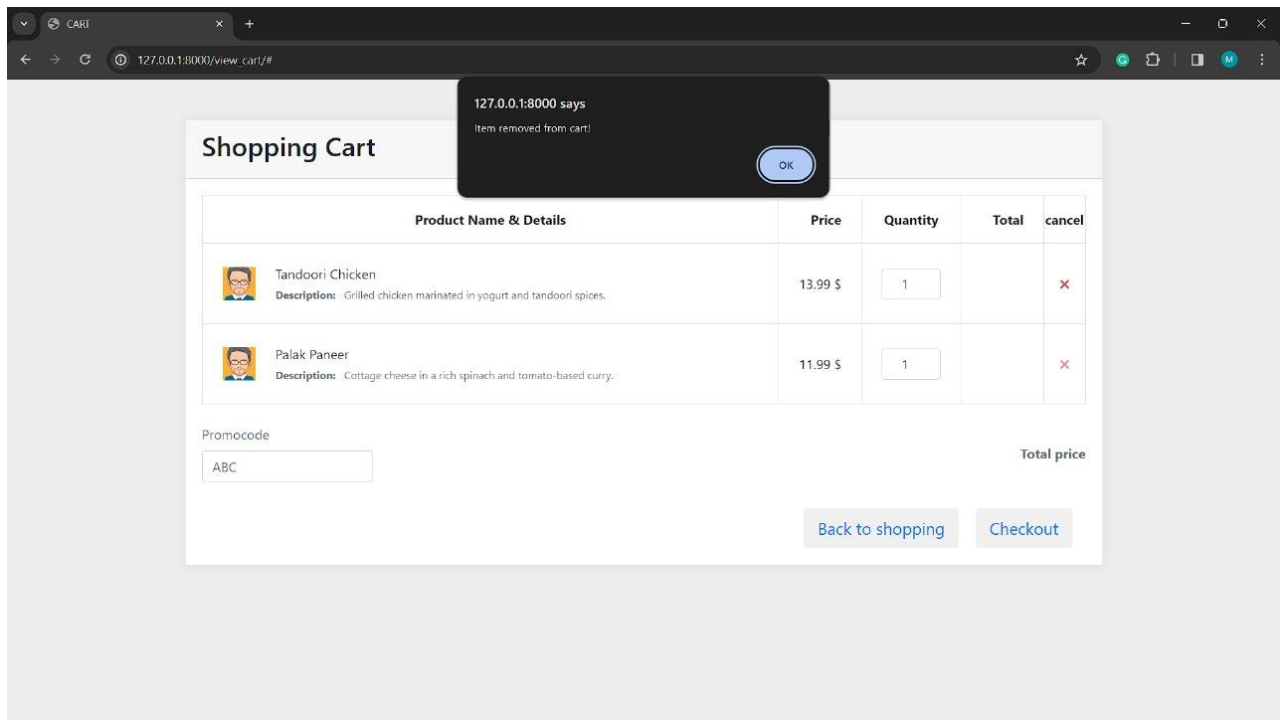
127.0.0.1:8000 says

Item added to cart!

OK

SR.NO	DISH ID	DISH NAME	DESCRIPTION	INGREDIENTS	PRICE	CALORIES	CUISINE	USER RATING	CATEGORY	ADD
1	2	Paneer Tikka	Grilled cubes of paneer marinated in yogurt and spices.	paneer yogurt spices	10.99\$	400	Indian	3.3	Veg	Add to cart
2	12	Palak Paneer	Cottage cheese in a rich spinach and tomato-based curry.	paneer spinach tomatoes spices	11.99\$	400	Indian	3.5	Veg	Add to cart
3	1062	Shahi Paneer	Rich and indulgent paneer curry made with cashews, cream, and aromatic spices.	paneer cashews cream spices	17.99\$	300	Indian	4.7	Veg	Add to cart
4	7	Malai Kofta	Deep-fried vegetable balls in a creamy cashew-based curry.	paneer potatoes cashews cream	12.99\$	500	Indian	4.6	Veg	Add to cart
5	1072	Kadai Paneer	Spicy and flavorful paneer curry cooked in a traditional Indian kadai.	paneer bell peppers onion tomato spices	17.99\$	300	Indian	4.1	Veg	Add to cart

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OOPS! No Dish In Your Criteria

SORRY!

WE ARE SORRY, BUT THE DIHS IS
NOT AVAILABEL CRITERIA.

