



KitchenSync

Team **Neon** Nomads

Agenda



Improvements
from last feedback



Project Description



Teamworking
Agreement



MVP



Algorithms



Sprint 3 Recap



Introduction



Team Members
Roles and
Responsibilities



Personas



Technologies and
Languages



Diagrams



Product
Backlog



Agenda



Sprint
Summary



Test Cases



Stories Not
Completed



Burndown Chart



WebApp Screenshots



Live Application



Sprint 4 Backlog



Stories Completed



Team Velocity and
Committed Ratio



Retrospective



GitHub Link





Improvements from Last Feed Back

- Explained how the technologies are used
- Included user stories in test cases for reference.
- Added Sprint 4 User stories



Introduction

KitchenSync is a comprehensive platform designed to make meal planning and pantry management a simple part of your daily routine. It's not just another tool for organizing the kitchen. Whether you're a working professional with a hectic schedule or a parent balancing the obligations of family life, KitchenSync is here to make your kitchen experience more efficient.





Project Description

KitchenSync streamlines your pantry management and meal planning seamlessly.

For those with active lifestyles and families
who find it challenging to keep up with their pantry inventory and curb food disposal,
the KitchenSync
is a sophisticated kitchen assistance platform,
that enhances the management of your pantry and offers recipe options that fit your available ingredients, organizes meal plans, and reminds you of the shelf life of your food items,
unlike conventional inventory systems and static shopping list apps
our application intelligently adapts to your dietary preferences and schedule,
guaranteeing the optimal use of your groceries and simplifying the meal preparation process.



04

Team Members & Roles



Hemanvitha
Mylapalli

Frontend Developer
Team Leader



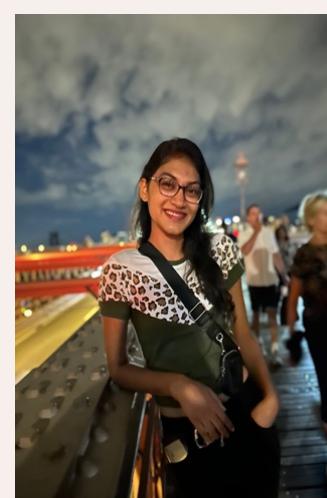
Shashank
Akavaram

Frontend Developer
Scrum Master



Yuga Kapil Krishna
Maytheramatla

Backend Developer



Neha
Srinivasaiah

Devops Engineer

Team Members & Roles



Sasank
Nannapaneni
Software Developer



Bala Sahithi
Kamana
Backend Developer



Aditya Gadhav
Software Developer



Sujitha
Chethireddy
Software Test
Engineer





Teamwork Agreement

The goal of our Teamwork Agreement is to establish expectations for behavior in an attempt to foster collaboration and productivity.

Agendas are distributed beforehand by WhatsApp or email.

The specific roles and responsibilities of each member may vary as the project progresses.

One meeting per week is scheduled for Saturdays, and daily meetings are held for Scrum. Important decisions will be made collectively, documented, and shared with all participants.





06

Personas

A persona is an imaginary client that personifies the traits of a subset of your customers. For the purpose of creating your product or service, the Persona provides useful information about those clients' demographics. Their objectives, driving forces, and constraints.

Persona 1

Cael

21 years old,
freshman

Background:

A freshman at Pace University from a low-income family living in a dormitory. He's on a tight budget and needs to make his grocery shopping as efficient as possible.

Personality:

Cheerful, disciplined, hardworking, initiative

Pain points:

Limited budget, inexperience in meal planning, difficulty in finding recipes.

Challenges:

Unnecessary purchase, eating healthy, managing a small food storage.



Persona 2

Ella

32 years old,
Advocate

Background:

Ella is an advocate who is leading a busy lifestyle. She is health conscious and enjoys cooking nutritious meals at home.

Personality:

Altruistic, organized, passionate, perseverance

Pain points:

Managing her schedule, locating recipes that meet specific dietary preferences, keeping track of expiration dates

Challenges:

Efficiently organizing pantry items, meal planning



Persona 3

Michelle

44 years old,
Busy Mom

Background:
Michelle is a working mom of four. She juggles between a demanding job and household responsibilities.

Personality:

Empathetic, forgiving, nurturing, patience

Pain points:

Balancing a demanding job and household responsibilities, over-purchasing, and desire for a system to assist with a recipe suggestion

Challenges:

Coordinating meals to fit into a busy schedule, managing a large and diverse food inventory, and reducing food wastage.



Persona 4

Diego

49 years old,
Restaurant Manager

Background:

Diego manages a small restaurant specializing in local cuisine. He's constantly balancing various tasks and often overlooks inventory management, leading to occasional food wastage.

Personality:

Creative, Community-Minded,
Entrepreneurial, Passionate

Pain points:

overlooking inventory
management due to
multitasking, the need for a
system to suggest recipes and
expiration alerts.

Challenges:

Streamlining inventory
management and reducing food
wastage.





07

MVP(Minimal Viable Product)

Minimal Viable Product (MVP) for the KitchenSync application will include core functionalities such as user authentication, pantry management, food image upload with nutritional prediction using a pre-trained model like MobileNet, recipe suggestions based on pantry contents, and expiry date alerts. The application will be developed using Python with Flask for the backend, HTML, CSS, and JavaScript for the front end, and SQLite for the database. This MVP focuses on essential features to manage and optimize kitchen activities effectively while allowing for future enhancements.

08

Technologies and Languages



HTML



CSS



JavaScript



Python



Flask

Craft the user interface, ensuring a responsive and interactive experience for managing pantry items and viewing recipes.

Serve as the core for backend operations, managing server logic and data handling.

08

Technologies and Languages



SQLite

Provides a lightweight database solution for storing user data and pantry items.



VS Code

Used for development, offering powerful coding, testing, and debugging tools.



GitHub

Manages version control, supporting collaborative development efforts.

08

Technologies and Languages



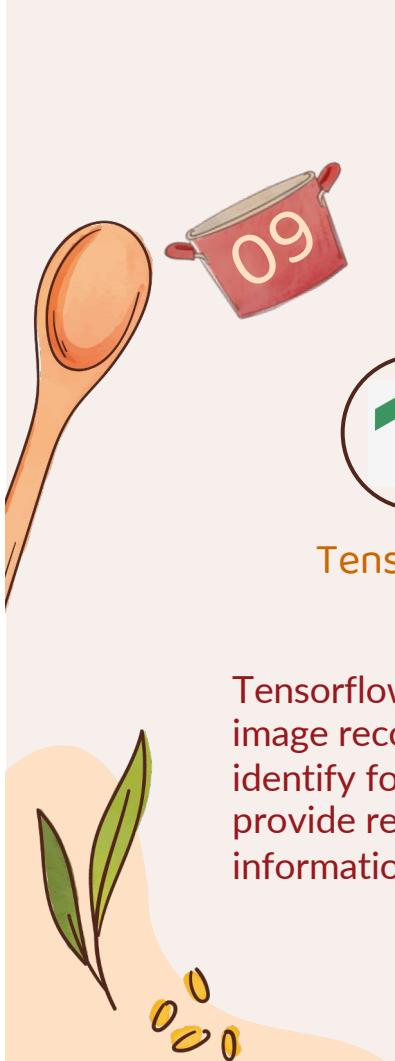
Jira Board

Tracks tasks and progress in the development process using agile methodologies.



Anaconda

Manages Python environments, ensuring consistent handling of dependencies, particularly for machine learning features.



Algorithms and Libraries



Tensorflow



Keras



Scikit Learn

Tensorflow and Keras are used for food image recognition, enabling the app to identify food items from images and provide recipe suggestions and nutritional information.

Scikit Learn is used for recommending recipes based on pantry ingredients and for predictive analytics to forecast pantry needs and optimize grocery shopping.



Algorithms and Libraries

- MobileNet Models are deep learning models optimized for mobile and edge devices. In our project, we used MobileNet for image recognition tasks, such as identifying recipe and nutritional value of the food item from the uploaded image.
- K-Nearest Neighbors is a simple, versatile machine-learning algorithm used for classification and regression. We used KNN to suggest recipes by finding the closest match to the uploaded image.
- VGG16 is a convolutional neural network model known for its effectiveness in image recognition. VGG16 was utilized for analyzing images of food to help with recipe generation.

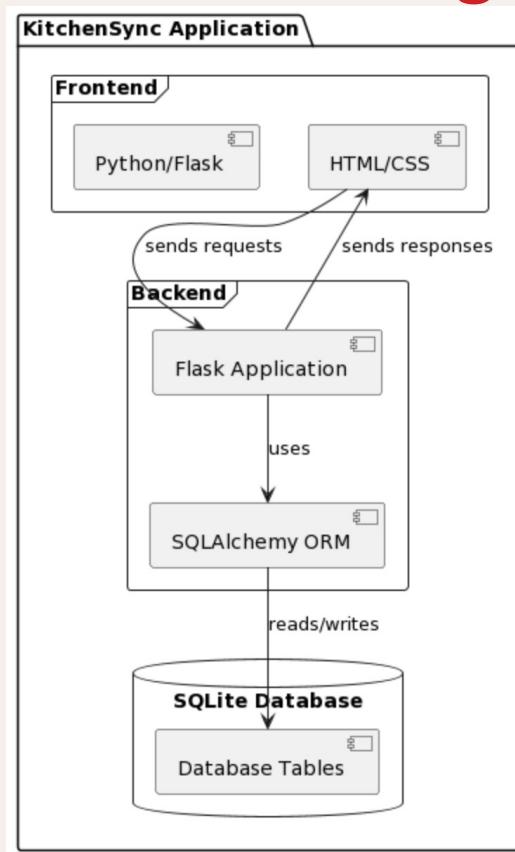
Algorithms and Libraries

- Random Forest is an ensemble learning method used for classification and regression. This algorithm is deployed to predict the nutritional values of uploaded items of food.
- Web Scraping was used to gather recipes from the internet to find appropriate recipes and their nutritional values.

