



Beta Presentation

Intelligent Recognition and Inventory System

The Capstone Experience

Team Whirlpool

Christian Anover

Hamed Alnuaimi

Kerry Dai

Salma Elsaadany

Sarah Johnson

Sarah Swann

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Fall 2025



*From Students...
...to Professionals*

Project Overview

- Helps households avoid overbuying, reduce food waste, and meal plan
- Automatically recognized and tracks groceries through live video feed
- Maintains a real-time digital inventory of fridge contents
- Designed to make everyday organization effortless and stress-free



Team Member's Technical Tasks

Technical Tasks Assigned

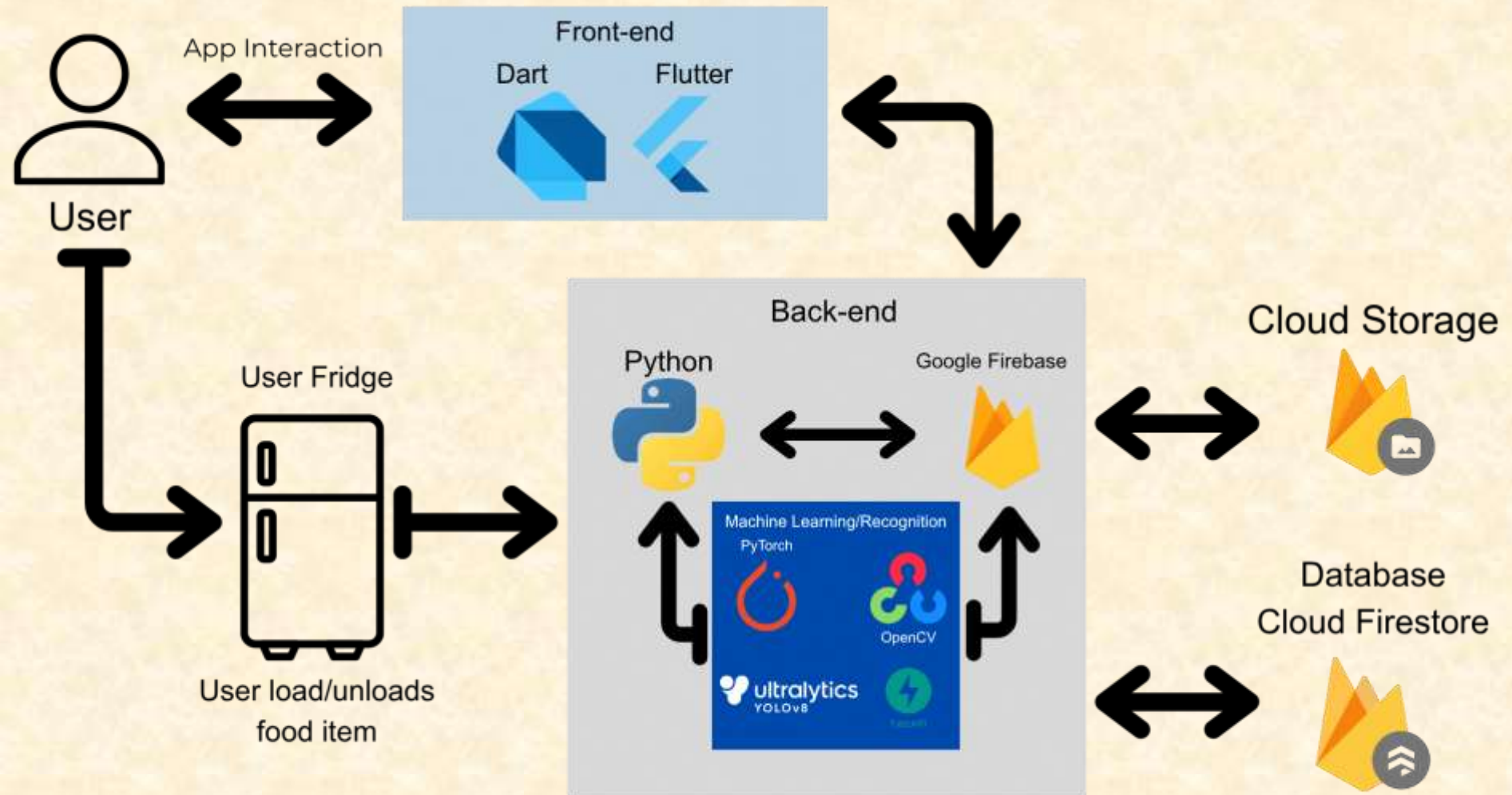
- Christian Anover
▪ Upload feature
▪ Mobile UI optimization
▪ Video database integration
- Hamed Alnuaimi
▪ Initial loading algorithm and model setup
▪ Hardware integration – camera, switches
▪ RecipAI feature implementation
- Kerry Dai
▪ Refine loading algorithm
▪ Arm recognition and privacy blurring
▪ Quantity handling
- Salma Elsaadany
▪ Create flutter app, design and implement UI
▪ Administrative tab – error aggregation and handling
▪ Product filtering capabilities
- Sarah Johnson
▪ Shopping list feature algorithm
▪ Database schema and flutter integration
▪ Testing accuracy of model
- Sarah Swann
▪ User authentication
▪ Login UI
▪ User accessibility – admin permissions

