

# IS-F341 Software Engineering (II - 2020-21)

## T06- Ratatouille

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## Section 1 – Project Overview

Ratatouille provides a platform for talented and skilled cooks to monetize their skills and people looking for affordable and original food. Especially after Covid-19, many people are now preferring to stay at home and this is a great opportunity for talented/aspiring cooks to stay in the safety of their home, provide great meals to a diverse population as well as build a thriving business without having to put up with the risk of establishing an enterprise. This is in contrast to some already existing food delivery apps that only support established restaurants. The platform lowers the barrier of entry for these talented and skilled cooks into the food business and exposes them to a large consumer audience with similar interests.

The platform aims to provide a seamless and enjoyable interaction between the consumers and the chefs. The platform further aims to create a sense of belongingness and a culture of growing together rather than just a business endeavor for profits.

Food as we know is an important part of our lives, it provides comfort even during the worst of times. Cooking is an art and a form of self expression for many, it helps create a bridge between people, cultures and ethnicities and a safe haven for experimentation. It is from these experiments that the greatest dishes are born.

*Do you have a dish that you would like the world to taste?*

*Stuck at home? craving to eat original, affordable and healthy food ?*

*Sign up right away!*

While food enthusiasts can browse through delicious menus and order to their heart's content, chefs can create anything they feel will keep customers coming back for more. Moreover, this isn't just about buying and selling, chefs can post recipes they wish to share, while customers can like and comment. However, we feel knowledge shouldn't only be shared by the knowledgeable, and that is why customers too have the feature to post recipes they wish to share with the world.

And finally our motto, "Not everyone can become a great chef, but a great chef can come from anywhere."

## Section 2 – Existing Work System

### AS-IS Work System Snapshot

Customers	Product/Services	
<ul style="list-style-type: none"> <li>• Foodies</li> <li>• Chefs</li> </ul>	<ul style="list-style-type: none"> <li>• Food</li> <li>• Shop registration</li> </ul>	
Major Activities and Processes		
<ul style="list-style-type: none"> <li>• Chefs acquire permissions to set up a shop</li> <li>• Chefs register themselves with other Third party apps</li> <li>• Chefs pay commissions to third party apps for availing their services</li> <li>• Chefs compete with established big Brick-and-mortar restaurants online.</li> <li>• Foodies order from same restaurants near them</li> <li>• The foodies rate restaurants they ordered from.</li> </ul>		
Participants	Information	Technologies
<ul style="list-style-type: none"> <li>• Chefs</li> <li>• Third party apps</li> </ul>	<ul style="list-style-type: none"> <li>• Menu</li> <li>• Sign In information (email, name, password)</li> <li>• Transaction details</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• GPS</li> </ul>

## Problems/Challenges

Participant/ Customer	Description of problems/challenges
Foodies	Dont have many options to choose from
Foodies	Cannot rate the chefs/dishes individually.
Foodies	Want a platform to share recipes with like-minded people and also get some recipe ideas directly from the chefs
Foodies	Sometimes delivery personnel cannot get to the correct location due to discrepancies in address.
Chefs	want easy process to set up a business to sell food to pursue their passion
Chefs	Don't want to pay heavy commissions to third party apps
Chef	Needs technical support when facing any doubts or problems
Chef	Wants display of statistics about sales and likes on recipe posts.
Chef	Wants proper feedback from customers to enhance their dishes.

## User Personas

Richa Dixit (Foodie)	"Wish I could get affordable comfort food"		
	<p>Capabilities</p> <ul style="list-style-type: none"> <li>- Good at coding and developing agile systems</li> <li>- Active social media user</li> <li>- Can handle online shopping and payments with ease.</li> </ul>	<p>Goals/Objectives</p> <ul style="list-style-type: none"> <li>- Use the app to find healthy homemade food options</li> <li>- Preferably get the food delivered to her doorstep</li> <li>- Try different cuisines</li> <li>- Get ingredient details about every dish.</li> </ul>	
<p>Demographics</p> <p>Age: 28</p> <p>Education: M.Tech</p> <p>Work: SDE at TCS</p> <p>Family: Single</p> <p>Location: Hyderabad</p>	<p>Brief bio:</p> <p>Richa is a hard working SDE, who often has a lot of work pressure during certain phases of time, trying to meet deadlines. Having worked for a few years, she is trying hard to get a promotion.</p> <p>She lives in a shared apartment with 2 other roommates and it's difficult for her to make her own meals quite often. Being a gym goer, she is always on the lookout for healthy food options which are easy to make or affordable to buy.</p>	<p>Frustrations/Pain points</p> <ul style="list-style-type: none"> <li>- the waiting time for getting the food delivered during peak hours</li> <li>- Unhealthy food sold in most restaurants or through other home food delivery apps</li> <li>- Expensive to order often</li> <li>- Cannot try different unknown dishes as she is allergic to certain ingredients.</li> </ul>	

Siddharth Kumar (Foodie)	"I love experimenting with ingredients"		
	<p>Capabilities</p> <ul style="list-style-type: none"> <li>- Great as a data science analyst.</li> <li>- Has entrepreneurship skills</li> <li>- Has good social skills and is always eager to make new friends</li> </ul>	<p>Goals/Objectives</p> <ul style="list-style-type: none"> <li>- to use the app to view and share recipes</li> <li>- Connect with the chefs and order and try the food that he finds interesting</li> <li>- Experiment with ingredients and get feedback from other users in the platform.</li> </ul>	
<p>Demographics</p> <p>Age: 32</p> <p>Education: Masters in DS</p> <p>Work: Self-employed</p> <p>Family: Single</p> <p>Location: Hyderabad</p>	<p>Brief bio:</p> <p>Siddharth from a very young age used to live with his grandmother while his parents had to travel often. He used to see his grandmother cooking and had developed an innate love for the same at a very young age. After getting his Masters, he started his own startup. Being a self-employed person, and self-proclaimed food enthusiast he has some spare time to pursue his hobby of cooking</p>	<p>Frustrations/Pain points</p> <ul style="list-style-type: none"> <li>- Doesn't always get enough time to pursue his passion in cooking.</li> <li>- While he doesn't want to sell food, he wants a platform to share his food ideas.</li> </ul>	

Maya D'souza (Aspiring chef)	<p style="text-align: center;">“I want to put a smile on their faces when they try my dish and feel the warmth of love”</p>	
	<p><b>Capabilities</b></p> <ul style="list-style-type: none"> <li>- Can cook large amounts of food at the same time.</li> <li>- Can use the computer and likes shopping online</li> <li>- Fast learner and take up new skills fast.</li> </ul>	<p><b>Goals/Objectives</b></p> <ul style="list-style-type: none"> <li>- Set up a shop to showcase her menu to the customers</li> <li>- Have a portal that brings her closer to running a thriving business</li> <li>- Keep track of customer feedback to improve her dishes.</li> </ul>
<b>Demographics</b> Age: 36 Education: B. Arch Work: Homemaker Family: Married with 1 child Location: Hyderabad	<p><b>Brief bio</b></p> <p>Maya is a happy homemaker who married at a young age and gave all her time for supporting her family. When her husband got laid off during the pandemic, things grew difficult. Being an excellent cook, she plans on selling the food she makes to add to the income of her household while pursuing her passion of cooking. As an aspiring chef with no means of investment, Maya is in the look for a platform that helps her achieve this.</p>	<p><b>Frustrations/Pain points</b></p> <ul style="list-style-type: none"> <li>- She needs to carry out all her cooking activities at home and doesn't want to rent any place as of yet</li> <li>- She wants advice from people in the business to help her understand customer demands.</li> </ul>

Anuradha Pradhan (Retired chef)	“Age isn't a barrier to my dreams”	
	<p><b>Capabilities</b></p> <ul style="list-style-type: none"> <li>- Knows about the catering business</li> <li>- Can cook dishes very fast due to her experience</li> <li>- Can type and has basic computer skills</li> </ul>	<p><b>Goals/Objectives</b></p> <ul style="list-style-type: none"> <li>- use the app to post her recipes</li> <li>- use the app to read other's recipes for inspiration</li> <li>- sell some of her dishes in a shop</li> </ul>
<p><b>Demographics</b></p> <p>Age: 58</p> <p>Education: B.A.</p> <p>Work: Retired cook at catering service</p> <p>Family: married, 2 children</p> <p>Location: Mumbai</p>	<p><b>Brief bio</b></p> <p>Anuradha is very enthusiastic about cooking and has been a cook at a catering service for some years. Now that she has retired and has some health issues she can no longer go outside her home to work as a cook. Now at home she is trying to still pursue her passion and wants to put her skills to use. Locally known for her innovative and amazing dishes, she wishes to use the platform to share her recipes to a larger group of people and also create a shop.</p>	<p><b>Frustrations/Pain points</b></p> <ul style="list-style-type: none"> <li>- A little skeptical to use a computer application and needs time to learn</li> <li>- Wants to create an affordable price range that appeals to customers but lacks the knowledge to do so.</li> </ul>