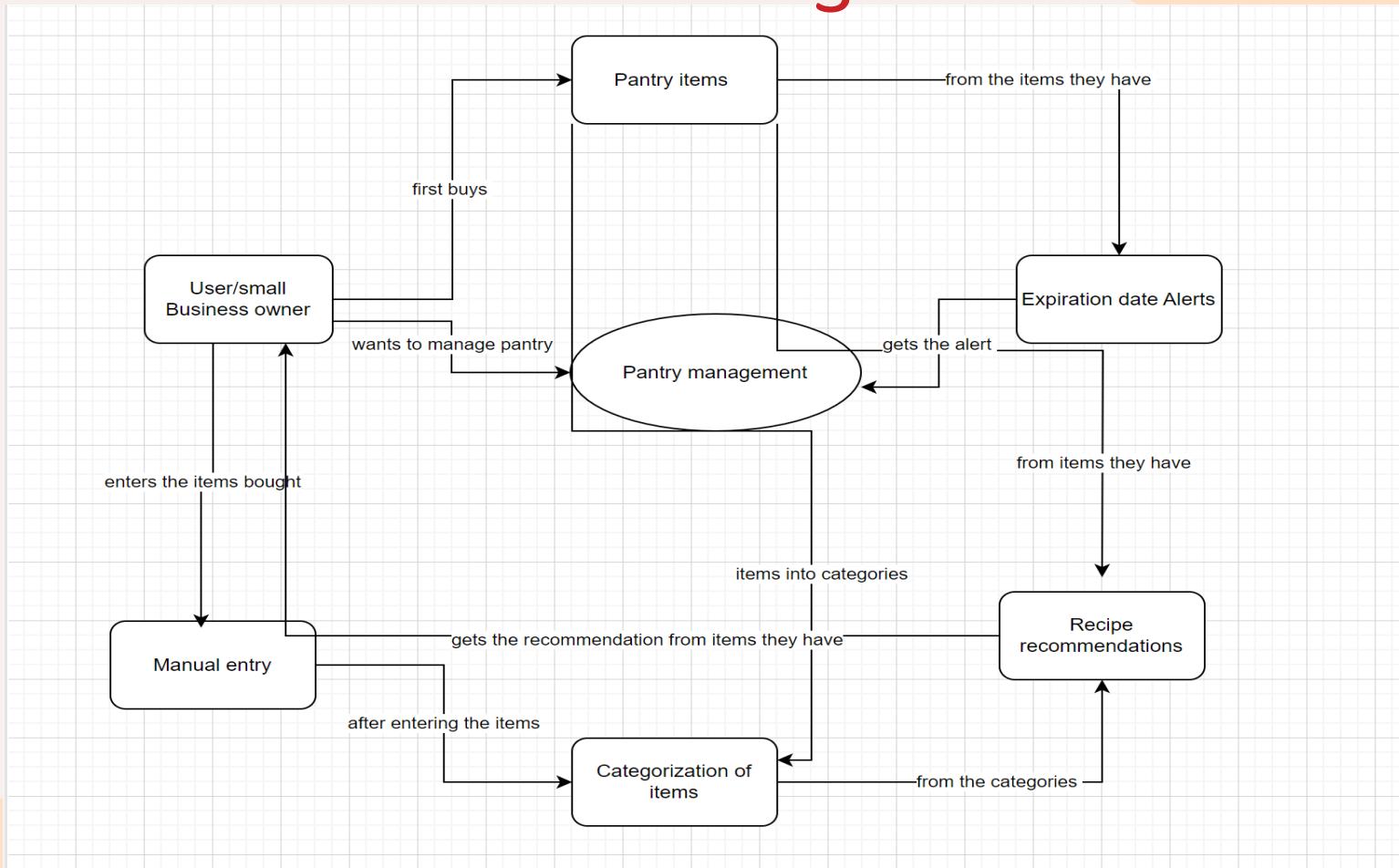
Diagrams

- Architecture Diagram
- Context Diagram
- ER Diagram
- Sequence Diagram
- State Diagram
- Class Diagram