Technical Tasks Completed

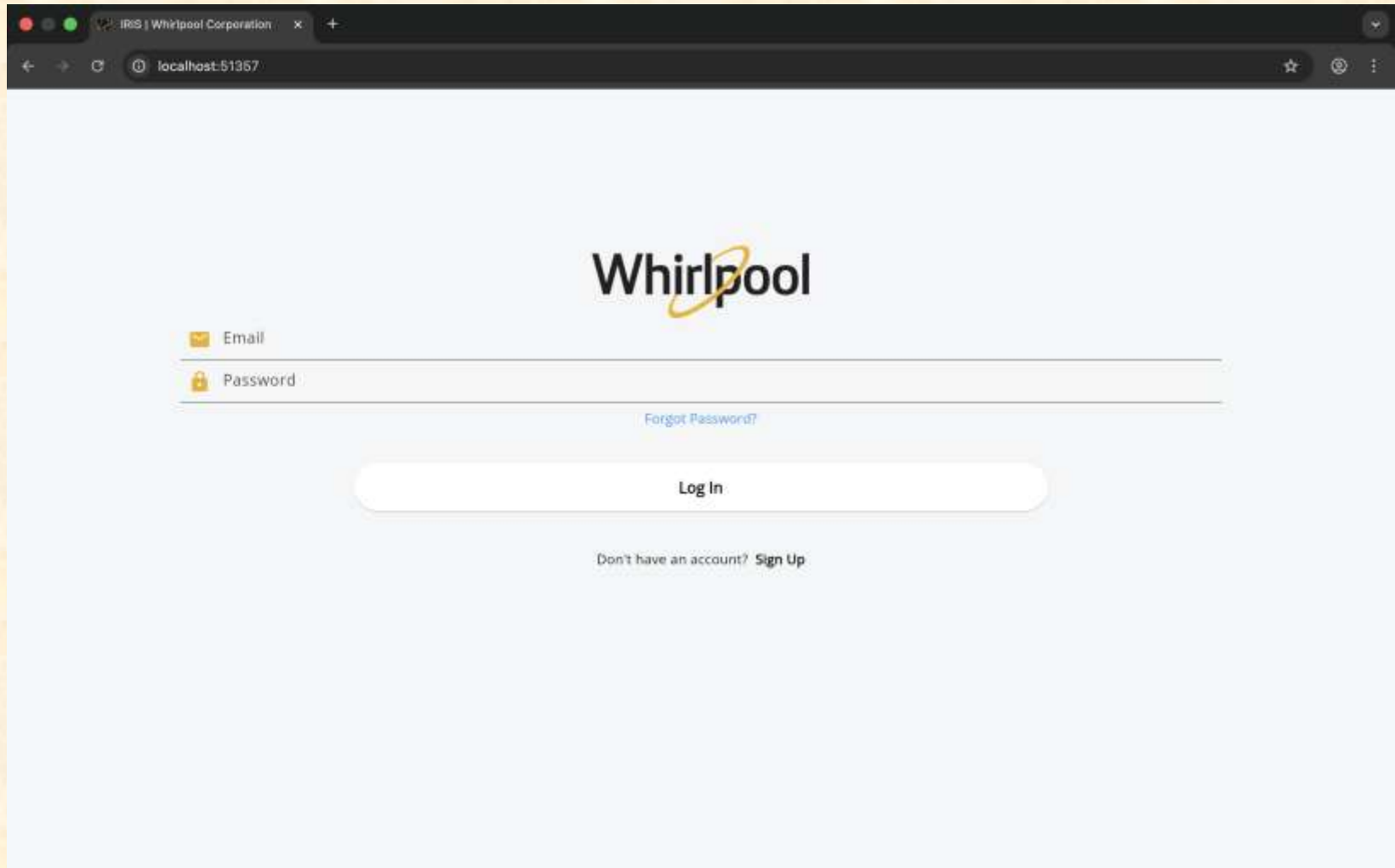
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System Architecture