Dev Malhotra (Admin)	<p>“Create dynamic reports that help aspiring chefs grow their business”</p>		
	<b>Capabilities</b> <ul style="list-style-type: none"> <li>- Proficient in MS Excel</li> <li>- Can analyse marketing and sales data and provide necessary plans to implement.</li> <li>- Good at networking with people</li> </ul>	<b>Goals/Objectives</b> <ul style="list-style-type: none"> <li>- To analyse how different chefs are performing and hence keep a track of sales.</li> <li>- Create weekly reports with analytics and advice chefs on sales</li> <li>- Plan discount offers and promotional events based on reports.</li> </ul>	
<b>Demographics</b> Age:45 Education: Bachelor's Work: Marketing Analyst Family: Married with 2 kids Location: Hyderabad	<b>Brief bio</b> Dev has always strived to be a part of projects that appeal to him in terms of innovation and usefulness. He has 5 years of work experience with Flipkart. Dev loves to watch football during his leisure time and is a volunteer at Old age India.	<b>Frustrations/Pain points</b> <ul style="list-style-type: none"> <li>- Does not have some of the new edge technology that is being used recently.</li> <li>- Has to manually keep a track of a large amount of data.</li> <li>- Errors are common due to non-availability of a dedicated database for storing all the data.</li> <li>- A lot of time is wasted in rechecking statistics and data whenever an error in calculation.</li> </ul>	

## Section 3 – System Scope

### TO-BE Work System Snapshot

#### (moderate support)

Customers	Product/Services	
<ul style="list-style-type: none"> <li>• Chef</li> <li>• Food Enthusiast</li> <li>• Admin</li> </ul>	<ul style="list-style-type: none"> <li>• Food Ordering</li> <li>• Public Forum</li> <li>• Statistics</li> <li>• Sales and revenue reports</li> </ul>	
Major Activities and Processes		
<ol style="list-style-type: none"> <li>1. Chefs and Food Enthusiasts login to the platform using their google account or by using their email(participant credentials)</li> <li>2. Chefs set up their own virtual shops and create and edit their menu</li> <li>3. Chef add private menus that are not be visible to the public</li> <li>4. Chefs visit other chef's virtual shops and view their public menus</li> <li>5. Chefs offer discounts on items in their virtual shops</li> <li>6. Chefs receive and manage orders from food enthusiasts</li> <li>7. Chefs are displayed their performance and statistics</li> <li>8. Food Enthusiasts view order food from various virtual shops using portal</li> <li>9. Food Enthusiast and chefs post recipes and pictures to the public forum</li> <li>10. Food Enthusiast and chefs upvote and comment on posts in the public forum</li> <li>11. Food Enthusiast rate and review shops, chefs and food items</li> <li>12. Food enthusiast goes to the location of the shop to pick up their order</li> <li>13. Food enthusiasts order food</li> <li>14. Admin moderates posts and menus</li> <li>15. Admin analyses statistics using performance and sales data</li> <li>16. Admin reviews sales and performance reports</li> <li>17. Admin offers discounts on dishes based on sales data.</li> <li>18. Admin views and manages transactions</li> </ol>		
Participants	Information	Technologies
<ul style="list-style-type: none"> <li>• Chef</li> <li>• Food Enthusiast</li> <li>• Admin</li> </ul>	<ul style="list-style-type: none"> <li>• Menus</li> <li>• Participant credentials</li> <li>• Performance data</li> <li>• Sales data</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• qr code and scanner for payment</li> <li>• Google map</li> </ul>

## TO-BE Work System Snapshot (maximum support)

Customers	Product/Services	
<ul style="list-style-type: none"> <li>● Chef</li> <li>● Food Enthusiast</li> <li>● Admin</li> </ul>	<ul style="list-style-type: none"> <li>● Setting up virtual shops</li> <li>● Ordering food portal</li> <li>● Public Forum</li> <li>● Statistics report</li> <li>● Sales and revenue reports</li> </ul>	
<b>Major Activities and Processes</b>		
<ol style="list-style-type: none"> <li>1. Chefs and Food Enthusiasts login to the platform using their google account or by using their email(participant credentials).</li> <li>2. Chefs set up their own virtual shops and create and edit their menus.</li> <li>3. Chef adds private menus that are not visible to the public.</li> <li>4. Chefs visit other chef's virtual shops and view their public menus.</li> <li>5. Chefs offer discounts on items in their virtual shops.</li> <li>6. Chefs receive orders from food enthusiasts.</li> <li>7. Chefs can see their performance and statistics.</li> <li>8. Chefs add nutrient details to menu items.</li> <li>9. Chefs tag dishes on the basis of food categories and cuisines.</li> <li>10. Food Enthusiasts view and order food from various virtual shops using a portal.</li> <li>11. Food Enthusiast and chefs post recipes and pictures to the public forum.</li> <li>12. Food Enthusiast and chefs upvote and comment on posts in the public forum.</li> <li>13. Food Enthusiast rate and review shops and food items.</li> <li>14. Food enthusiasts go to the location of the shop to pick up their order or get it delivered</li> <li>15. Through the delivery service.</li> <li>16. Food enthusiasts order food.</li> <li>17. Food enthusiast are displayed the top dishes and chefs of the week, month and year</li> <li>18. Food enthusiasts are shown top chefs and dishes in their area.</li> <li>19. Food enthusiasts are recommended other dishes based on their current order.</li> <li>20. Food enthusiasts are able to sort and filter through dishes, menus and virtual shops based on different categories.</li> <li>21. Admin moderates posts and menus.</li> <li>22. Admin analyses statistics.</li> <li>23. Admin offers discounts on dishes based on sales data.</li> <li>24. Admin reviews sales and performance reports using transaction,sales and performance data</li> </ol>		
Participants	Information	Technologies
<ul style="list-style-type: none"> <li>● Chef</li> <li>● Food Enthusiast</li> <li>● Admin</li> </ul>	<ul style="list-style-type: none"> <li>● Menus</li> <li>● Participant credentials</li> <li>● Performance data</li> <li>● Sales data</li> <li>● Transactions</li> </ul>	<ul style="list-style-type: none"> <li>● Computer</li> <li>● qr code and scanner for payment</li> <li>● Google map</li> </ul>

## TO-BE Work System Snapshot (selected for project work)

Customers	Product/Services
<ul style="list-style-type: none"> <li>• Chef</li> <li>• Food Enthusiast</li> <li>• Admin</li> </ul>	<ul style="list-style-type: none"> <li>• Setting up virtual shops</li> <li>• Ordering food</li> <li>• Public Forum</li> <li>• Statistics</li> <li>• Sales and revenue reports</li> </ul>
Major Activities and Processes	
<ol style="list-style-type: none"> <li>1. Food Enthusiasts / chefs login to the platform using their google account or by using their email using.</li> <li>2. chefs set up their profile and open up a shop</li> <li>3. Chefs add dishes to the shop's menu</li> <li>4. Chef edits the shop's menu.</li> <li>5. Chef accepts orders from the foodies</li> <li>6. Chefs offer discounts on items in their virtual shops</li> <li>7. Chefs view their performance and statistics of their shops and items</li> <li>8. Chefs add nutrient details to menu items</li> <li>9. Chefs tag dishes on the basis of food categories and cuisines</li> <li>10. Food Enthusiasts view and order food from various virtual shops</li> <li>11. Food enthusiast goes to the location of the shop to pick up their order</li> <li>12. Food Enthusiast rate and review shops and food items</li> <li>13. Food enthusiast view displayed the top dishes and chefs of the week, month and year</li> <li>14. Food enthusiasts sort and filter through dishes, menus and virtual shops based on different categories</li> <li>15. Admin moderates posts and menus</li> <li>16. Admin analyses statistics</li> <li>17. Admin offers discounts on dishes based on sales data</li> <li>18. Admin reviews sales and performance reports using sales and performance data</li> </ol>	

Participants	Information	Technologies
<ul style="list-style-type: none"> <li>• Chef</li> <li>• Food Enthusiast</li> <li>• Admin</li> </ul>	<ul style="list-style-type: none"> <li>• Menus</li> <li>• Participant credentials</li> <li>• Performance data</li> <li>• Sales data</li> </ul>	<ul style="list-style-type: none"> <li>• Computer</li> <li>• Internet</li> </ul>