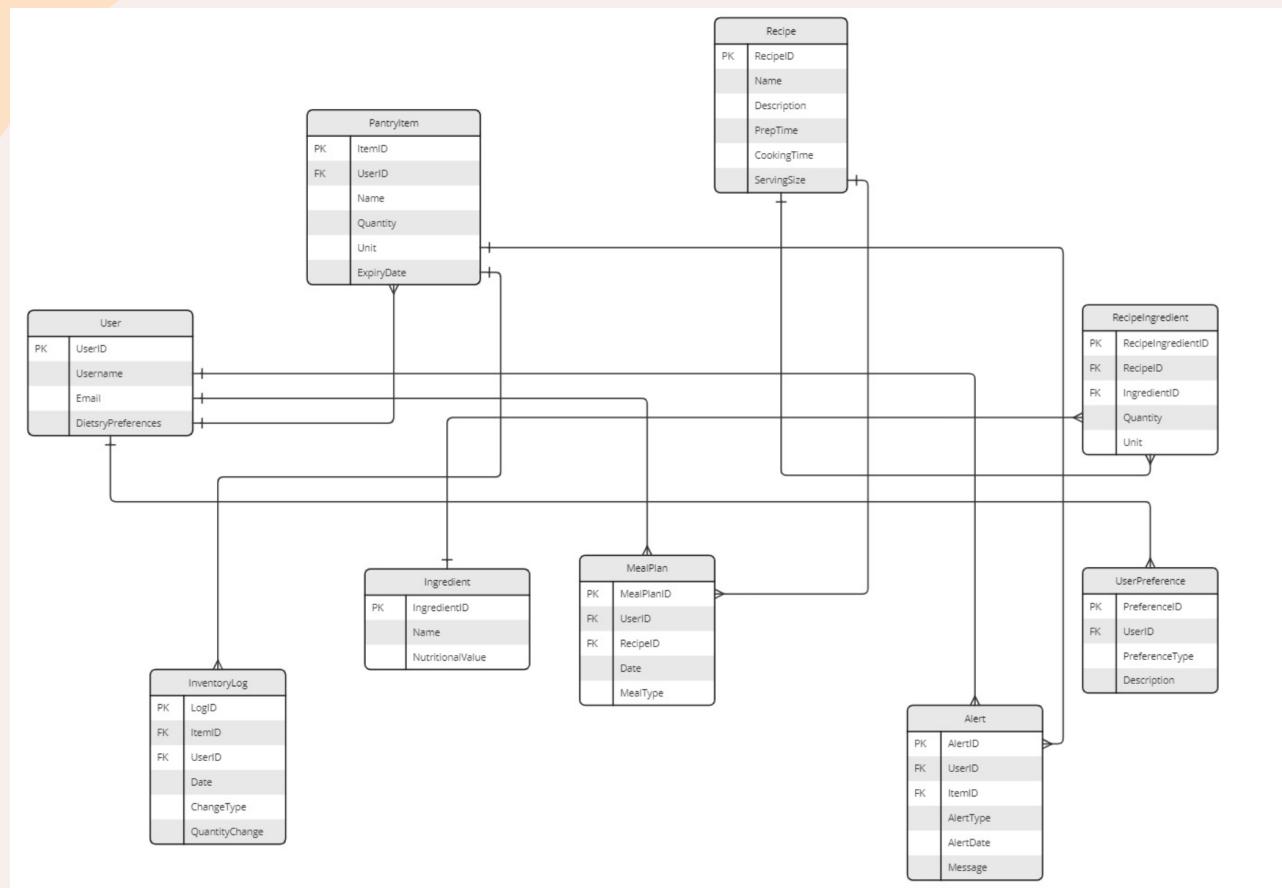
Architecture Diagram



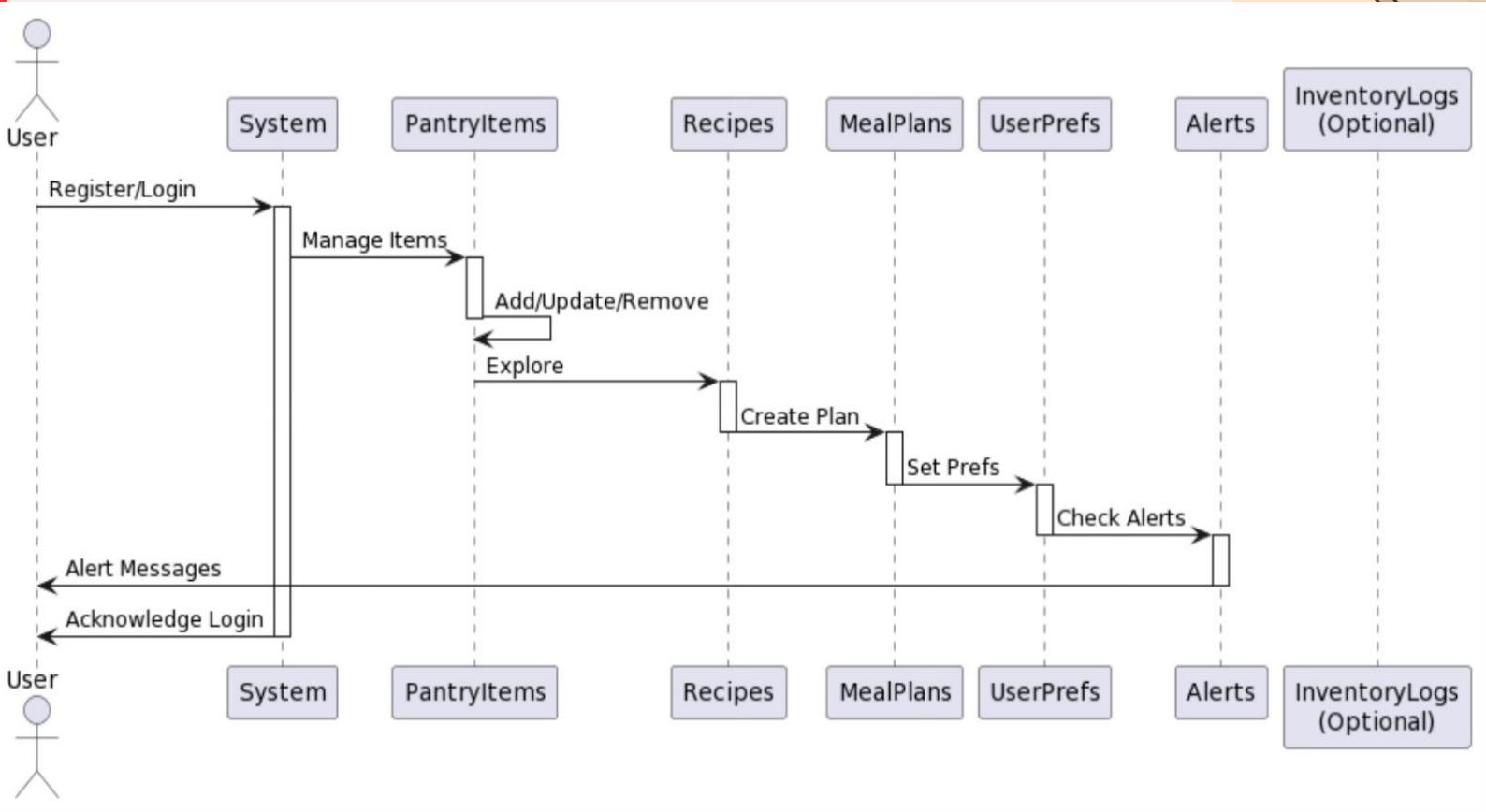
Context Diagram



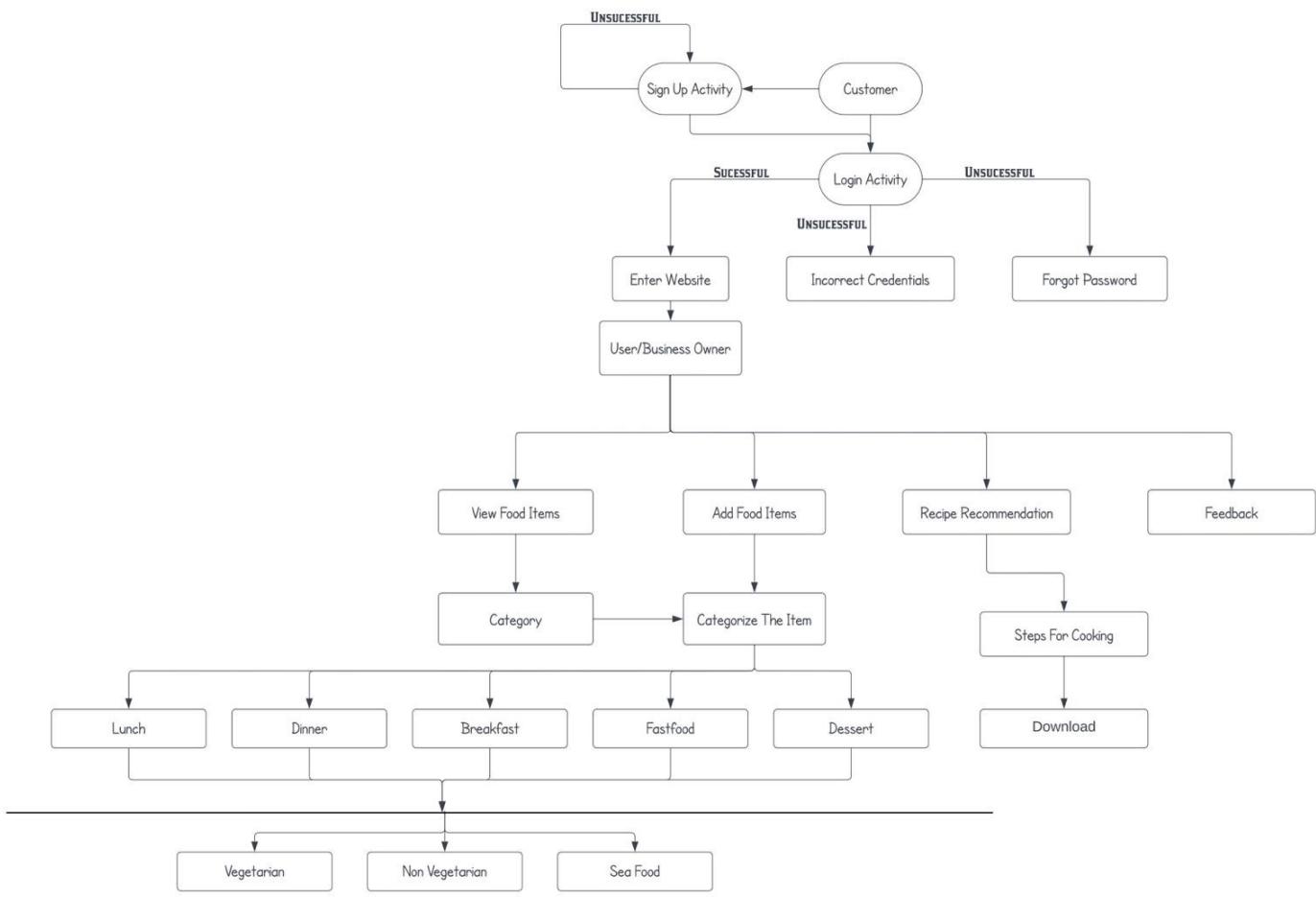
ER Diagram



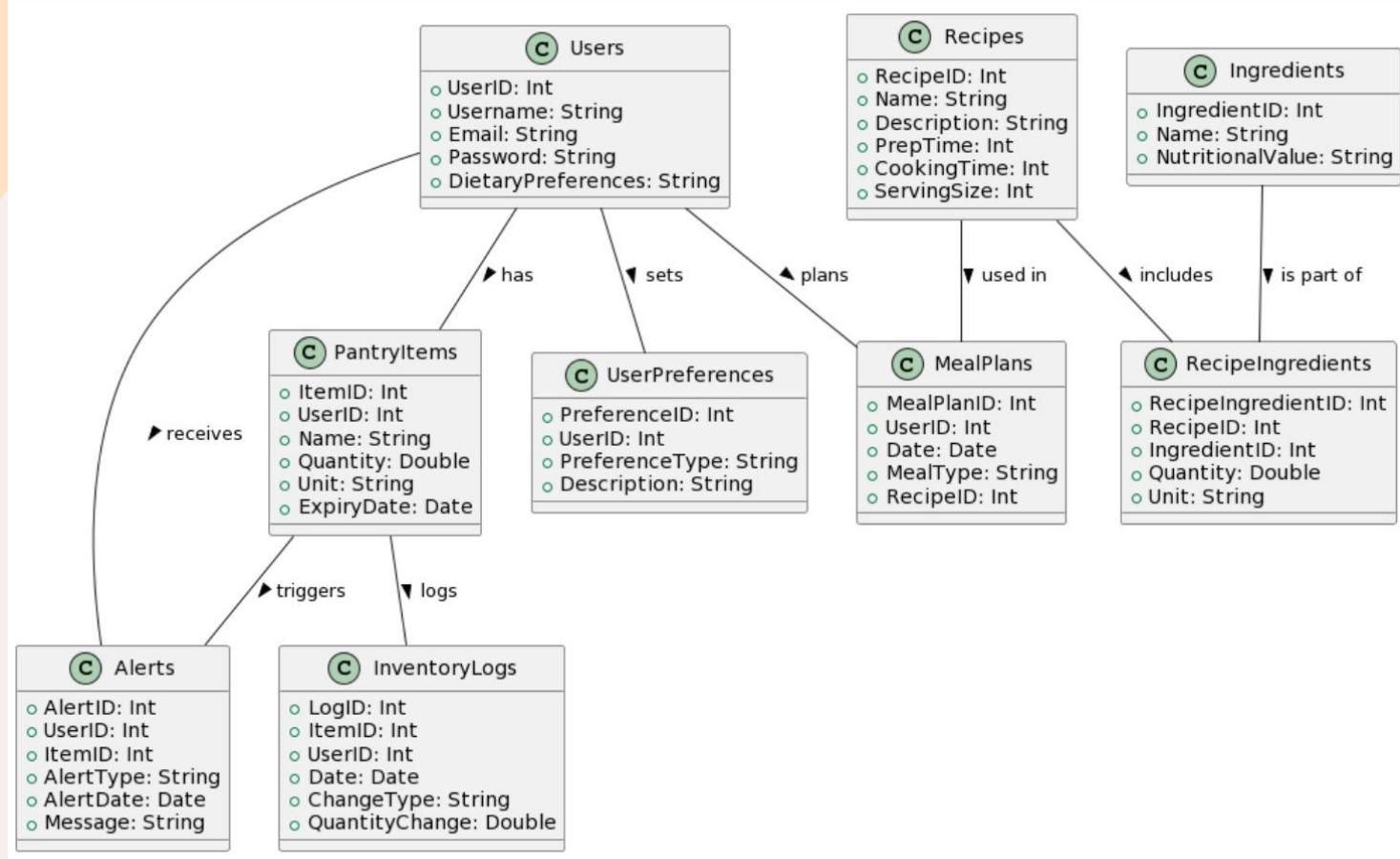
Sequence Diagram



State Diagram



Class Diagram



Sprint 3 Recap

Sprint 3

Estimation	User Id	As a	I want to	So that	Feature
5	3	Health-conscious Individual	check the nutritional value	I can maintain my dietary regimen without hassle	Nutritional Value
2	5	Gourmet Cook	access a wide variety of recipes	I can explore new dishes and cuisines	Recipe Recognizer
8	6	Parent with multiple kids	plan meals for the whole week	I can organize my shopping and cooking schedule better	Recipe Recognizer
8	7	Novice Cook	have step-by-step cooking guides	I can learn to cook with more confidence	Recipe Recognizer
1	9	College Student	find recipes based on the ingredients I have	I can avoid buying extra groceries	Recipe Recognizer
2	13	Restaurant Chef	access a wide variety of recipes	I can quickly offer my dishes	Recipe Recognizer

Product Backlog

Estimation	User Id	As a	I want to	So that	Feature
13	1	Student	upload an image of food	I can receive video recipes related to the image	Recipe Recommendation
8	2	Parent	see detailed nutritional information for the food in the uploaded image	I can make informed dietary choices	Nutritional Value
5	3	Health-conscious Individual	check the nutritional value	I can maintain my dietary regimen without hassle	Nutritional Value
8	4	Environmentally Aware User	be alerted about food nearing expiration	I can reduce food waste	Expiry Notifications
2	5	Gourmet Cook	access a wide variety of recipes	I can explore new dishes and cuisines	Recipe Recognizer
8	6	Parent with multiple kids	plan meals for the whole week	I can organize my shopping and cooking schedule better	Recipe Recognizer
8	7	Novice Cook	have step-by-step cooking guides	I can learn to cook with more confidence	Recipe Recognizer