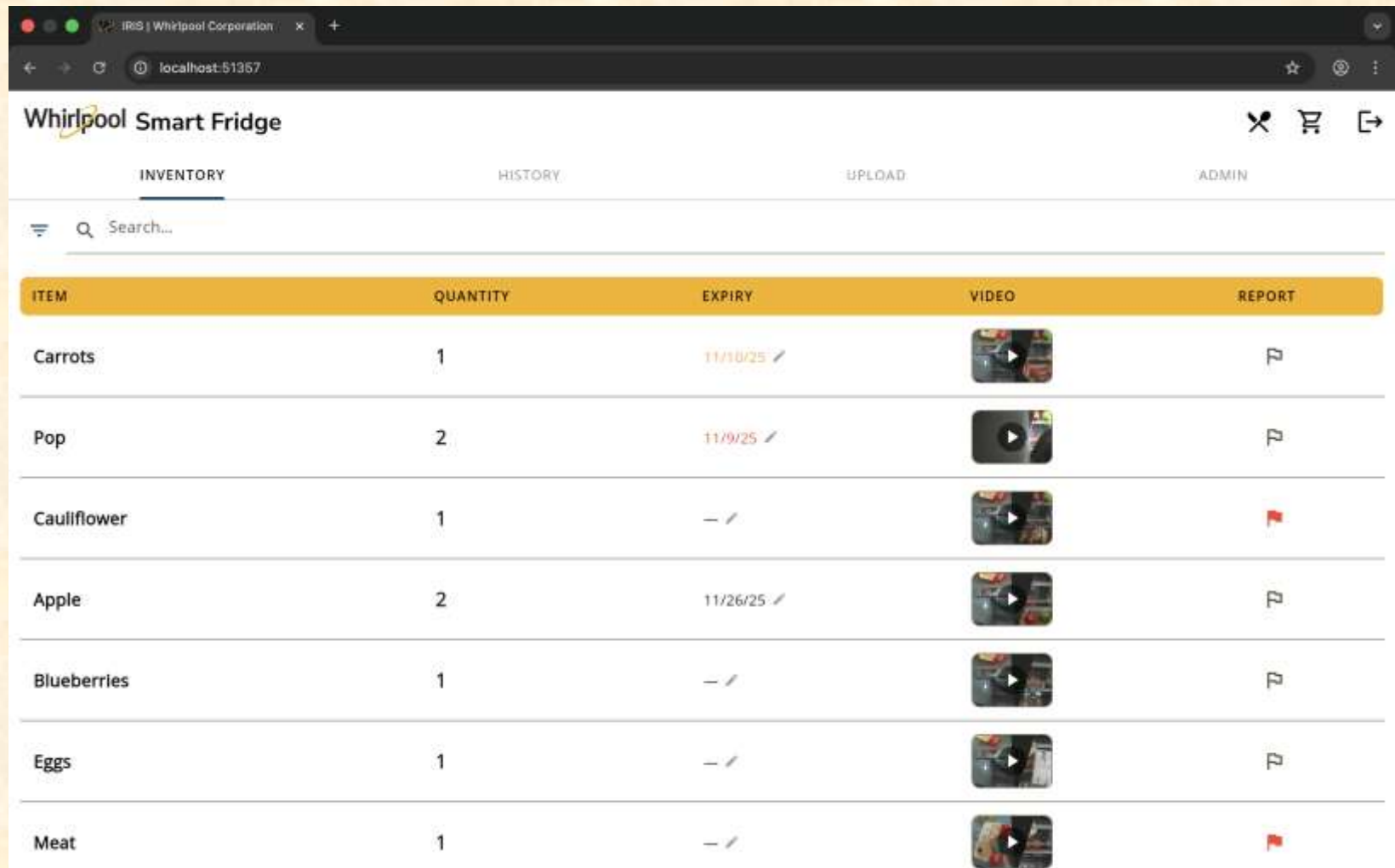
Login Screen



The screenshot shows a web browser window with the title "iRIS | Whirlpool Corporation". The address bar displays "localhost:51357". The main content area features the "Whirlpool" logo at the top. Below the logo are two input fields: "Email" with an envelope icon and "Password" with a lock icon. A blue link "Forgot Password?" is positioned below the password field. A large, rounded "Log In" button is centered below the input fields. At the bottom, the text "Don't have an account? Sign Up" is displayed, with "Sign Up" as a blue link.