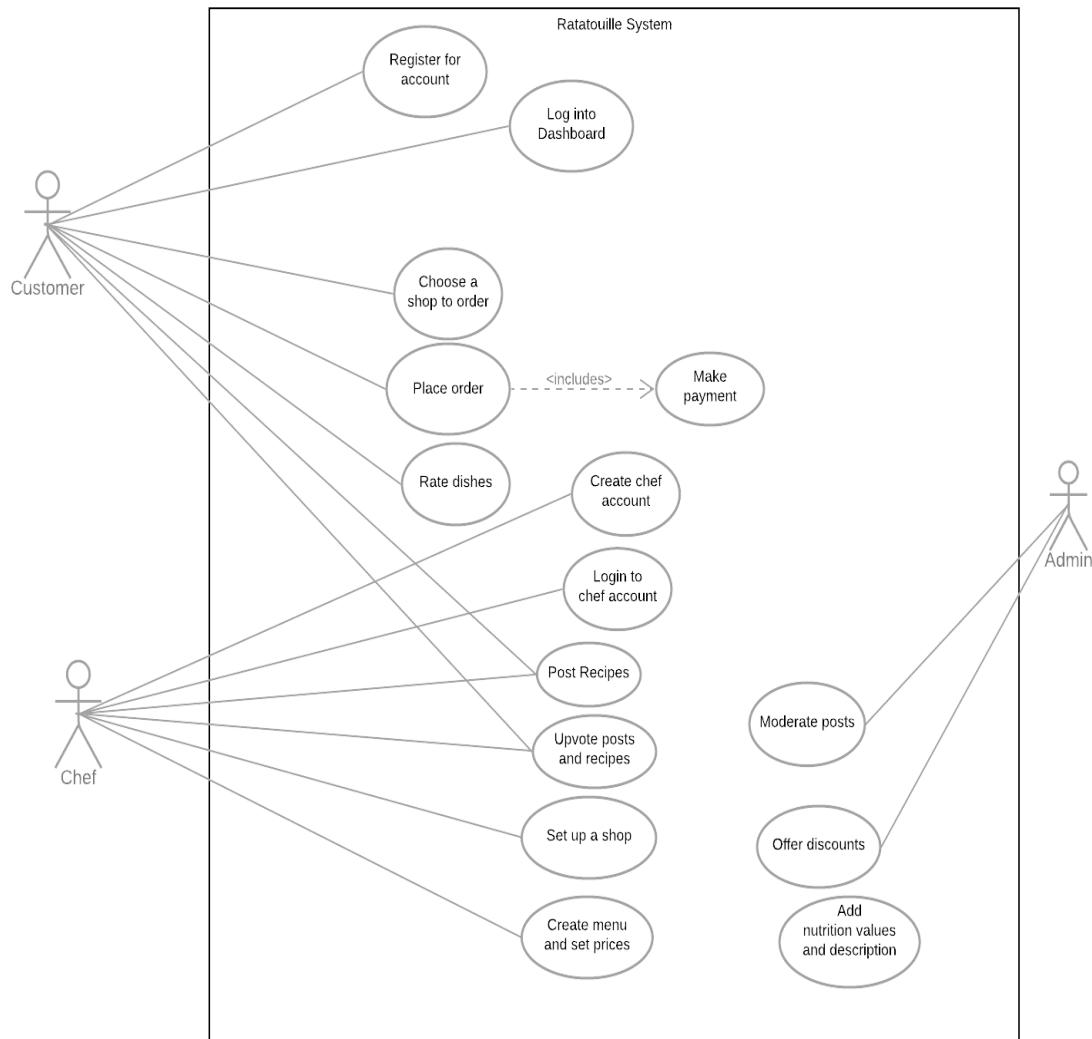
## Section 3 – Product Backlog

As a	I want to	so that
Foodie	create an account	I can view posts and order food
Foodie	view the categories and cuisines on the main page	I can filter based on preference and order food
Foodie	rate and comment on a dish	I can make a informed choice
Foodie	add dishes to a cart	I can check out with the food I wish to place an order for.
Foodie	add delivery options like addresses and cooking instructions	I can personalize the order and get it sent to my doorstep after I order
Foodie	rate dishes i have ordered	it helps in informing others about the dish
Foodie	view the descriptions and the recipes of dishes shared by cooks	I can cook the dish myself if the description interests me
Foodie	up vote and comment on post that i find nice	it is promoted to get attention of more readers/enthusiasts
Foodie	view leaderboards based on likes and comments	to see top recommended recipes and dishes and order them if possible
Foodie	pay using cash/UPI or credit cards	I have the comfort of choice and pay conveniently
Chef	create an account	I can set up a business
Chef	setup a shop	can sell the food i make
Chef	create a menu and set prices	I can inform the customers
Chef	add description and nutrition details of the dishes	The customers can make an informed decision.
Chef	accept orders and notes from customers	I can prepare their order and even personalize it, should they wish to.
Chef	post and share my recipes	other enthusiasts and cooks

		can give their opinions and also probably cook it for themselves
Chef	view posts	I can get new ideas and recipes to try out
Chef	rate and comment on the posts	it helps other users take decisions
Chef	monitor order sales	I can decide the rates and prices better
Admin	view visualized data representations	I can better understand the data
Admin	offer discounts	promote growing businesses
Admin	moderate the postings	questionable post are removed

## Section 4 - Use case modeling

### Use case diagram



## Use case description # 1

Name	<b>Setting up a shop</b>
Description	User sets up a shop
Actors	User
Trigger	The user likes to setup a shop
Preconditions	The user is registered and logged into the portal
Postconditions	User role is changed from foodie to chef
Main course	<ol style="list-style-type: none"> <li>1. User navigates to shop setup page</li> <li>2. System prompts user to enter shop details.</li> <li>3. User enters shop details (AC-1)</li> <li>4. System prompts user to upload pictures (AC-2)</li> <li>5. User uploads pictures</li> <li>6. User sends details to the system for creating the shop(AC-3)(EX-1)</li> <li>7. System constructs a shop object and saves it in the database</li> <li>8. System links the user with the shop</li> <li>9. System fetches the user from the database and changes their role from 'foodie' to 'chef'</li> <li>10. System publishes the shop into the marketplace</li> </ol>
Alternate courses	<p>AC-1: Chef wants to edit the details</p> <ol style="list-style-type: none"> <li>1. Chef edits the details</li> <li>2. Return to MC-3</li> </ol> <p>AC-2: Chef does not want to upload photos</p> <ol style="list-style-type: none"> <li>1. Return to MC-6.</li> </ol> <p>AC-3: Chef adds wrong details:</p> <ol style="list-style-type: none"> <li>1. System prompts the chef to edit the details</li> <li>2. return to MC-3.</li> </ol>
Exceptions	<p>EX-1: Chef does not want to create the shop:</p> <ol style="list-style-type: none"> <li>1. System asks the chef for confirmation</li> <li>2. return</li> </ol>

## Use case description # 2

Name	<b>Adding an Item to a menu</b>
Description	Chef wants to add an item to the menu of their shop
Actors	Chef
Trigger	Chef wants to add an Item to their shop's menu
Preconditions	<ul style="list-style-type: none"> <li>1) User is registered and logged in</li> <li>2) User's role is set to chef</li> <li>3) User setup a shop</li> </ul>
Postconditions	The item is added to the shop menu
Main course	<ol style="list-style-type: none"> <li>1. Chef navigates to his shop (AC-1)</li> <li>2. Chef chooses to add a dish</li> <li>3. System prompts user to enter dish details</li> <li>4. Chef enters dish details (AC-2)</li> <li>5. System prompts user to upload a picture</li> <li>6. Chef uploads a picture</li> <li>7. System constructs a dish object</li> <li>8. System links the dish to shop and stores a reference to dish in the shop menu</li> <li>9. System saves dish to the database (AC-3) (EX-1)</li> </ol>
Alternate courses	<p>AC-1: Chef has no shops</p> <ol style="list-style-type: none"> <li>1. Chef adds a shop</li> <li>2. Return to MC-2</li> </ol> <p>AC-2: The price for the dish is not entered</p> <ol style="list-style-type: none"> <li>1. System prompts for filling the price details</li> <li>2. Return MC-3</li> </ol> <p>AC-3: Chef wants to make changes to the item</p> <ol style="list-style-type: none"> <li>1. Chef makes the required changes</li> <li>2. Return to MC-5</li> </ol>
Exceptions	<p>EX-1: Chef wants to save it as a draft</p> <ol style="list-style-type: none"> <li>1. Chef makes the item private and publishes it</li> <li>2. Return</li> </ol>

### Use case description # 3

Name	<b>Remove Item from a menu</b>
Description	Chef removes an item from a menu
Actors	Chef
Trigger	Chef wants to remove an item from a menu
Preconditions	Chef is logged into the portal
Postconditions	Item is removed from the shop's menu
Main course	<ol style="list-style-type: none"> <li>1. Chef selects the shop's menu.</li> <li>2. Chef selects the item he wants to remove (AC-1)</li> <li>3. Chef chooses the remove item option (EX-1) (AC-2)</li> <li>4. Chef confirms that he wants to remove the item.</li> <li>5. System removes the item from the Chef's menu</li> </ol>
Alternate courses	<p>AC-1: Chef wants to remove multiple items</p> <ol style="list-style-type: none"> <li>1. Chef selects the other items to be removed</li> <li>2. Return to MC-3</li> </ol> <p>AC-2: The item is the only public item on the menu</p> <ol style="list-style-type: none"> <li>1. Chef is notified that he cannot remove the only public item from the menu</li> <li>2. Chef makes another item public</li> <li>3. Return to MC-2</li> </ol>
Exceptions	<p>EX-1: The item is the only item on the menu</p> <ol style="list-style-type: none"> <li>1. Chef is notified that he has to add at least one more public item to remove the current item</li> <li>2. Return</li> </ol>

## Use case description # 4

Name	<b>Creating a post</b>
Description	User (chef/foodie) creates a post
Actors	User (chef/foodie)
Trigger	User wants to create a post to share their recipe
Preconditions	User is registered and logged into the system
Postconditions	The user created post is published to the forum
Main course	<ol style="list-style-type: none"> <li>1. User navigates to the forum</li> <li>2. User chooses the option to create a new post</li> <li>3. System opens a rich-text editor for the user</li> <li>4. System prompts the user to fill the content</li> <li>5. User enters the contents of the post (AC-1)</li> <li>6. System prompts the user to upload a picture</li> <li>7. User uploads a picture</li> <li>8. User submits the post (EX-1)</li> <li>9. System creates a post object and stores a reference to the post in the user's profile</li> <li>10. System saves the post to database</li> <li>11. System publishes the post in the Forum.</li> </ol>
Alternate courses	<p>AC-1: User wants to make changes to the post</p> <ol style="list-style-type: none"> <li>1. User makes the changes</li> <li>2. Return to MC-3</li> </ol>
Exceptions	<p>EX-1: User does not want to post right away</p> <ol style="list-style-type: none"> <li>1. The post is stored as a draft</li> <li>2. Return</li> </ol>