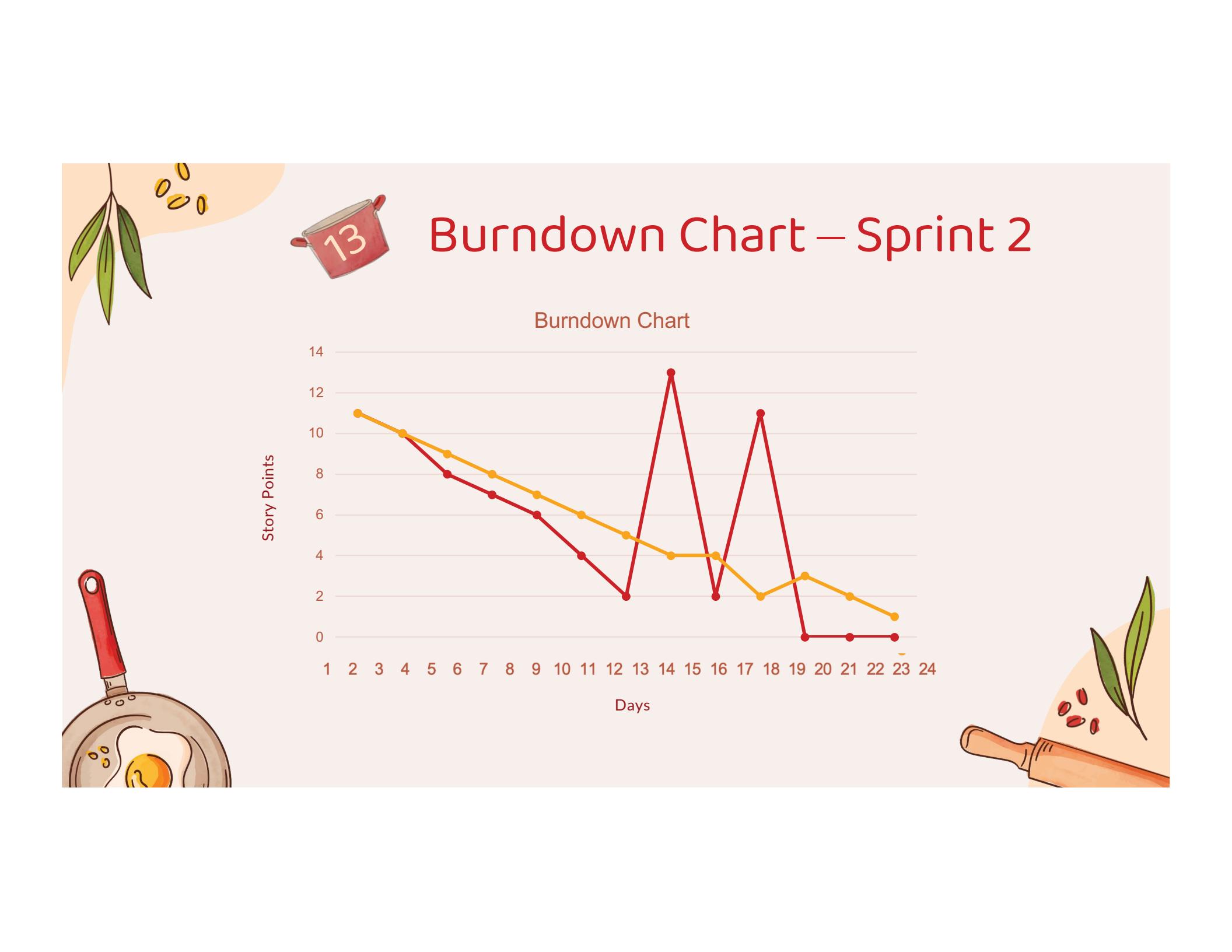
Product Backlog

Estimation	User Id	As a	I want to	So that	Feature
1	9	College Student	find recipes based on the ingredients I have	I can avoid buying extra groceries	Recipe Recognizer
5	10	Bakery Owner	manage my inventory of baking ingredients	I can prevent shortages and reduce excess waste	Inventory Management
8	11	Restaurant Manager	track the freshness of my perishable stock	I can ensure the quality of the dishes served	Freshness Tracking
3	12	Pastry Chef	receive alerts when specific ingredients are low	I can reorder supplies in time for baking	Expiry Notifications
2	13	Restaurant Chef	access a wide variety of recipes	I can quickly offer my dishes	Recipe Recognizer
5	14	Head Chef	update my inventory	I can keep track of what I have	Inventory Management
1	15	Restaurant Owner	I want to create an account	I can add items to my inventory	Inventory Management
5	16	Seafood Market Manager	track the sell-by dates of seafood	we can guarantee the freshness and safety of our products	Expiry Notifications

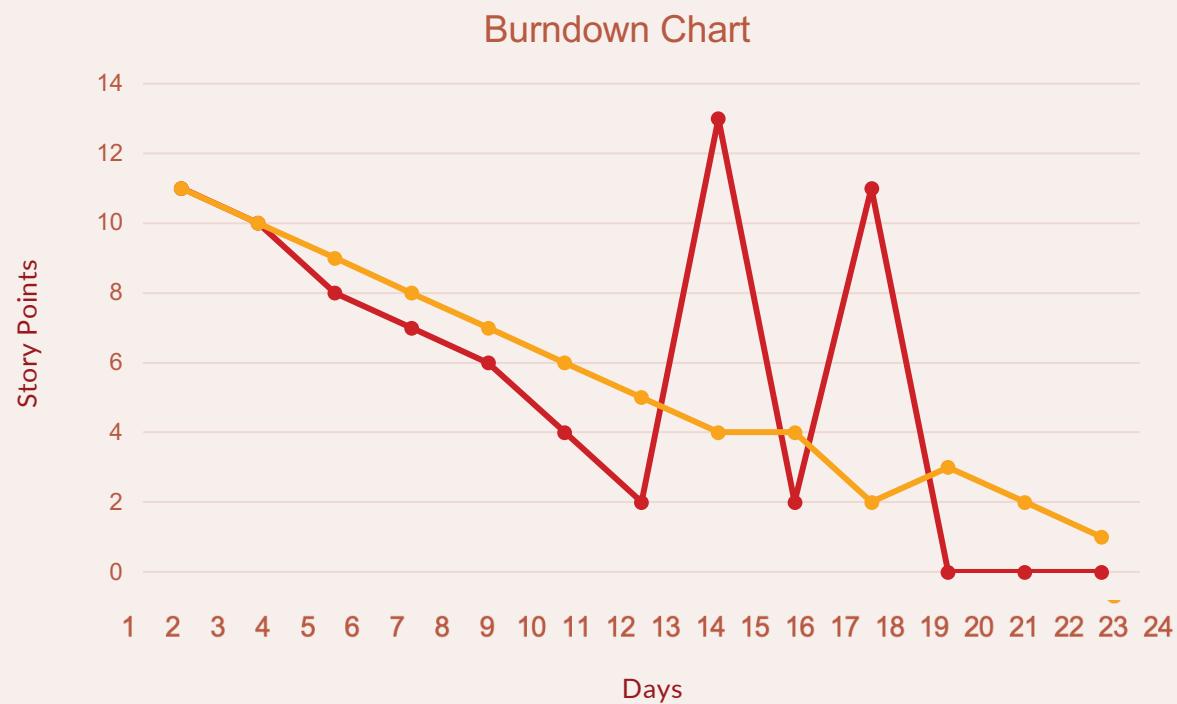
Sprint Summary

Sprint 2

Estimation	User Id	As a	I want to	So that	Feature
5	10	Bakery Owner	manage my inventory of baking ingredients	I can prevent shortages and reduce excess waste	Inventory Management
5	14	Head Chef	update my inventory	I can keep track of what I have	Inventory Management
1	15	Restaurant Owner	I want to create an account	I can add items to my inventory	Inventory Management



Burndown Chart – Sprint 2

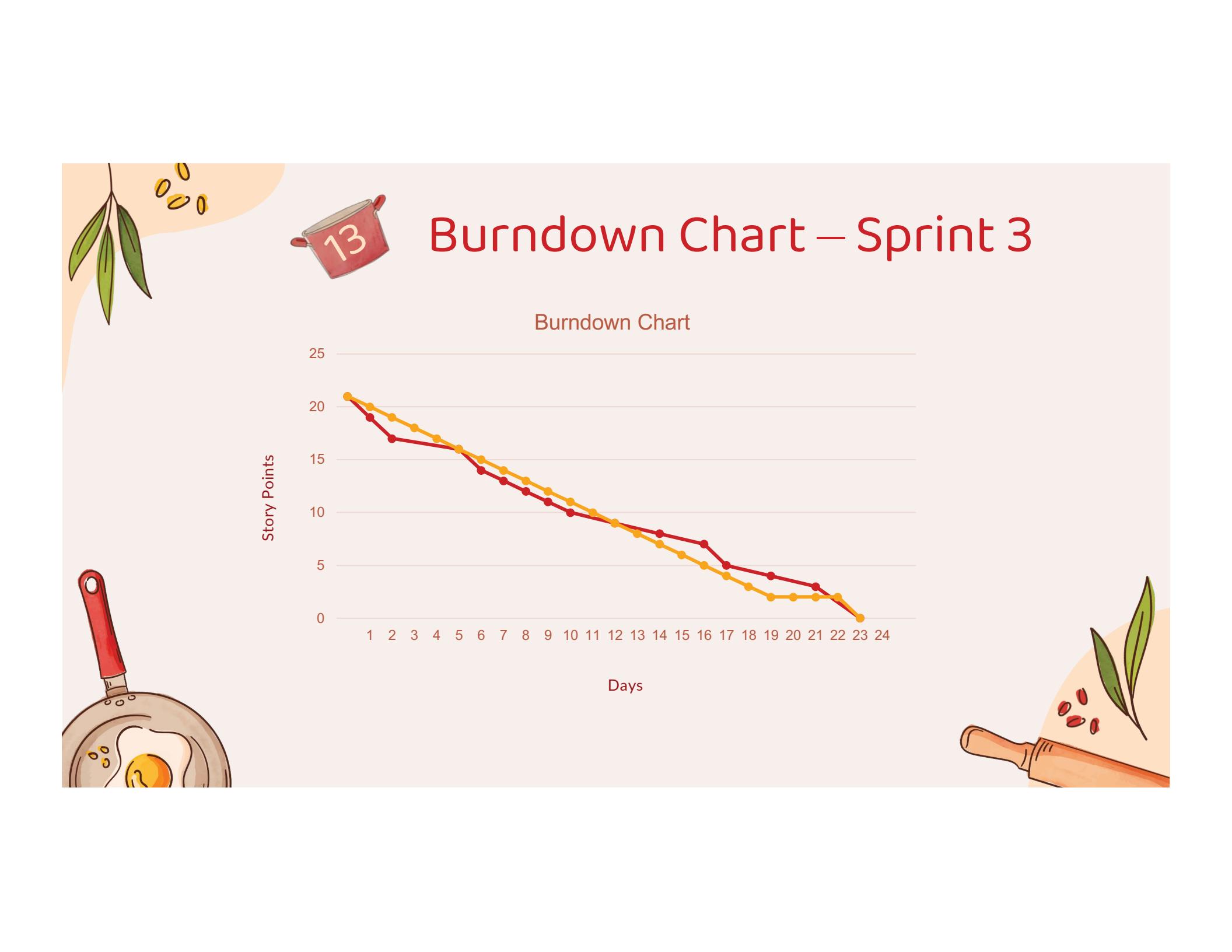




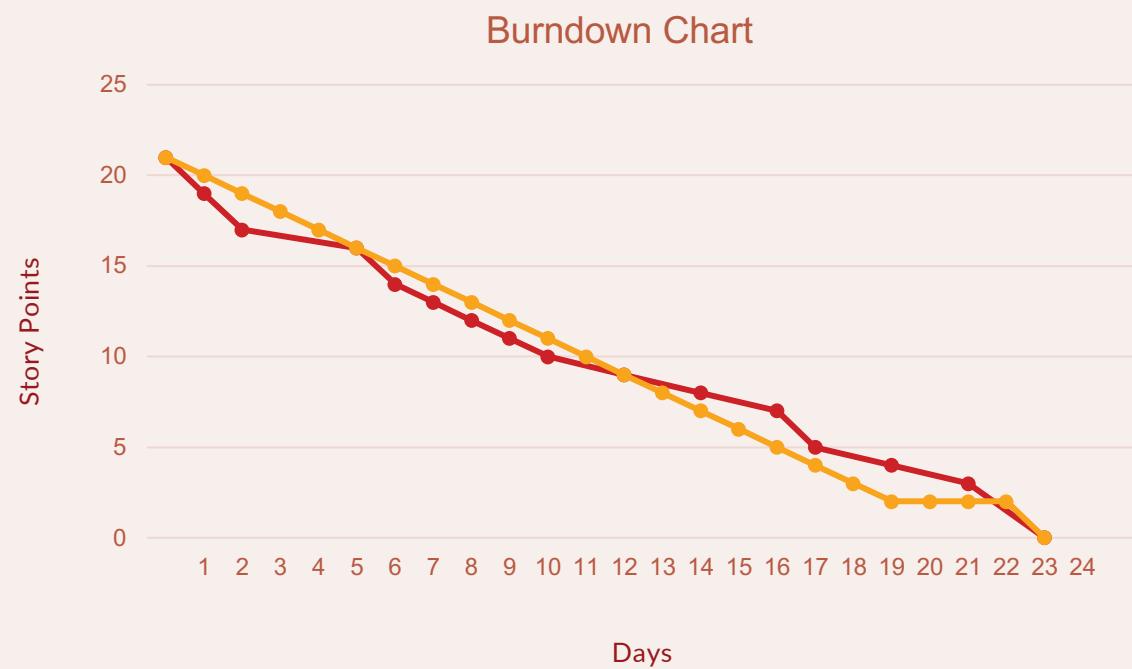
Sprint Summary

Sprint 3

Estimation	User Id	As a	I want to	So that	Feature
5	3	Health-conscious Individual	check the nutritional value	I can maintain my dietary regimen without hassle	Nutritional Value
2	5	Gourmet Cook	access a wide variety of recipes	I can explore new dishes and cuisines	Recipe Recognizer
8	6	Parent with multiple kids	plan meals for the whole week	I can organize my shopping and cooking schedule better	Recipe Recognizer
8	7	Novice Cook	have step-by-step cooking guides	I can learn to cook with more confidence	Recipe Recognizer
1	9	College Student	find recipes based on the ingredients I have	I can avoid buying extra groceries	Recipe Recognizer
2	13	Restaurant Chef	access a wide variety of recipes	I can quickly offer my dishes	Recipe Recognizer