Inventory Tab

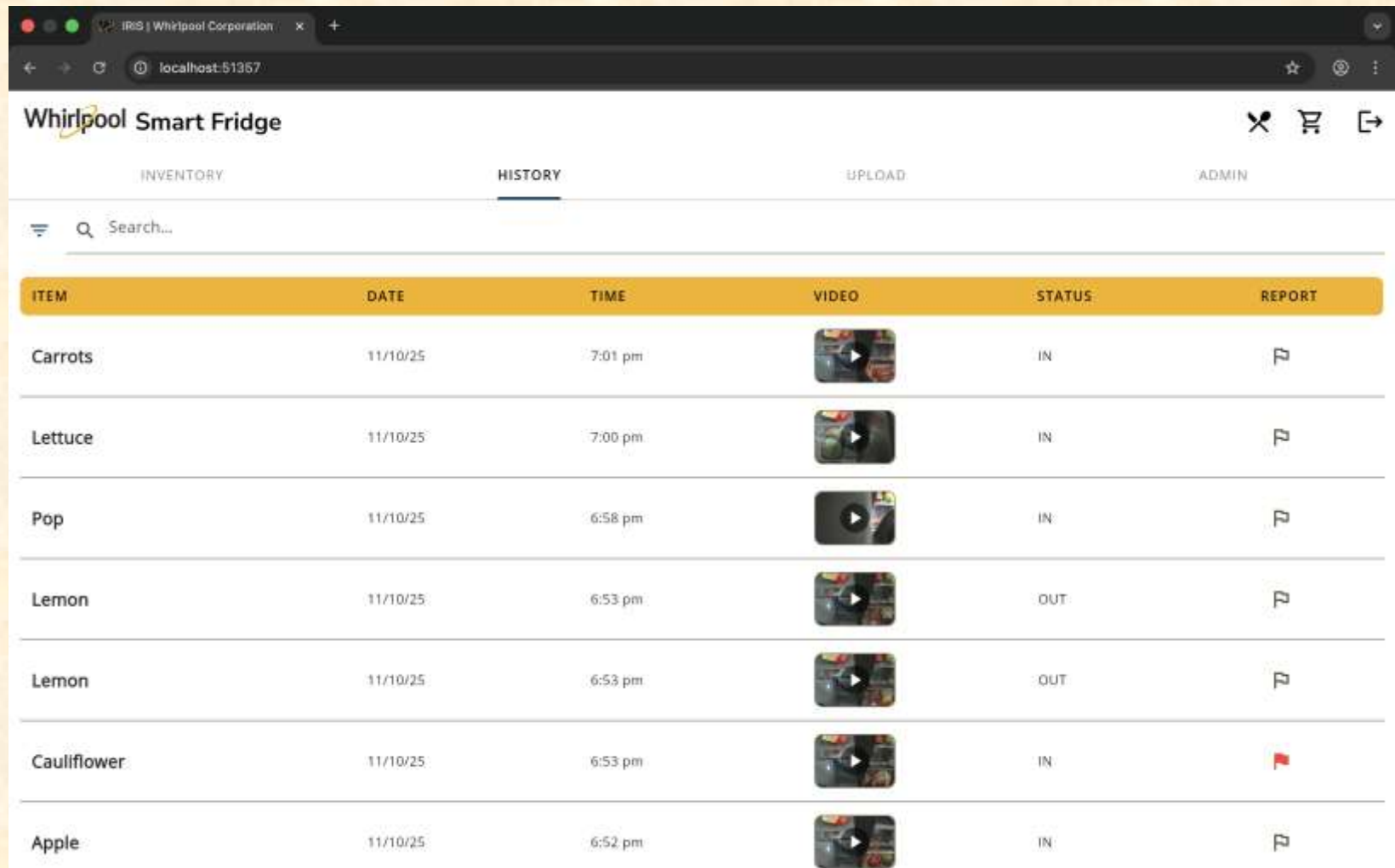


The screenshot shows a web browser window with the address bar displaying 'localhost:51357'. The page title is 'Whirlpool Smart Fridge'. Below the title, there are four tabs: 'INVENTORY' (selected), 'HISTORY', 'UPLOAD', and 'ADMIN'. A search bar is located below the tabs. The main content area displays a table with the following columns: ITEM, QUANTITY, EXPIRY, VIDEO, and REPORT. The table contains seven rows of data representing different food items.

ITEM	QUANTITY	EXPIRY	VIDEO	REPORT
Carrots	1	11/10/25 ✓		
Pop	2	11/9/25 ✓		
Cauliflower	1	— /		
Apple	2	11/26/25 ✓		
Blueberries	1	— /		
Eggs	1	— /		
Meat	1	— /		