## Use case description # 5

Name	<b>Processing an order</b>
Description	User (foodie/chef) wants to order an item from shops
Actors	User(foodie/chef), chef
Trigger	User would like to order food
Preconditions	User is registered and logged into the forum
Postconditions	Order is carried out
Main course	<ol style="list-style-type: none"> <li>1. User navigates to a shop (EX-1)</li> <li>2. System display shop's menu with dishes(AC-1)</li> <li>3. User adds dishes to cart</li> <li>4. User navigates to the cart</li> <li>5. System prompts user to check out (AC-2)(AC-3)</li> <li>6. User checks their cart details and checkout</li> <li>7. System prompts to select payment method</li> <li>8. User selects payment method</li> <li>9. System prompts user to finish payment (AC-4)</li> <li>10. User completed payment</li> <li>11. System creates an order object and adds a reference to the order form the user and the shop from which the order is placed</li> <li>12. System saves the order in the database</li> <li>13. System notifies the shop from which the order is placed</li> <li>14. Chef prepares the order(EX-3)</li> <li>15. Chef updates the order status</li> <li>16. System notifies the user regarding the order status</li> <li>17. System prompts the user to pick up order when its status is set to 'ready'</li> <li>18. User picks up the order</li> <li>19. System marks the order as completed</li> </ol>
Alternate courses	<p>AC-1: Foodie opened the wrong shop</p> <ol style="list-style-type: none"> <li>1. Return to the prev page</li> <li>2. Return to MC-1</li> </ol> <p>AC-2: Foodie wants to add more items</p> <ol style="list-style-type: none"> <li>3. Return to MC-2</li> </ol> <p>AC-3: Foodie wants to make some changes to the cart</p> <ol style="list-style-type: none"> <li>1. Foodie makes the changes</li> <li>2. Return to MC-6</li> </ol>

	AC-4: Foodie does not have money in their wallet 1. Foodie adds money to their wallet (EX-2) 2. Return MC-9
Exceptions	EX-1: There are no shops on the forum 1. The foodie is notified that there are currently no shops on the forum 2. Return EX-2: Foodie does not add money to their wallet 1. The cart items are saved 2. Return EX-3: The food item cannot be prepared now 1. the chef request admin to cancel order 2. Foodie is given a refund 3. Order is cancelled 4. return

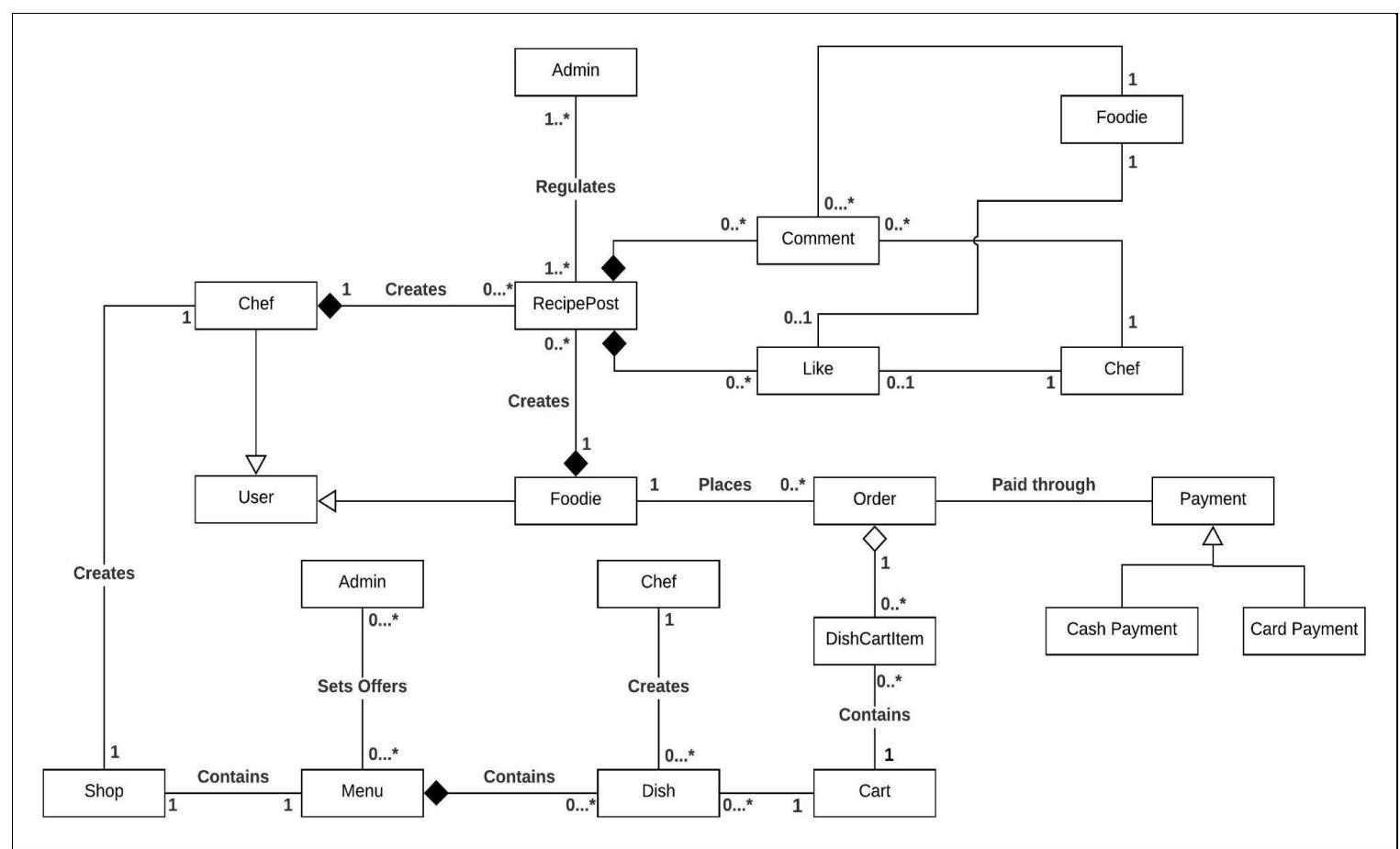
## Use case description # 6

Name	<b>Monitoring Performance analytics</b>
Description	Admin analyses and monitors performance and analysis reports on profits, reach and other statistics
Actors	Admin
Trigger	Admin wants to view the performance and analysis reports.
Preconditions	Admin is signed in with appropriate credentials
Postconditions	Admin can access and view the performance and analysis reports.
Main course	<ol style="list-style-type: none"> <li>1. Admin navigates to their dashboard</li> <li>2. Admin requests for generation of the Performance Data</li> <li>3. System processes data from the database and returns visualised data (AC-1)</li> <li>4. Admin analyses and processes the data</li> </ol>
Alternate courses	AC-1: Error During Generation of Visualisation: <ol style="list-style-type: none"> <li>1. System Prompts the Admin to Request again</li> <li>2. return to MC-3.</li> </ol>
Exceptions	

## Section 5 – Class diagram

### Classes

<b>Things</b>	Dish, DishDetails, DishCartItem, FoodItem, Menu
<b>People, Role or Organization</b>	Foodie, Chef, Admin, User
<b>Places</b>	Shop
<b>Events or Transactions</b>	Payment, Cash Payment, Card Payment, RecipePost, Cart, Order, Comment, Like



### Attributes and operations

Class name	Attributes	Operations
User	userId, email, username, password, avatar, role, shopId, cart[dishId, quantity]	+registerUser() +authenticateUser() +deleteUser() +changePassword() +getCart() +addToCart(dishId) +reduceQuantity(dishId) +removeFromCart(dishId) +clearCart(dishId)
Profile	userId, name, username, city, state, country, about, [cuisines], [specialities], socials{youtube, twitter, facebook, instagram}	+getUserProfile() +createProfile() +updateProfile() +getAllProfiles() +getProfile(userId) +deleteProfile()
Post	userId, title, text, imageUrl, username, name, avatar, likes[userId], comments[usreId, text, name, username, avatar]	+addPost() +getAllPosts() +getPost(postId) +deletePost(postId) +likePost() +unlikePost() +addComment() +deleteComment(commentId)

Shop	chefId, shopId, name, description, address, [imageUrl], [tags], minOrderAmount, costForOne, [dishes]	+setupShop() +updateShop() +getCurrentChefsShop() +updateChefsShop() +getAllShops() +getShop(shopId) +getShop(chefId) +deleteShop() +isOpen()
Dish	dishId, name, description, chefId, shopId, [tags], imageUrl, price, category, subcategory, discount, isVeg	+addDish() +deleteDish(dishId) +getDish(dishId) +updateDish(dishId) +getAllDishes()
Order	userId, shopId, totalAmount, dishes[dishId, quantity], paymentStatus, paymentType, orderStatus	+placeOrder() +getUsersOrders() +getShopsOrders() +updateOrderStatus() +updatePaymentStatus() +cancelOrder()
Payment	paymentID, paymentAmount, orderID, paymentMode, paymentDate	+pay(paymentAmount, paymentMode) +setPaymentMethod(paymentMethod) +getPayment(paymentId) +cancelPayment()