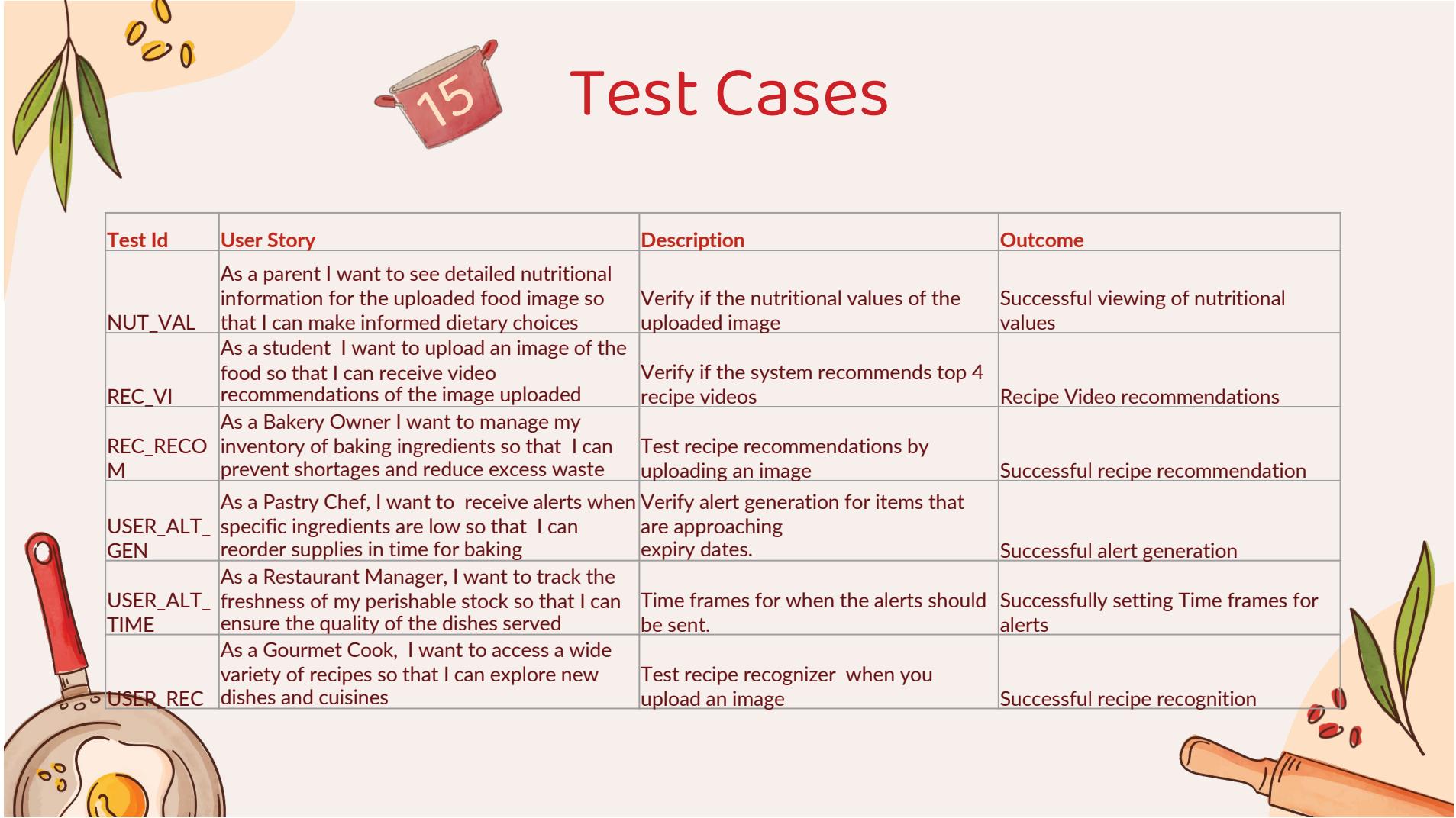


Burndown Chart – Sprint 3



Sprint 4 Product Backlog

User ID	User Story	Acceptance Criteria
1	As a student I want to upload an image of the food so that I can receive video recommendations of the image uploaded	Given the system has identified the food in the image, When it fetches recipe videos, Then it should display atleast four relevant recipe videos
2	As a parent I want to see detailed nutritional information for the uploaded food image so that I can make informed dietary choices	Given the system has processed the uploaded food image, When the analysis identifies the food item, Then it should display detailed nutritional information including calories, fats, protiens, carbs and any significant vitamins and minerals
4	As an Environmentally Aware User, I want to be alerted about food nearing expiration so that I can reduce food waste	Given I want to minimize food waste due to expired products, When I check the KitchenSync app, Then it should provide a prioritized list of items to use based on their expiration dates, with recipes suggestions when applicable.
11	As a Restaurant Manager, I want to track the freshness of my perishable stock so that I can ensure the quality of the dishes served	Given I am a restaurant manager responsible for maintaining the freshness of perishable goods, When I store new stock in the inventory using the KitchenSync app, Then the app should track the shelf life and alert me a few days before the expiration date.
12	As a Pastry Chef, I want to receive alerts when specific ingredients are low so that I can reorder supplies in time for baking	Given I need to ensure continous availability of baking ingredients, When I review my upcoming baking schedule and current inventory in the KitchenSync app, Then the app should provide a forecast of ingredient usage and alert me in advance if I need to reorder to meet demand.
16	As a Seafood Market Manager, I want to track the sell-by dates of seafood so that we can promote the freshness and safety of our products	Given a seafood product is approaching it's sell-by date, When I check the inventory in the KitchenSync app, Then the app should highlight the product and alert me so I can prioritize its sale to ensure freshness and safety.



Test Cases

Test Id	User Story	Description	Outcome
NUT_VAL	As a parent I want to see detailed nutritional information for the uploaded food image so that I can make informed dietary choices	Verify if the nutritional values of the uploaded image	Successful viewing of nutritional values
REC_VI	As a student I want to upload an image of the food so that I can receive video recommendations of the image uploaded	Verify if the system recommends top 4 recipe videos	Recipe Video recommendations
REC_RECO_M	As a Bakery Owner I want to manage my inventory of baking ingredients so that I can prevent shortages and reduce excess waste	Test recipe recommendations by uploading an image	Successful recipe recommendation
USER_ALT_GEN	As a Pastry Chef, I want to receive alerts when specific ingredients are low so that I can reorder supplies in time for baking	Verify alert generation for items that are approaching expiry dates.	Successful alert generation
USER_ALT_TIME	As a Restaurant Manager, I want to track the freshness of my perishable stock so that I can ensure the quality of the dishes served	Time frames for when the alerts should be sent.	Successfully setting Time frames for alerts
USER_REC	As a Gourmet Cook, I want to access a wide variety of recipes so that I can explore new dishes and cuisines	Test recipe recognizer when you upload an image	Successful recipe recognition

Stories Completed

Estimation	User Id	As a	I want to	So that	Feature
13	1Student		upload an image of food	I can receive video recipes related to the image	Recipe Recommendation
8	2Parent		see detailed nutritional information for the food in the uploaded image	I can make informed dietary choices	Nutritional Analysis
8	4Environmentally Aware User		be alerted about food nearing expiration	I can reduce food waste	Expiry Notifications
8	11Restaurant Manager		track the freshness of my perishable stock	I can ensure the quality of the dishes served	Freshness Tracking
3	12Pastry Chef		receive alerts when specific ingredients are low	I can reorder supplies in time for baking	Expiry Notifications
5	16Seafood Market Manager		track the sell-by dates of seafood	we can guarantee the freshness and safety of our products	Expiry Notifications



Stories Not Completed

We finished everything we initially planned





Team Velocity and Committed Ratio

Team Velocity = Total number of story points completed in this sprint

Team Velocity Sprint 4 = 45

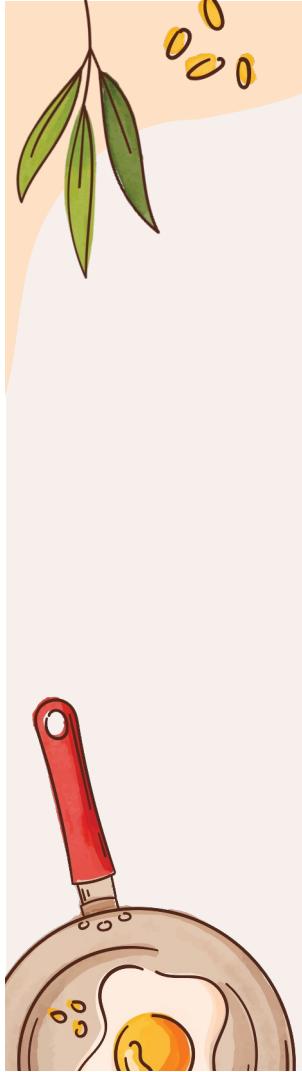
Sprint 2 Team Velocity = 11, Sprint 3 Team Velocity = 26