History Tab



Whirlpool Smart Fridge

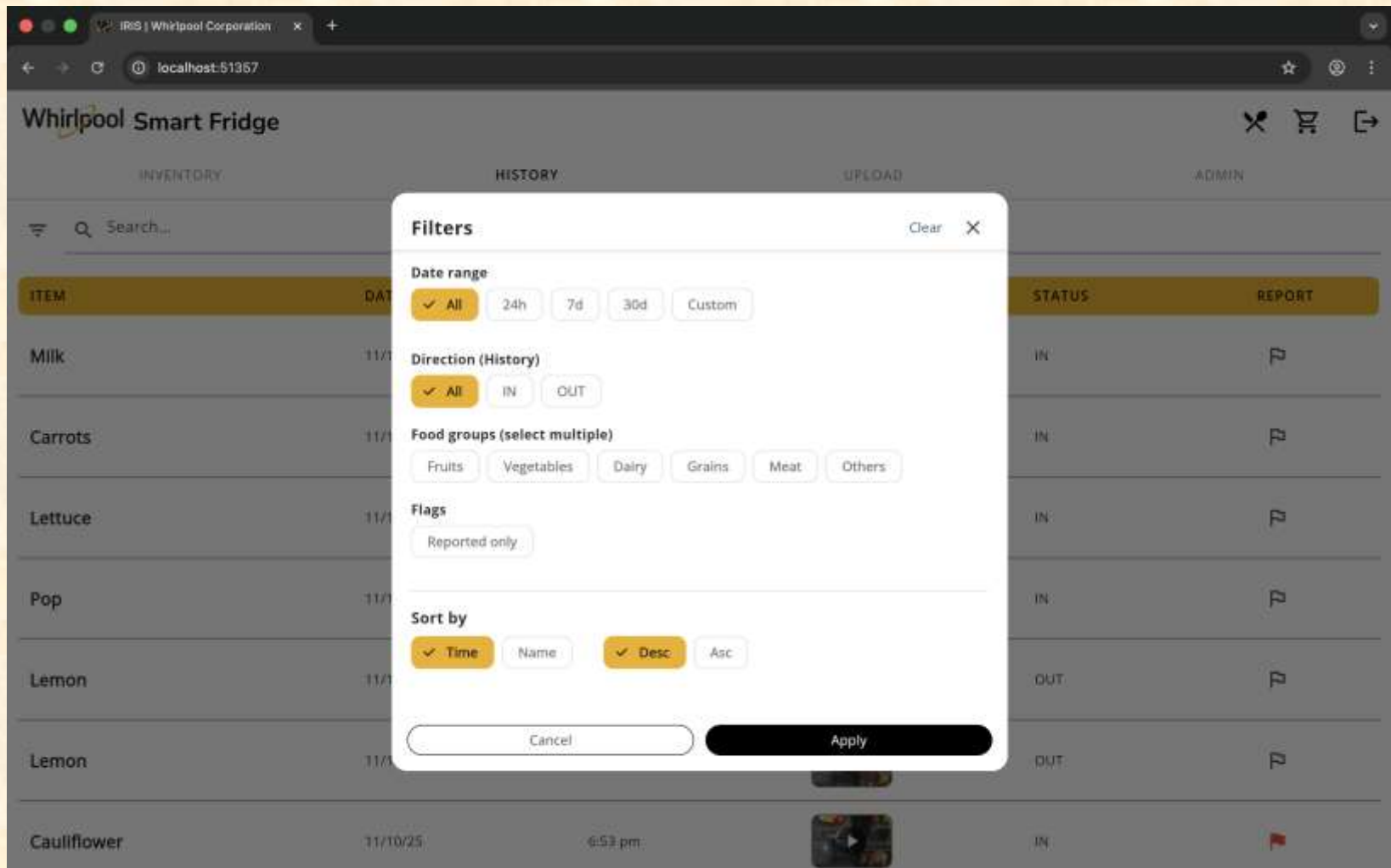
INVENTORY HISTORY UPLOAD ADMIN

Search...

ITEM	DATE	TIME	VIDEO	STATUS	REPORT
Carrots	11/10/25	7:01 pm		IN	
Lettuce	11/10/25	7:00 pm		IN	
Pop	11/10/25	6:58 pm		IN	
Lemon	11/10/25	6:53 pm		OUT	
Lemon	11/10/25	6:53 pm		OUT	
Cauliflower	11/10/25	6:53 pm		IN	
Apple	11/10/25	6:52 pm		IN	



Filtering



Upload Tab

The screenshot shows a web browser window with the address bar displaying "localhost:57992". The page title is "Whirlpool Smart Fridge". The navigation bar includes "INVENTORY", "HISTORY", "UPLOAD" (which is the active tab), and "ADMIN".

Below the navigation bar is a yellow banner that says "UPLOAD AN ITEM".

The main content area features a media upload interface. It has two buttons: "Camera" and "Gallery". A small video thumbnail is visible in the center, showing a close-up of a red apple. Below the thumbnail, the text "Media uploaded" is displayed. A close button (X) is located in the bottom right corner of the media upload area.