ANNEXURE 3 : SAMPLE PROGRAM CODE

```
# Create your views here.
def recommendation(request):
    menus = Menu.objects.all()

    context = {
        'menus': menus
    }

    return render(request, 'recommendation.html', context)
#handling the constact us page
def handlecontact(request):
    if request == "POST":
        name = request.POST['name']
        mobile = request.POST['mobile']
        email = request.POST['email']
        message = request.POST['message']
        contact = Contacts(name=name,mobile=mobile,email=email,message=message)
        cont
#this is filtering the catagoris wise recommendation
def filter(request):

    if request.method == "POST":
        mincal = float(request.POST.get('mincal'))
        maxcal = float(request.POST.get('maxcal'))
        minprice = float(request.POST.get('minprice'))
        maxprice = float(request.POST.get('maxprice'))
        userrating = float(request.POST.get('userrating'))
        # Connect to the database and fetch data
        # Make sure to replace the connection parameters with your actual database
credentials
        db_config = {
            'user': 'root',
            'password': 'root',
            'host': 'localhost',
            'database': 'tastynavigator',
            #'port' : 3306,

        }

        menu_dish = Menu.objects.all()

        df = pd.DataFrame(list(menu_dish.values()))
```

```
"mysql+mysqlconnector://{db_config['user']}:{db_config['password']}@{db_config['host']}/{db_config['database']}")
```

```
engine = mysql.connector.connect(
    host=db_config['host'],
    user=db_config['user'],
    password=db_config['password'],
    database=db_config['database']
)"""
# Filter the dataframe based on user inputs
filtered_df = df[
    (df['calories'] >= min_calories) & (df['calories'] <= max_calories) &
    (df['price'] >= min_price) & (df['price'] <= max_price) &
    (df['user_rating'] >= min_user_rating)
]

# Check if there are dishes in the filtered criteria
if not filtered_df.empty:

    # Data preprocessing for the filtered data
    # X_filtered = filtered_df[['calories', 'price', 'user_rating']]
    # scaler = StandardScaler()
    # X_filtered_scaled = scaler.fit_transform(X_filtered)

    features = ['calories', 'price', 'user_rating']
    X_filtered = filtered_df[features]
    scaler = StandardScaler()
    X_filtered_scaled = scaler.fit_transform(X_filtered)

    # Model training on the filtered data
    model = NearestNeighbors(n_neighbors=5,
                             algorithm='ball_tree') # Use neighbors for a more accurate
distance measure
    model.fit(X_filtered_scaled)

    # Set a fixed radius value (replace with different values)
    radius = 18.0 # You can experiment with different radius values

    # Use the fixed radius value
    user_inputs_scaled = scaler.transform([[max_calories, max_price,
min_user_rating]])

    # Find similar dishes within a distance threshold
    indices = model.radius_neighbors(user_inputs_scaled, radius=radius,
```

```

return_distance=False)

# Display recommendations

# ...

if len(indices[0]) > 0:
    menu_list = []
    print("Recommended dishes:")

    for idx in indices[0]:
        recommended_dish = filtered_df.iloc[idx]

        # Calculate and display the score of the individual recommendation
        score = 1 / (1 + model.kneighbors([X_filtered_scaled[idx]])[0].mean())
        print("Score: {score:.2f}")

    menu_list.append({
        'id': recommended_dish['id'],
        'dish_name': recommended_dish['dish_name'],
        'calories': recommended_dish['calories'],
        'price': recommended_dish['price'],
        'user_rating': recommended_dish['user_rating'],
        'description': recommended_dish['description'],
        'ingredients': recommended_dish['ingredients'],
        'category': recommended_dish['category'],
        'cuisine': recommended_dish['cuisine'],
        'score': score
    })

    print("-----")

# Calculate accuracy of recommendations
accuracy = len(indices[0]) / len(filtered_df) * 100
context = {'menu_list': menu_list}

return render(request, 'recommendation.html', context)

print("Accuracy of recommendations: {accuracy:.2f}%")
else:
    print("No dishes found within the specified criteria.")
return render(request, 'filter.html')

```

```

def Ingredients(request):
    context = {} # Initialize context
    if request.method == "POST":
        ingredients = request.POST.get('ingredients')

        # Connect to the MySQL database
        db_connection = mysql.connector.connect(
            host="localhost",
            user="root",
            password="root",
            database="tastynavigator"
        )

        # Fetch data from the menu table
        newdata_query = "SELECT * FROM menu"
        newdata_df = pd.read_sql_query(newdata_query, db_connection)

        # Pre-process menu table
        newdata_df['ingredients'] = newdata_df['ingredients'].str.lower()
        newdata_df['ingredients'] = newdata_df['ingredients'].str.replace(',', ' ')

        # Create a TF-IDF vectorizer
        tfidf_vectorizer = TfidfVectorizer(stop_words='english')
        tfidf_matrix = tfidf_vectorizer.fit_transform(newdata_df['ingredients'])
        # Function to get dish recommendations based on user-entered ingredients
        def get_recommendations(user_inputs, num_recommendations=20):
            user_inputs = user_inputs.lower().split(',')
            user_tfidf = tfidf_vectorizer.transform(user_inputs)
            cosine_sim_user = linear_kernel(user_tfidf, tfidf_matrix).flatten()
            # Get indices of dishes sorted by similarity
            sim_indices = cosine_sim_user.argsort()[::-1]
            # Filter recommendations to include only dishes with all user-input ingredients
            filtered_recommendations = []
            for i in sim_indices:
                if i < len(newdata_df):
                    if all(ingredient in newdata_df['ingredients'].iloc[i].split() for ingredient in
user_inputs):
                        dish_info = newdata_df.iloc[i]
                        score = cosine_sim_user[i]
                        filtered_recommendations.append((dish_info, score))
            # Check if there are recommendations
            if not filtered_recommendations:
                print("No recommendations found.")

```