Historical Team Velocity = Average of previous sprint's velocity

Historical Team Velocity = $(11+26+45)/3 = 27.33$

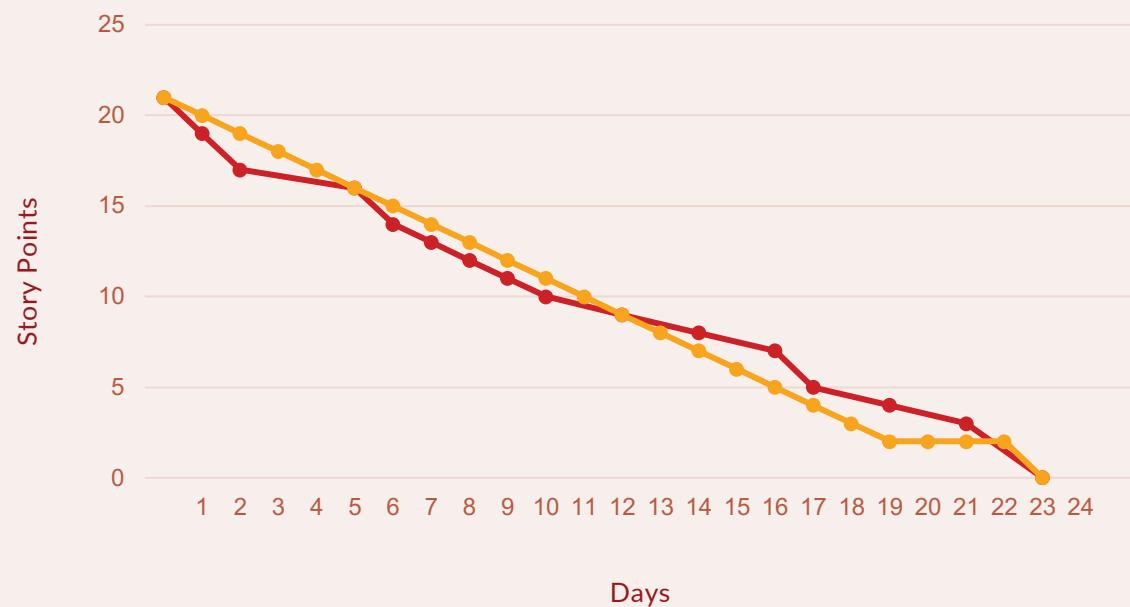
Committed Ratio

Committed Ratio = $45/45 = 100\%$



Burndown Chart – Sprint 4

Burndown Chart





Retrospective – Sprint 2

What went well +

Aditya- Delivering the assigned tasks on time + 2	Neha-distribution of task + 3
Shashank Akavaram: planning tasks deadlines internally before submission + 4	Hemanvitha - Time taken to finalize a decision. I personally think that we took way less time to finalize on a decision than we did in last sprint. + 2
Sahithi -> Adaptability to Changes and Feedback + 4	KAPIL-> Managing unplanned items during the sprint. + 1
Sasank-Communications with the team and understanding all the deliverables + 3	KAPIL-> Feedback sessions among each other. + 1
sujitha-> User stories from everyone + 1	

What can be improved +

Neha - task Monitoring + 3	Aditya- Regular updates on ongoing tasks + 2
Sahithi->Team Meetings + 1	Shashank Akavaram : Everyone joining meetings at planned time + 3
sujitha-> frequency of group meeting + 1	sujitha-> self reflection on completion of tasks + 1
Hemanvitha - Review sessions of completed tasks + 7	Sasank -Managing time to have every alternate days to know the progress + 2
Kapil- Completing the work within given timeline. we didn't have extra time but felt like we could improve on this. + 72	

Action Items +

We should put up a schedule for a review sessions, like preferably alternate days. + 0	Fix upon a schedule. When someone can't join the scheduled meeting please inform beforehand. + 0
Communicate with other teammates or your classmates if you feel like lagging behind on your part. + 0	



Retrospective – Sprint 3

What went well +

Learning new technologies and their successful incorporation. adapting new languages and technologies according to our requirements. + 3	successful cross-departmental collaboration that led to innovative solutions. + 2
Sasank - High team engagement and participation in decision-making processes. + 4	Sahithi: High team engagement and participation in decision-making processes. + 0
kapil- problem solving and other discussions went really well this time. + 0	Aditya- We used our meeting time efficiently to solve problems, not just talk about them. + 3
feedback sessions really did work for this sprint specially with tech papers Feedback was constructive. It helped improve our work. + 0	team division worked out really well + 0

What can be improved +

kapil- we improved lot on delivery of tasks on time but I think we can improve lot more on it. + 1	We should task division for the next sprint so that we don't get informed on short notice. + 0
Reviewing the on going work + 0	kapil- need more and quick involvement or response for tasks assigned + 1
Aditya- Time and schedule management so that everyone is well aware of the ongoing and upcoming tasks. + 2	meeting schedule + 0
Sasank - Better css design for inventory page + 2	improve the CSS + 1

Action Items +

Improve the technical part + 0	A better meeting schedule Organizing frequent meetings foreviewing the work and make changes. + 0
Better Communication as in inform team members if you can't make it + 0	Improve task division + 0



Retrospective – Sprint 4

What went well +

Dividing works properly among all the team members of the group.	Having meeting daily and communicating what we did and what we are going to do. Having daily WhatsApp calls to update our progress	Everyone's equal contribution towards the project at least by the end team collaboration The team was much more co-
Completed the estimated user stories	work distribution and equal contribution	people asking for help when they need
made changes based on the professors feedback	Submitting the assigned work before deadline and taking feedback or review from other teammates for their work.	Everyone finally getting used to using github

Sprint 4 Retrospective

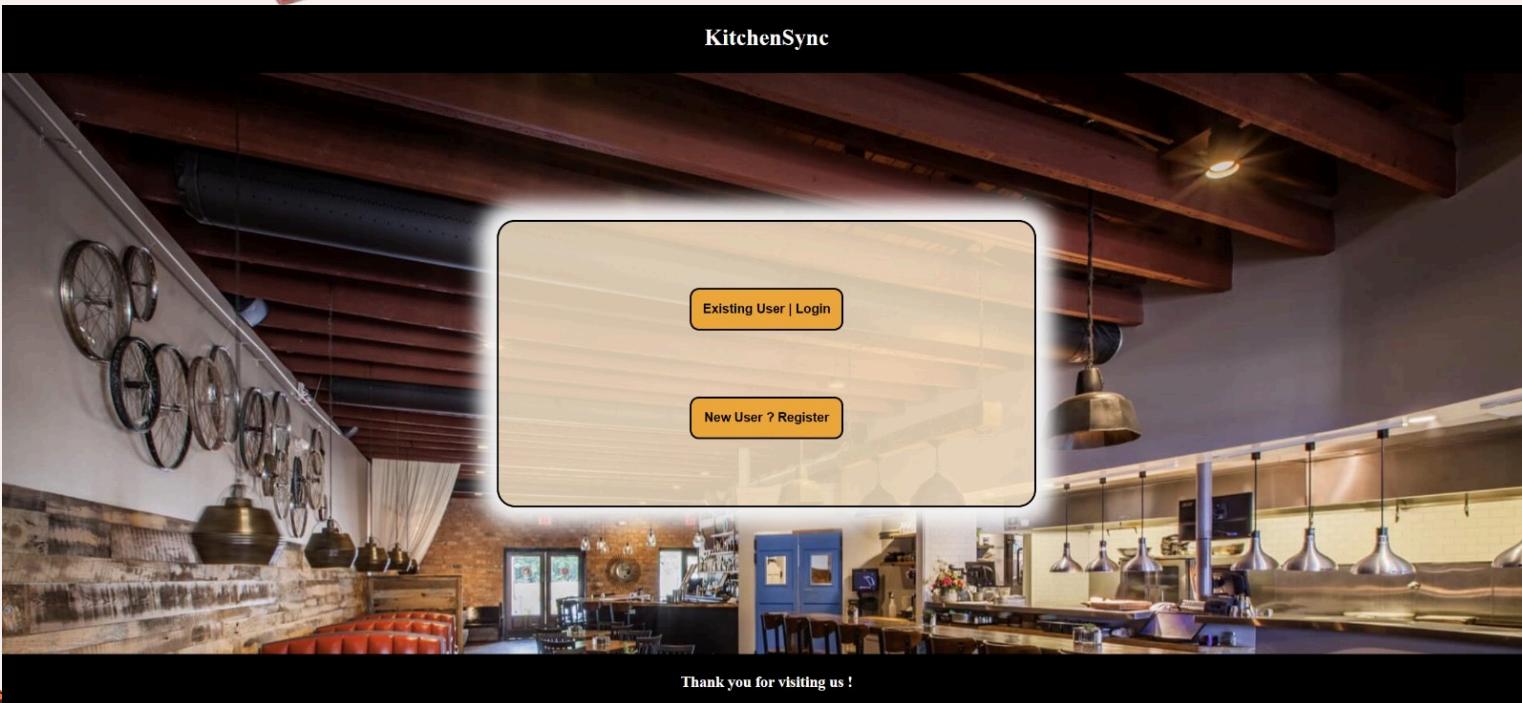
What can be improved +

frequency of meetings to stay on track of other's work. Team members to show up on time for scheduled meetings	updates on the work done so far Checking on each others work frequently for more improvement.	adding more features to the web app. There is always something to make it more better Reviewing their technical skills and updating them.
understanding each others strengths and weaknesses for better collaboration	css part could be improved with one click option to add items	+ 0
Reporting their assigned work on time so that other teammates can review	also could work on scanning QR code part there one can scan and add items	We could have done better on task prioritization.
Increasing more test case coverage.	presenting assigned slides rather than asking for more content to present at the end	Could have done better job on handling bugs
could increase number of user stories to add or learn about better use of application and to be able to solve more problems	using applications to connect to collaborate with each other	+ 0

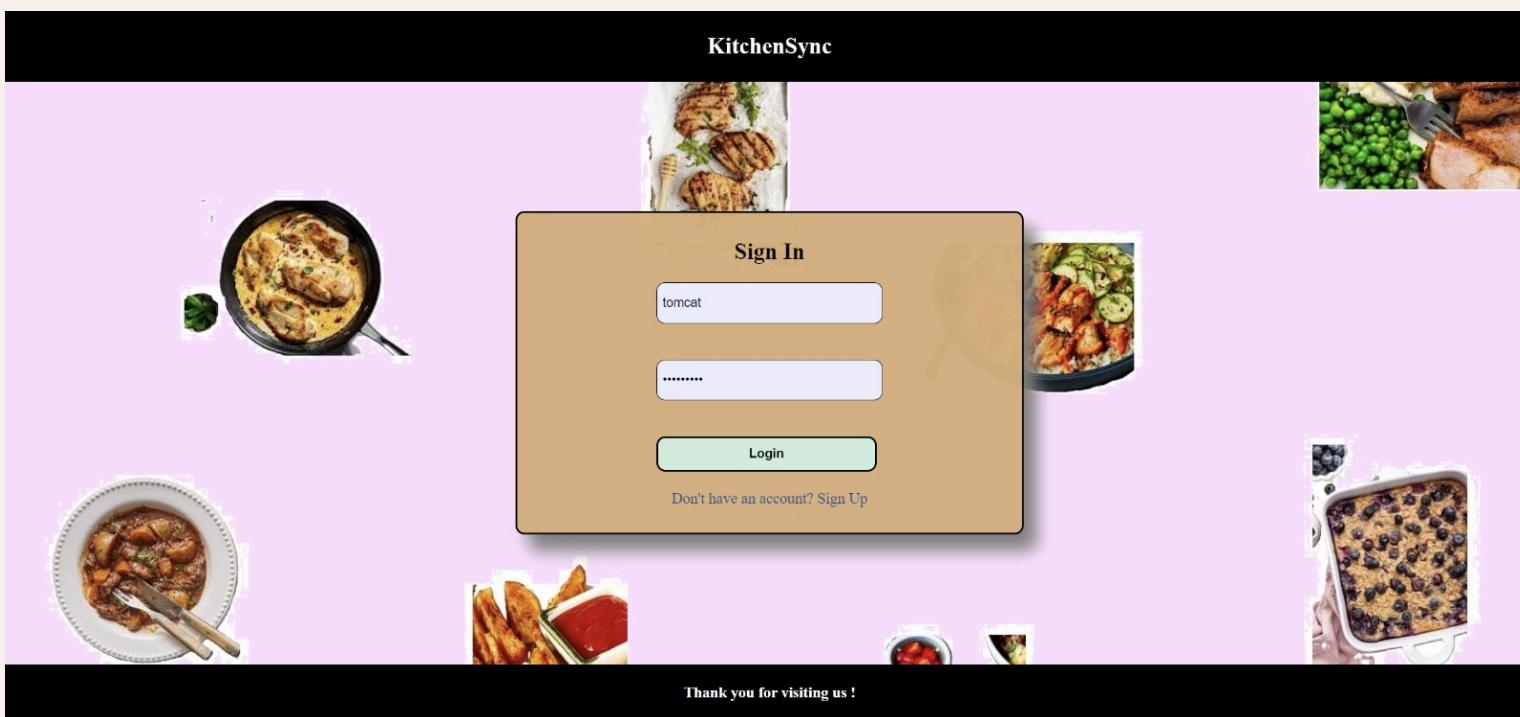
Action Items +

review your technical skills by attempting tests like hackathons or by consulting with your mentors. Work on more projects