### NoSQL documents

Collection name	Document Structure (field names)
users	username, email, password, avatar, shopId, role, cart[dishId, quantity], dateCreated
profiles	userId, name, username, avatar, city, state, country, about, [cuisines], [specialities], socials{youtube, twitter, facebook, instagram}, [posts], dateCreated
posts	userId, title, text, imageUrl, likes[userId], comments[text, userId, name, username, avatar, dateCreated], dateCreated
shops	userId, name, description, [dish], [imageUrl], [tags], address, minOrderAmount, costForOne, dateCreated
dishes	shopId, name, description, price, category, subcategory, discount, isVeg, imageUrl, [tags], dateCreated
orders	userId, shopId, shopName, totalAmount, [dishId, dishName, dishDesc, price, discount, quantity], paymentStatus, paymentType, orderStatus, dateCreated

#### Comments on embedding/referencing

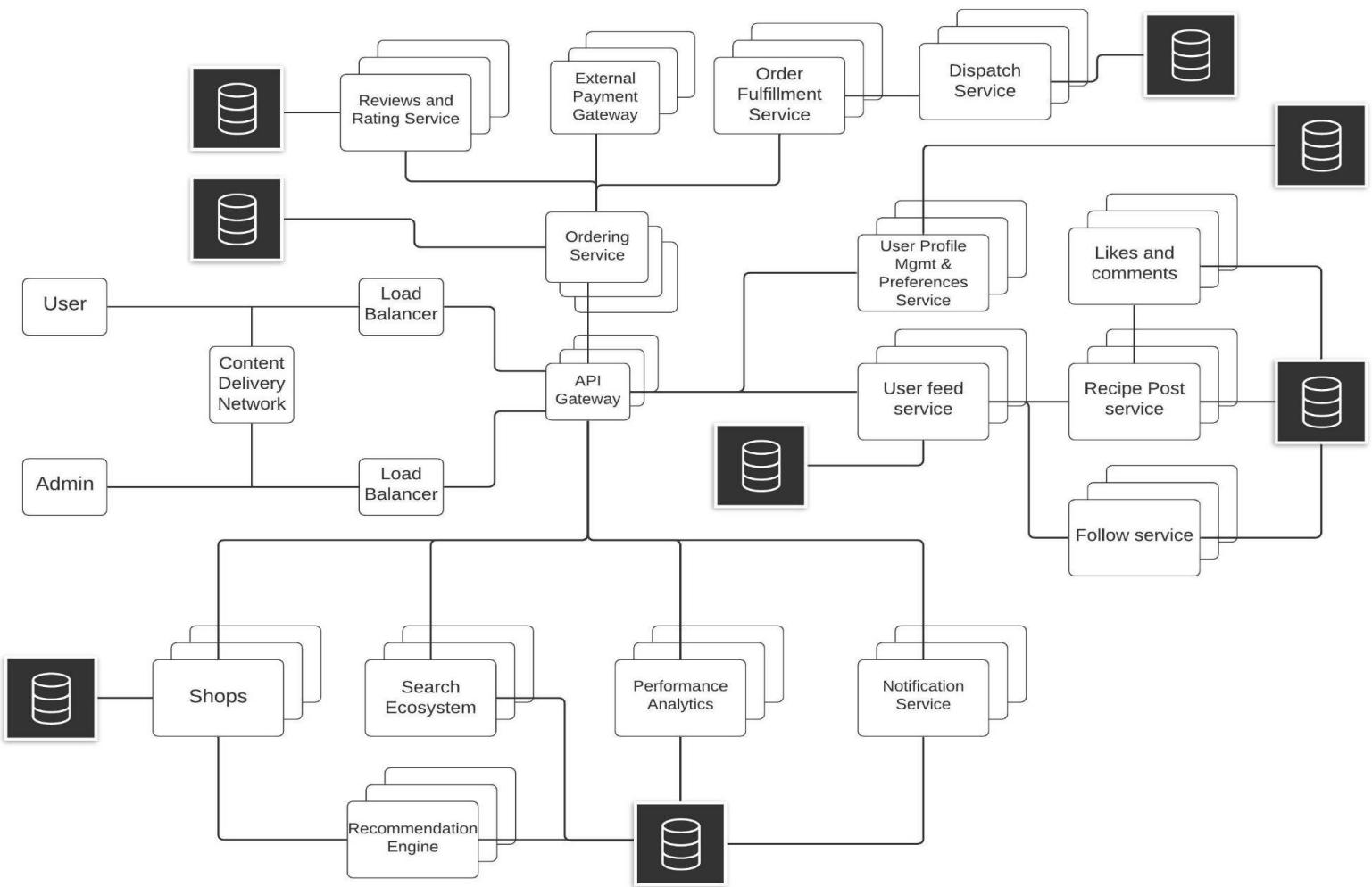
We have embedded the cart into the “User” model since cart is a very essential feature that needs to be ever present, is accessed frequently and shares a one-to-one relationship with the user.

Comments and likes have been embedded into the “Post” model instead of occupying separate collections since the system is still in its infancy and has a small user base. Both the “Order” model and cart reference dishes owing to the many-to-many relationship they share. The “Shop” model references all the dishes belonging to the shop, the “Profile” model references all the users' posts, “User” and “Shop” models are referenced by the “Order” model owing to their one-to-many relationship. Category and subcategory of a dish are embedded into the document instead of occupying separate collections which cut down the read times.“Profile” model is referenced by the “User” model instead of being embedded in it due to the difference in their volatilities

#### Comments on denormalizations made or avoided

The username is embedded in the “Profile” model to avoid a query to the “User” document just to fetch the username. Every comment has the attributes username, name, avatar of the user embedded to avoid another query to fetch these. “Orders” model has the shop name and the details of the dishes ordered embedded to account for the possibility of both the dishes and shop being deleted.

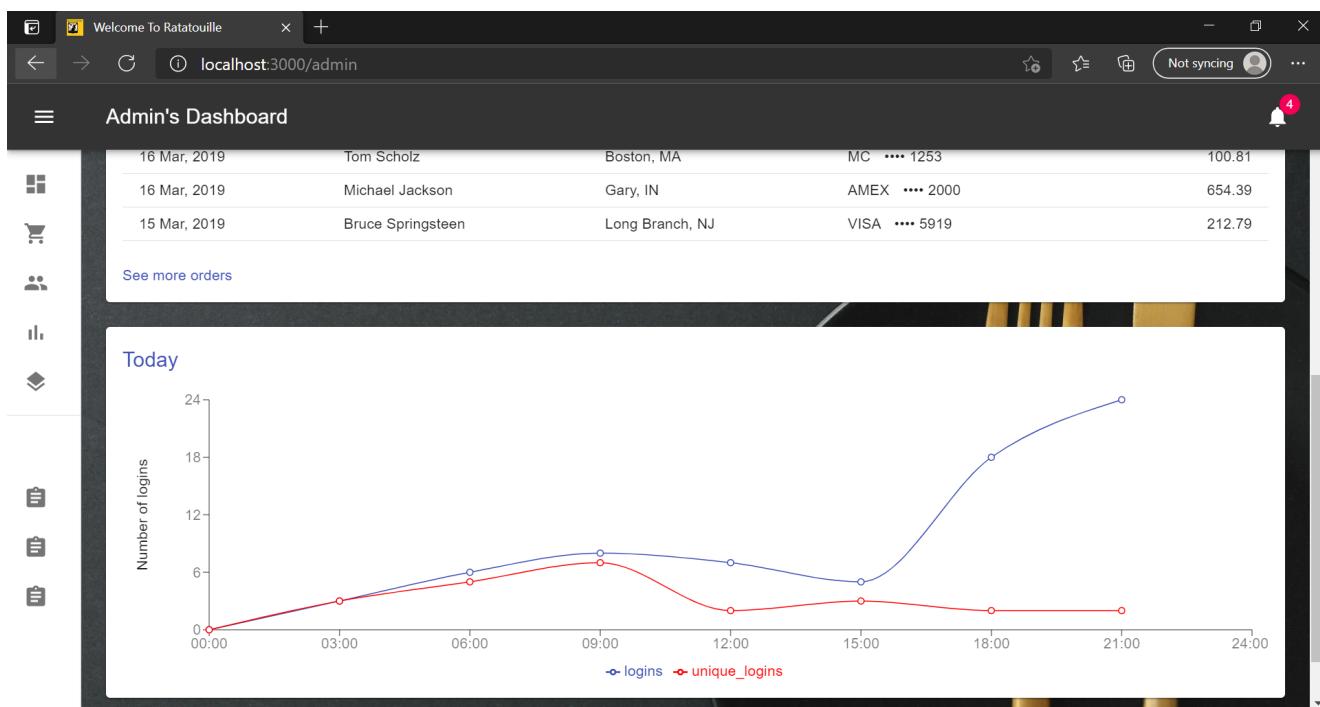
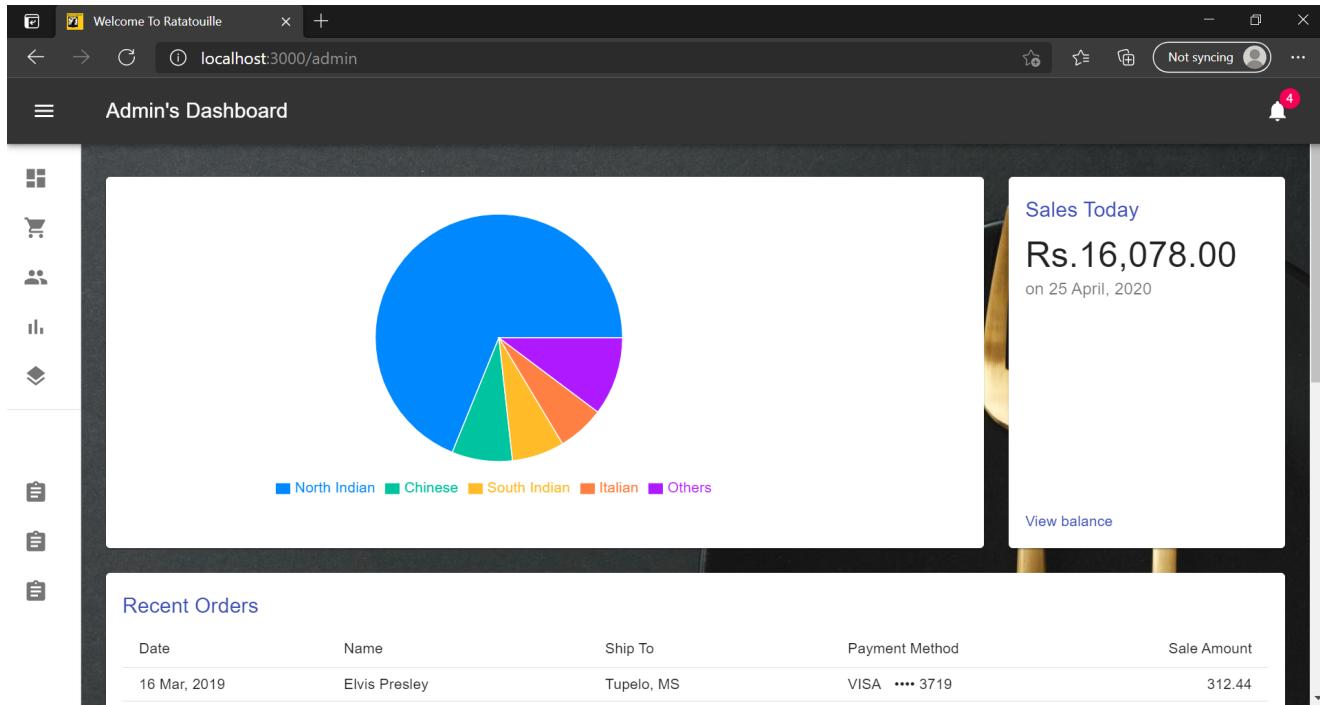
## Section 6 – System Architecture