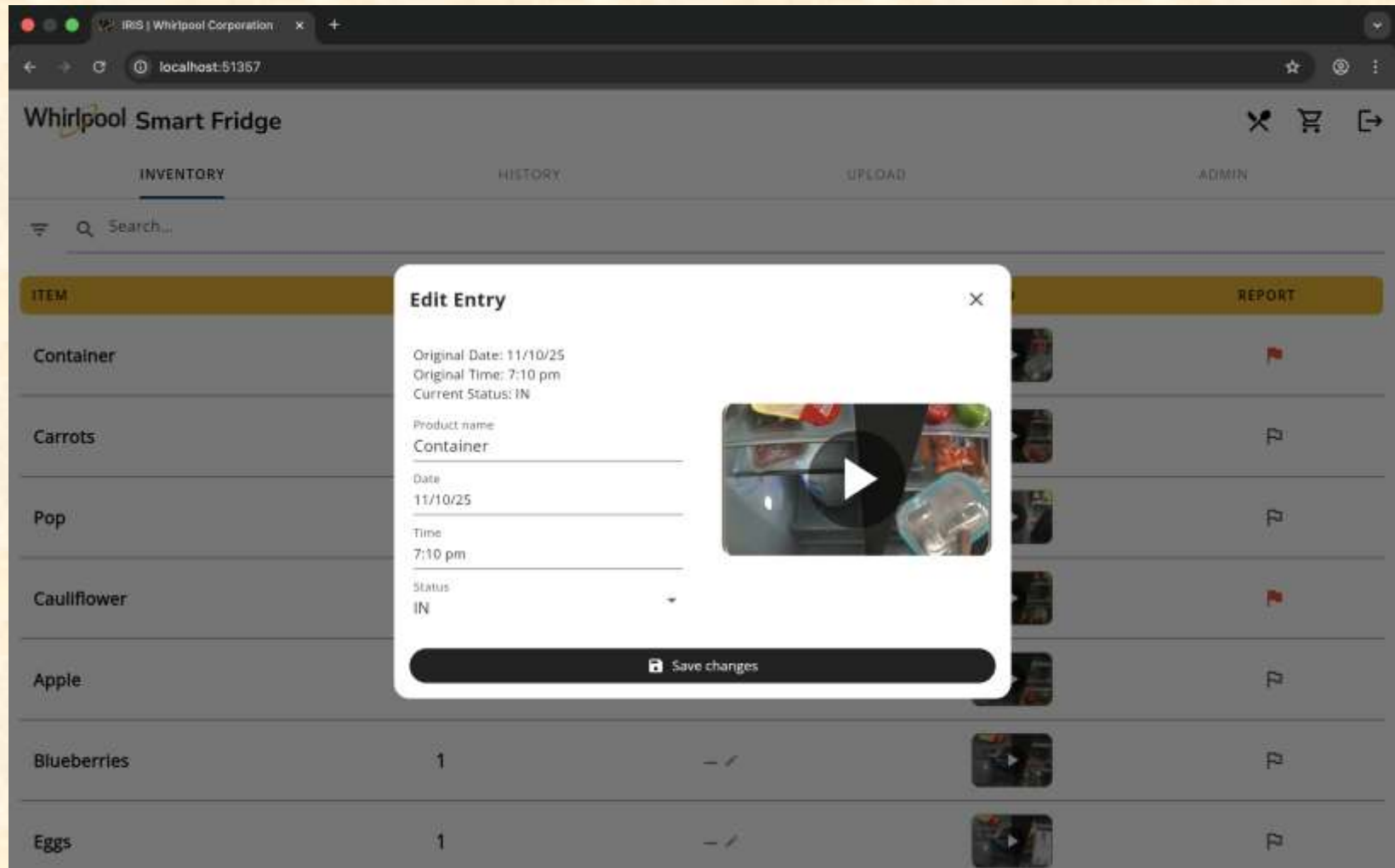
Below the media upload area are several form fields:

- Product Name:** A text input field containing the word "Apple".
- Date:** A date picker field showing "11/10/25".
- Time:** A time picker field showing "8:28 pm".
- Load Status:** A dropdown menu currently set to "IN".

At the bottom of the form is a black button with a white plus sign and the text "ADD TO FRIDGE".



Report an Issue



Admin Tab

The screenshot displays a web browser window with the address bar showing 'localhost:51357'. The page title is 'Whirlpool Smart Fridge'. The navigation bar includes tabs for 'INVENTORY', 'HISTORY', 'UPLOAD', and 'ADMIN', with 'ADMIN' being the active tab. Below the navigation bar is a yellow 'ERROR HANDLING' section. Under this section, there are four filter buttons: 'All' (selected), 'Misidentified', 'Load Direction', and 'Other'. The main content area lists four 'Misidentified' items, each with a video thumbnail, a title, a description of the misidentification, and a date.

Thumbnail	Title	Description	Date
	Misidentified	Product: Container Renamed 'milk' → 'Container'	11/10/25
	Misidentified	Product: Cauliflower Renamed 'pepper' → 'Cauliflower'	11/10/25
	Misidentified	Product: Orange Renamed 'lemon' → 'Orange'	11/10/25
	Misidentified	Product: Meat Renamed 'milk' → 'Meat'	11/10/25



Grocery List

Whirlpool Smart Fridge

INVENTORY HISTORY UPLOAD ADMIN

Search...

ITEM	QUANTITY	VIDEO	REPORT
Container	1		
Carrots	1		
Pop	2		
Cauliflower	1		
Apple	2		
Blueberries	1		
Eggs	1		

Grocery Shopping List

- ☐ Bread (2)
- ☒ Lemons (1)
- ☐ Lettuce (1)
- ☒ Strawberries (1)
- ☐ Orange (2)
- ☐ Meat (1)
- ☐ ...