Webapp Screenshots

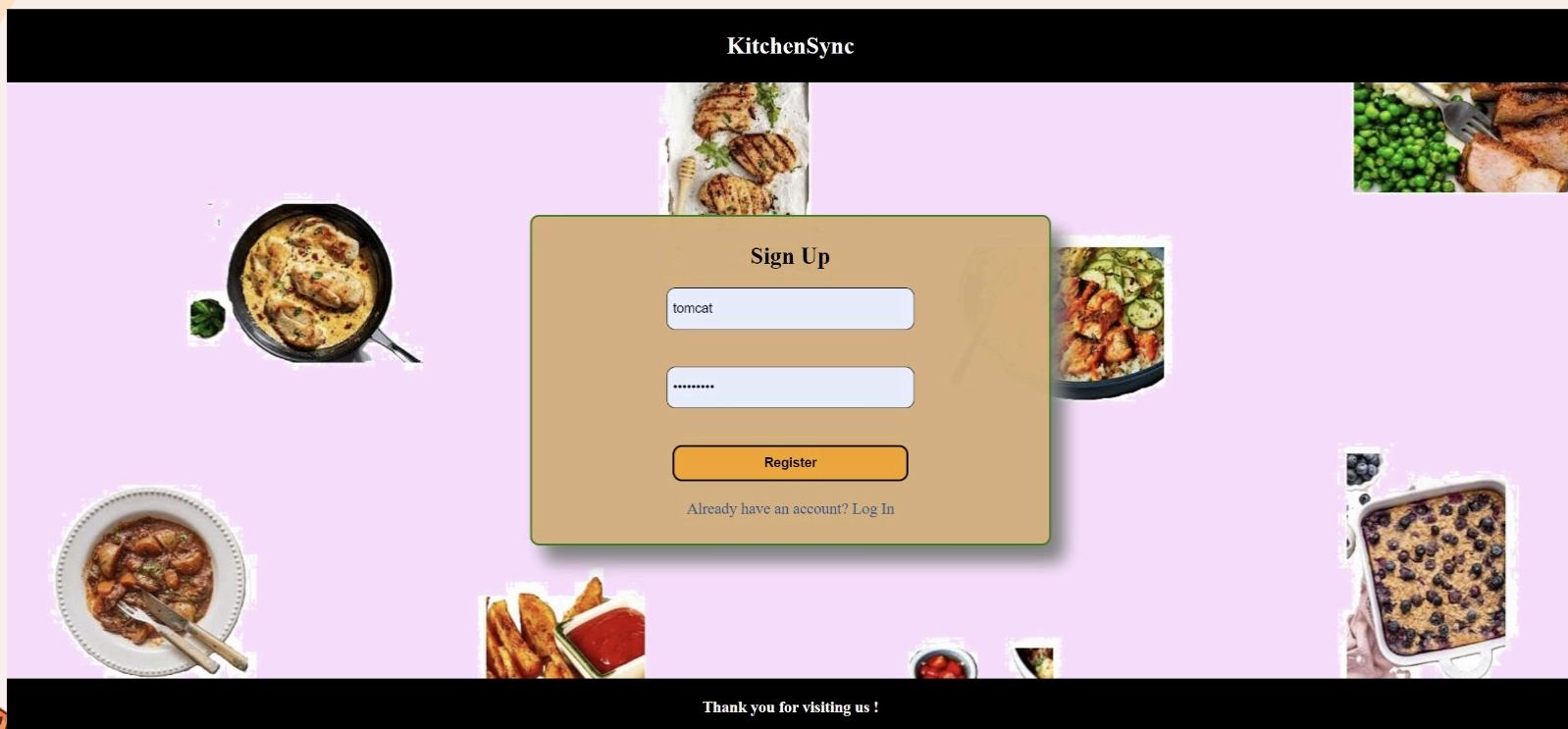


Webapp Screenshots

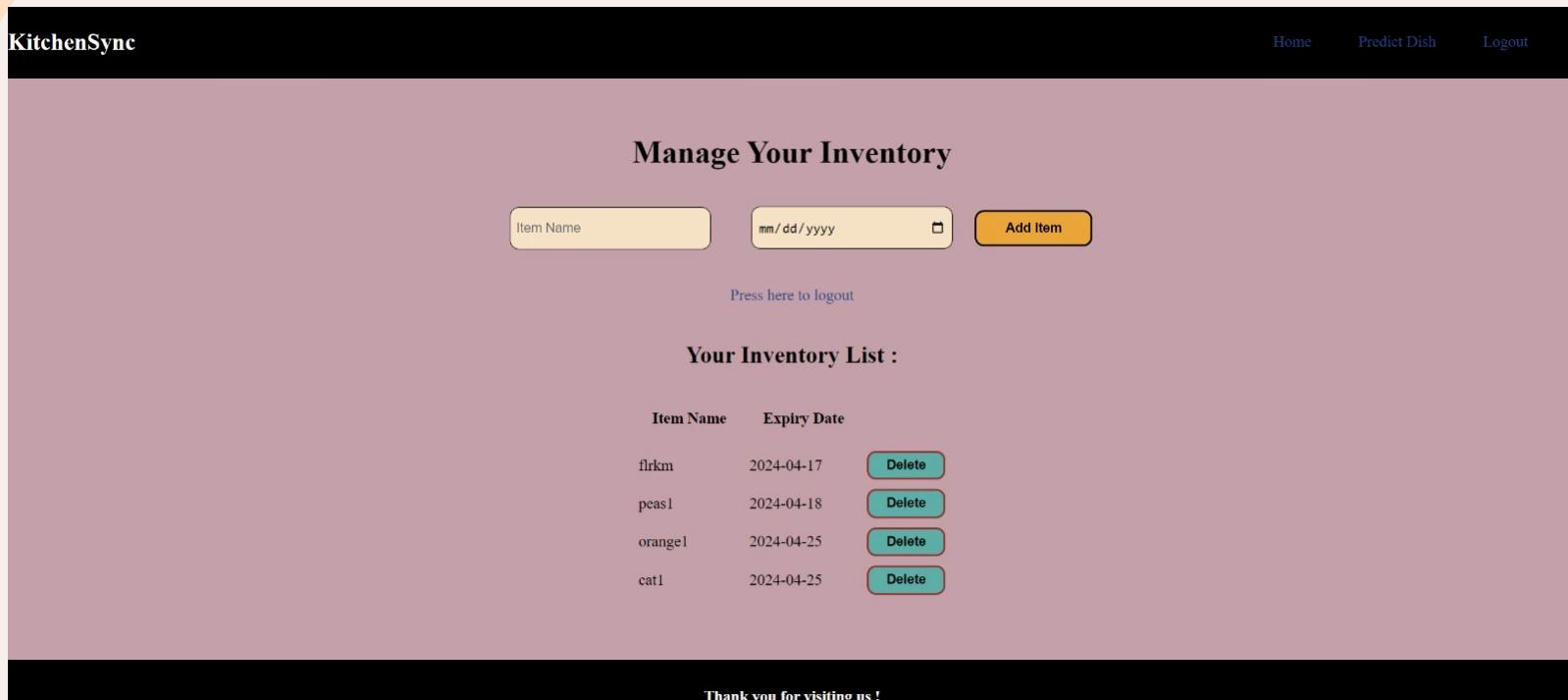


Thank you for visiting us !

Webapp Screenshots



Webapp Screenshots



KitchenSync

Manage Your Inventory

Item Name mm/dd/yyyy Add Item

Press here to logout

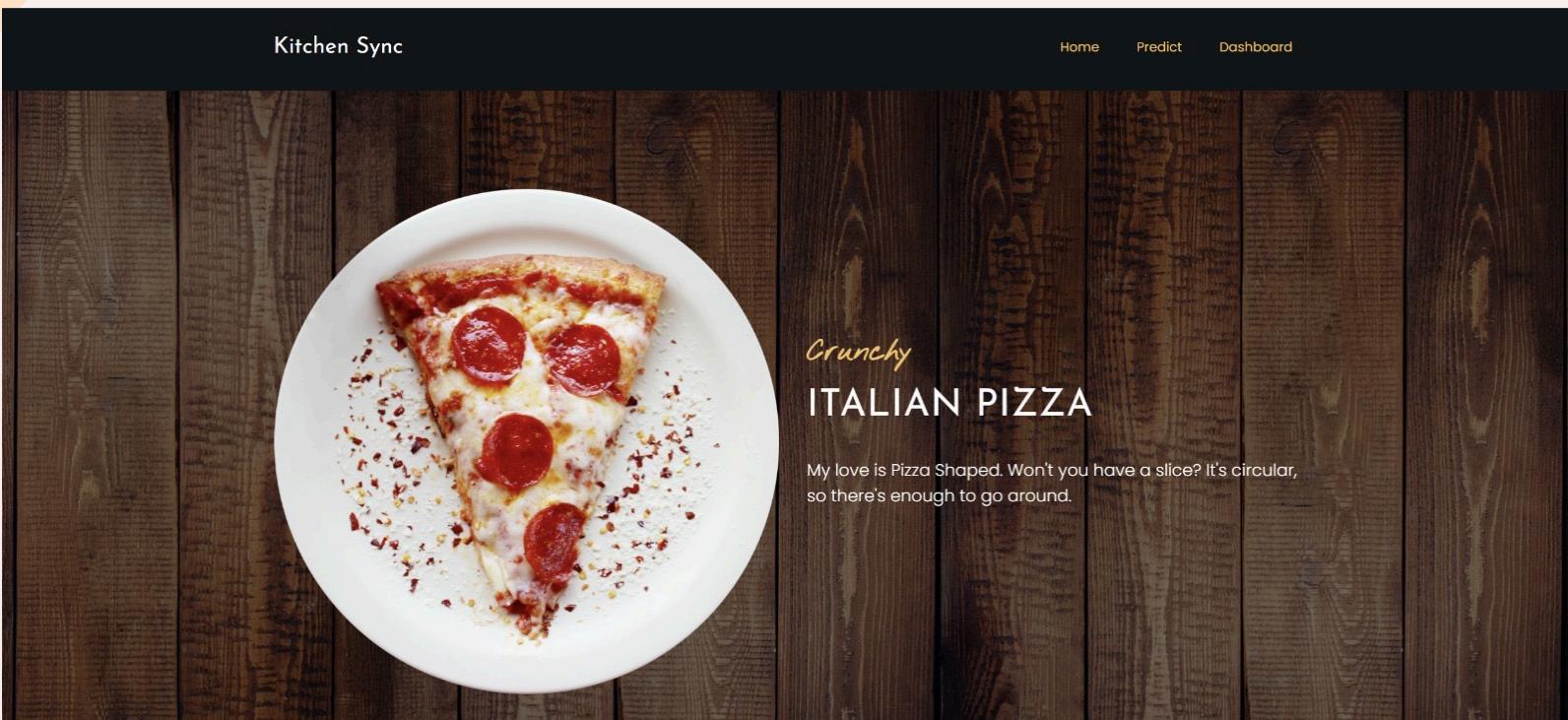
Your Inventory List :