We have decided to go with the **Microservices architecture**.

The primary reason for choosing Microservices architecture for Ratatouille is that it is a complex system combining a community marketplace with a social-networking platform for food enthusiasts. Having a Microservice architecture manages the complexity of the system by dividing the functionalities/services of the system into smaller ones thus allowing us to update/fix the services without disturbing other services and preventing the whole system from failing due to one service. Since the services are independent it improves the throughput and resilience of Ratatouille. That is the services are decoupled from each other in the best possible way. We can adjust the computational resources allocated to each service based on the usage of that service, which manages load efficiently. It makes addition of new microservices simpler and improves modularity of the system where teams can work and scale independently.

## Section 7 – Dashboard



## Section 8 – Conclusion

Until now, there was no means for talented chefs to monetize their cooking and culinary skills owing to the high barrier of entry into the food business, the high investment costs and risks associated with setting up an enterprise. Our project set out to provide a platform for these talented individuals by setting up a thriving business and exposing them to a large consumer audience. It further provides a community centered around food bringing all the food enthusiasts together. During the course of this semester we implemented all the core features as planned for the platform. Chefs can set up shops and start their businesses, they can add dishes, manage and fulfill orders. Foodies can browse through and order food from various shops set up by the chefs. Chefs and foodies also have access to the foodie forum where all the users can interact with each other, share recipes and talk about everything food related.

The initial phases of the project felt very challenging since none of us were familiar with the MERN stack technologies. Learning and trying to work on the project proved to be difficult but as time went on we actually picked up a lot by doing rather than reading articles or watching tutorials. The project has been an incredible learning experience for all of us, and we were exposed to the inner workings of software development. Prior to this most of us were clueless about software development and what went on within the applications. Designing and building a fully functioning system and overcoming the challenges that presented themselves along the way was a very gratifying and fulfilling experience which instilled in us a new-found appreciation for well-designed and implemented software applications.

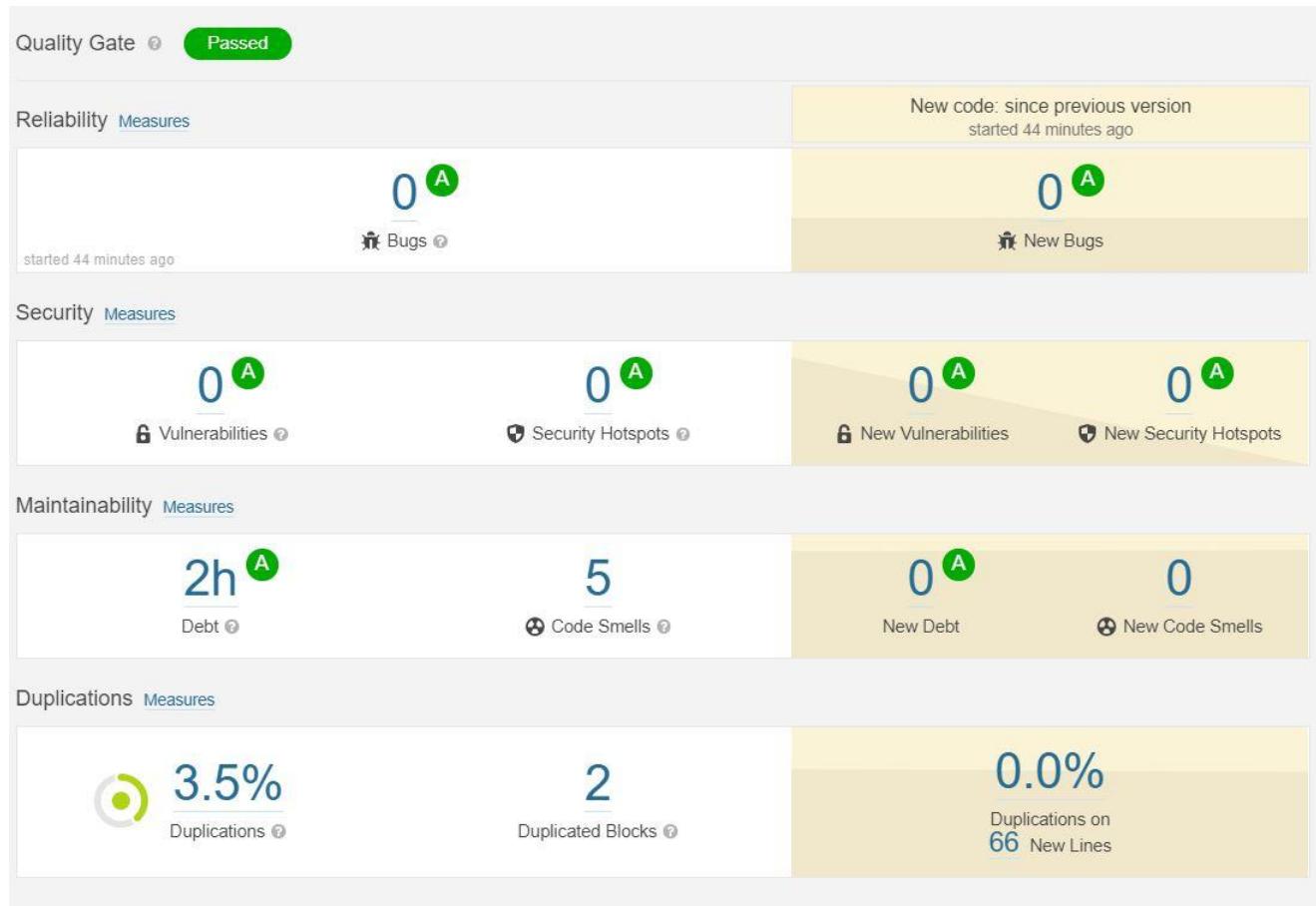
Since all of us were unfamiliar with the Agile Development methodology, it took us some time and effort to fall into rhythm before it actually eased the development process and improved our productivity and efficiency. This way of managing a project has brought in among all of us a new way of approaching and building projects. One of the other areas we found challenging was delegating work to different members and arriving at common grounds with respect to various implementations and details of various components of the system. With the constraint of time, keeping up with the sprint plan proved to be difficult at times as we had to shuffle our time between other course projects as well.