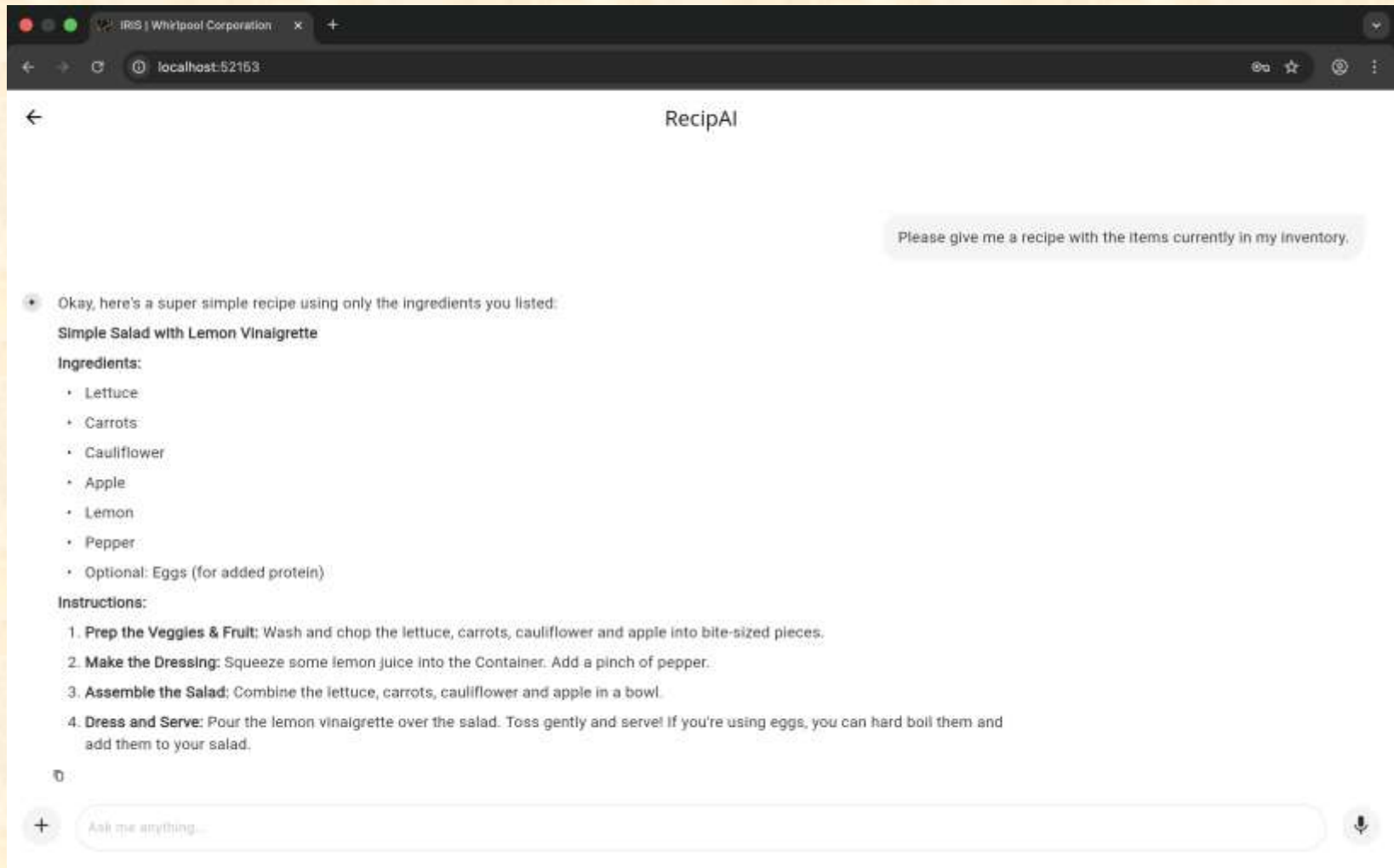
Add Item Quantity

Add Item

Close



RecipAI



What's left to do?

- Stretch Goals
 - Expiry date feature (including filtering)
 - More edge case handling
- Other Tasks
 - Bug fixes
 - Improve accuracy of object detection model
 - Deploy mobile app



Questions?

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