Item Name	Expiry Date	
flrkm	2024-04-17	Delete
peas1	2024-04-18	Delete
orangel	2024-04-25	Delete
cat1	2024-04-25	Delete

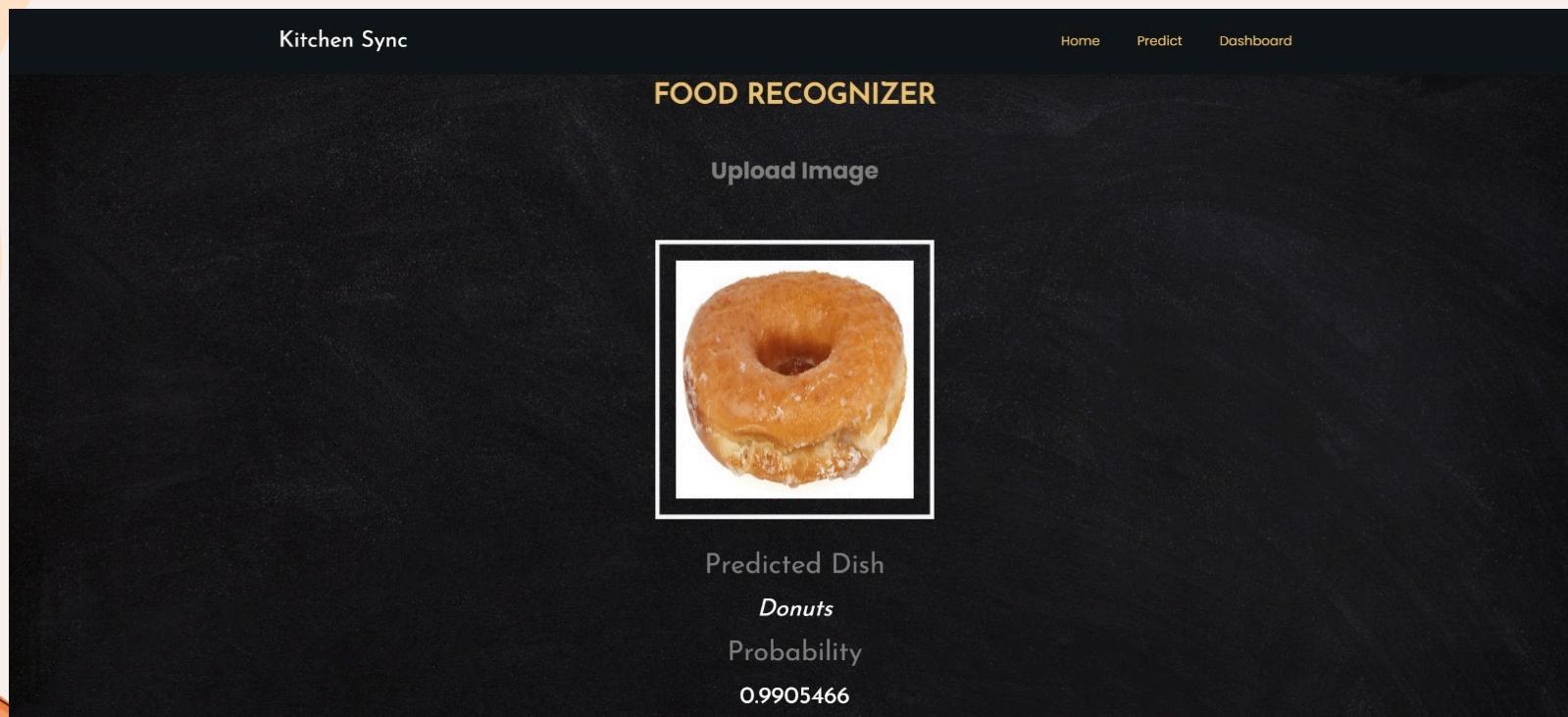
Thank you for visiting us !

This screenshot shows the 'Manage Your Inventory' page of the KitchenSync web application. At the top, there are input fields for 'Item Name' and 'Expiry Date' (mm/dd/yyyy), and a yellow 'Add Item' button. Below these, a link says 'Press here to logout'. The main section is titled 'Your Inventory List :'. It displays a table with four rows of data. Each row contains an item name, its expiry date, and a blue 'Delete' button. The items listed are 'flrkm' (expiry 2024-04-17), 'peas1' (expiry 2024-04-18), 'orangel' (expiry 2024-04-25), and 'cat1' (expiry 2024-04-25). A black bar at the bottom contains the text 'Thank you for visiting us !'.

Webapp Screenshots



Webapp Screenshots



Webapp Screenshots

Kitchen Sync

Home Predict Dashboard

Nutritional Information

Calories: 265

Fat: 6g

Protein: 3g

Carbs: 43g

Videos to Cook :

Hollow donuts - Bánh tiêu (Hollow bread) | Helen's ...

Watch on YouTube

How to make donuts | 2 Ingredients ONLY | Simply ...

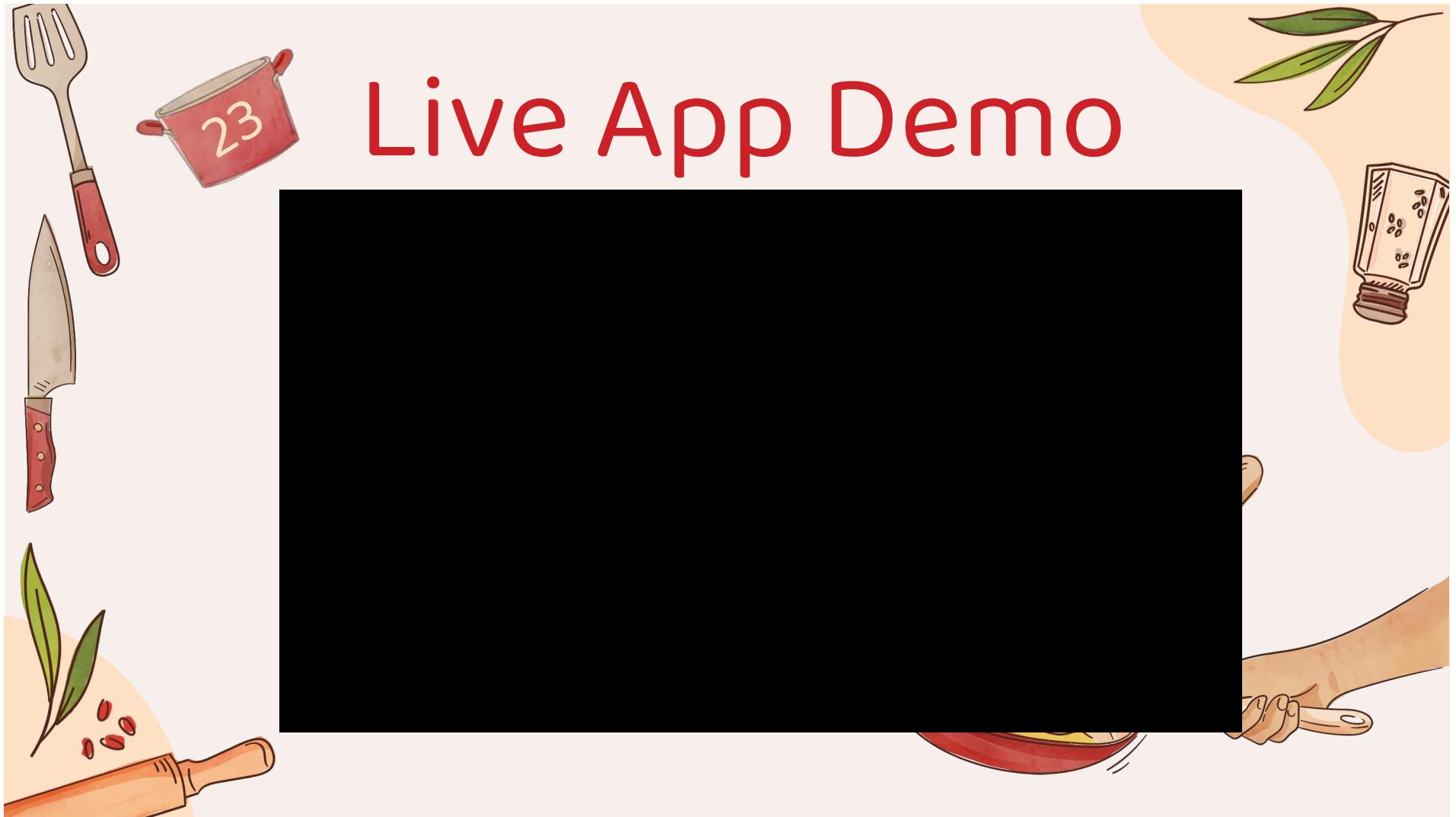
Watch on YouTube

The screenshot shows a dark-themed web application interface. At the top, there are navigation links: "Kitchen Sync", "Home", "Predict", and "Dashboard". Below this, the main content area has a dark background with white text. It displays "Nutritional Information" followed by a list of values: Calories: 265, Fat: 6g, Protein: 3g, and Carbs: 43g. Underneath this, there is a section titled "Videos to Cook :" containing two video thumbnails. Each thumbnail includes a small profile picture of a woman, the video title, and a "Watch on YouTube" button. The first video is titled "Hollow donuts - Bánh tiêu (Hollow bread) | Helen's ..." and the second is "How to make donuts | 2 Ingredients ONLY | Simply ...". The overall design is clean and modern, with a focus on the nutritional data and cooking resources.



GITHUB:<https://github.com/htmw/2024S-neon-nomads>

Live App Demo



Thanks Bon Appétit!