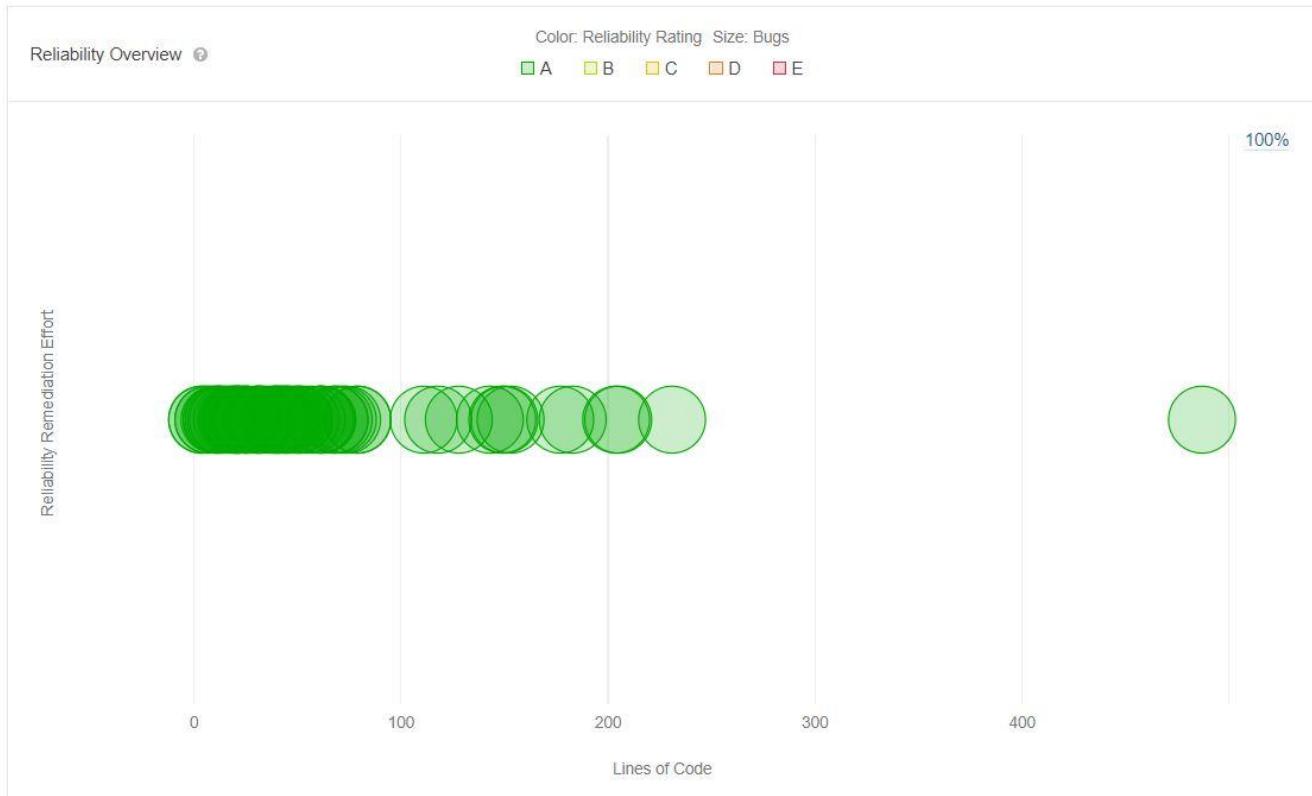
With the time provided to us, it was only possible to implement the core features of the application since we wanted to have a well-rounded application by the semester end which is not lacking in the core functionality which naturally left us behind on a few features. Currently, users cannot rate or review dishes, location based searching for shops, filters when searching for dishes and shops, ability to save and sort recipes into categories, follow other users are among the few features that we plan on implementing beyond the duration of the semester to improve the application and the user experience.

## Appendix A - Code Quality Reports

The screenshot shows a SonarQube project dashboard for the 'Ratatouille: Aspiring Chef platform' project. The dashboard is organized into several sections:

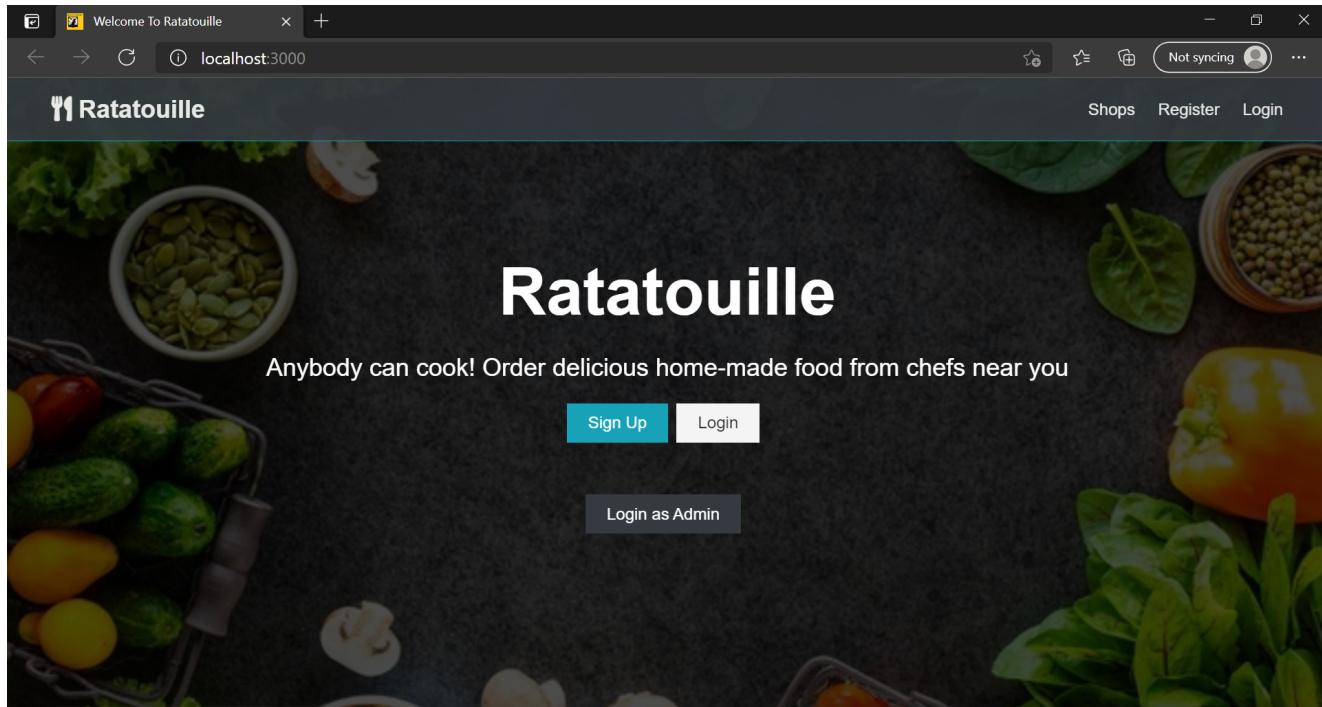
- About This Project**: Shows 4.5k Lines of Code, with breakdowns for JavaScript (4k), CSS (487), and HTML (21). There are no tags.
- Project Activity**: Lists recent events:
  - April 25, 2021, 9:42 PM: not provided (highlighted in blue)
  - April 25, 2021, 9:14 PM: Project Analyzed
- Quality Gate**: (Default) Sonar way
- Quality Profiles**: (CSS) Sonar way, (JavaScript) Sonar way, (HTML) Sonar way



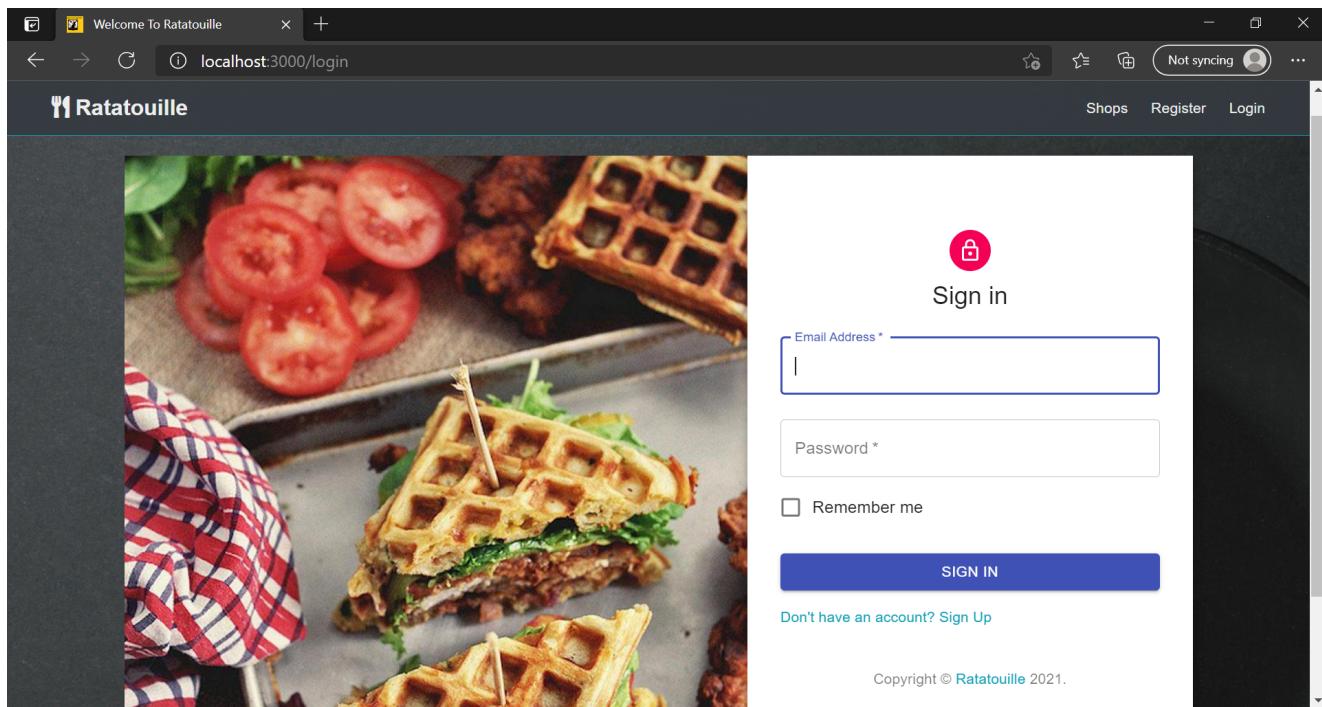


## Appendix B - Sample screenshots

Landing Page



Login Page



## Shops

The screenshot shows a web browser window titled "Welcome To Ratatouille" at the URL "localhost:3000/profiles". The page has a dark background with a black header bar. The header contains the Ratatouille logo, a navigation bar with links for "Shops", "Register", and "Login", and a status indicator "Not syncing" with a user icon.

The main content area is titled "Shops" in large blue text. Below it is a sub-header "Browse and order food from Shops".

The first shop listed is "Homemades12", which includes a placeholder profile picture, the shop name, the owner's name "AmaCook Abhinav Bandaru", the location "Hyderabad, Telangana", and two checked-off features: "Vegan" and "No contact delivery". A "Visit Shop" button is also present.

The second shop listed is "Jeff's Corner", which has a placeholder profile picture and the shop name.

## Add Shop

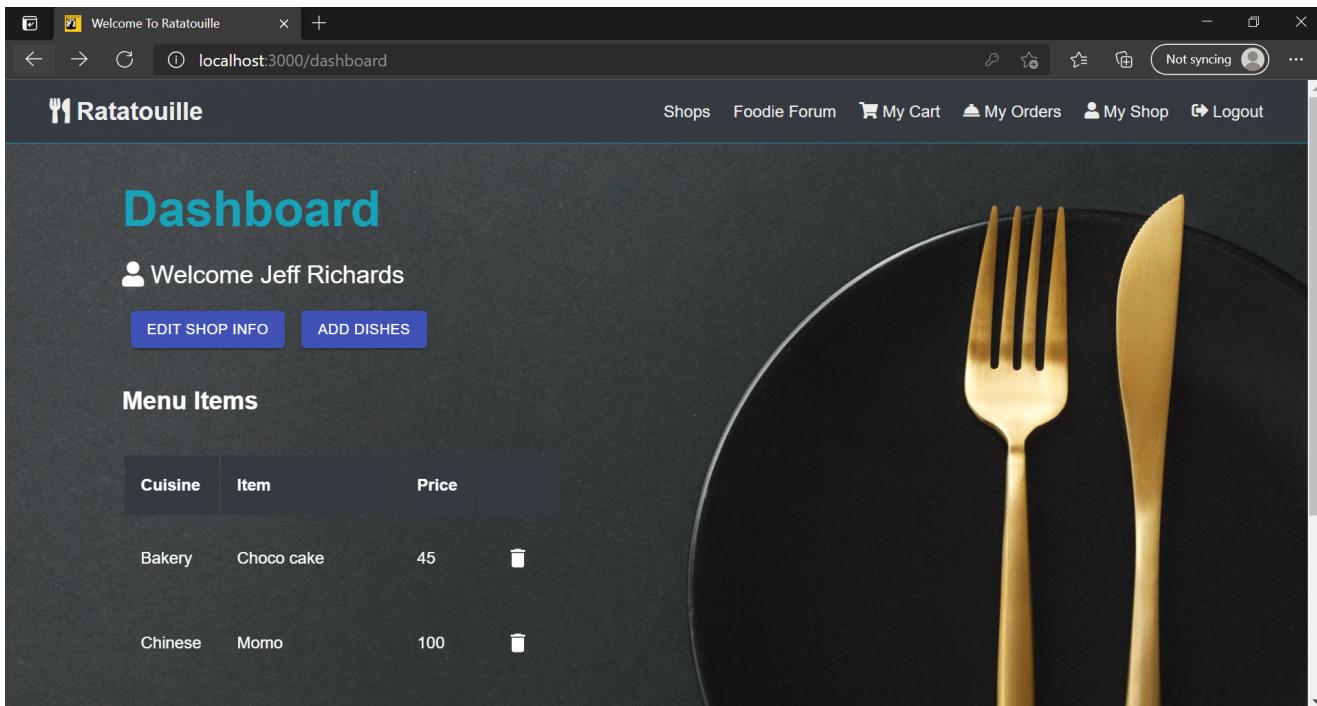
The screenshot shows a web browser window titled "Welcome To Ratatouille" at the URL "localhost:3000/edit-profile". The page has a dark background with a black header bar. The header contains the Ratatouille logo and navigation links for "Shops", "Foodie Forum", "My Cart", "My Orders", "My Shop", and "Logout".

The main content area is titled "Edit Shop Details" in large blue text. It includes a sub-header "Tell us something about your shop!" with a note that an asterisk (\*) indicates a required field.

The form fields are as follows:

- Name:** NookCook (0-1 years)
- Cooking Level:** Give us an idea of how well you can cook
- Description:** Jeff's Corner
- Website:** https://jeff.com
- Address:** It's okay if you don't have one, we're here!
- City:** Bangalore
- Note:** City & state suggested (eg. Hyderabad, Telangana)

## Dashboard - View, Add, Edit, Delete (after adding dish)



Welcome To Ratatouille

Ratatouille

Shops Foodie Forum My Cart My Orders My Shop Logout

# Dashboard

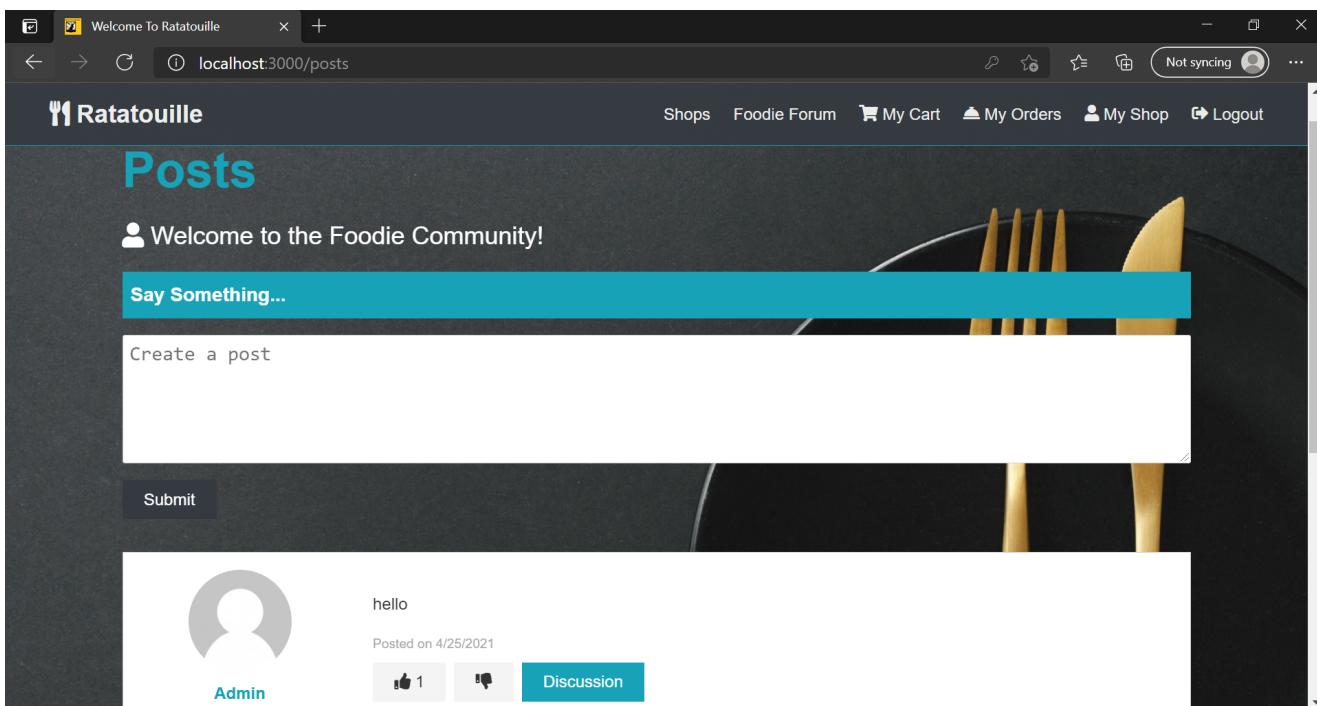
Welcome Jeff Richards

[EDIT SHOP INFO](#) [ADD DISHES](#)

### Menu Items

Cuisine	Item	Price	Action
Bakery	Choco cake	45	
Chinese	Momo	100	

After posting- can be liked and commented on



Welcome To Ratatouille

Ratatouille

Shops Foodie Forum My Cart My Orders My Shop Logout

# Posts

Welcome to the Foodie Community!

Say Something...

Create a post

Submit

Admin

hello

Posted on 4/25/2021

1 Discussion

## Appendix C – Project management

<Selected reports from Pivotal Tracker – Project overview (example shown below), Iteration report, and Burnup chart; exported or screenshots from the Tracker>

