

# Jim's Inventory System

MIS 4100

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# Overview

- Jim's grocery store currently uses an outdated and slow inventory system, so we set out to develop a modern solution that includes all the features they need
- The client was looking for the system to show what items they currently have, what items are running low, a list of orders done, and daily sales

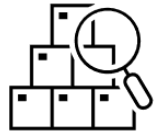


# Figma Design

[illegible]

# System Features

- Three tables on the main dashboard
  - Main table with information on all items in the store
  - Running low table with items that need to be ordered soon
  - Daily sales table showing which items sold and the revenue generated
- Order Buttons
  - User can put into system when they ordered an item
  - Orders can be saved as drafts or marked as complete
- Can add a new item, filter the columns shown, edit current items, and search for UPC
- Can filter dates on sales and order pages



# Final System

```
1 use `TestProductManagement`;
2 select * from inventory;
3
4
```

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Result Grid Filter Rows: Search Edit: Export/Import:

UPC	VendorID	VendorCode	UOM	BaseCost	CaseSize	Brand	Quantity	Description	Size	VolWeight	Measure	SubDepartment	
1	101	VEND101	EA	0.89	12	Dole	150	Organic Bananas	1lb	1.00	lb	PROD	0
100000000001	101	VEND101	EA	0.89	12	Dole	150	Organic Bananas	1lb	1.00	lb	PROD	0
100000000002	102	VEND102	EA	2.35	6	Silk	80	Almond Milk - Unsweetened 1L	1L	1.00	L	DAIRY	0
100000000003	103	VEND103	EA	1.15	10	Wonder	60	Whole Wheat Bread - Loaf	500g	0.50	g	BAKERY	0
100000000004	104	VEND104	EA	5.50	8	Tyson	40	Chicken Breast - Boneless Skinless	1kg	1.00	kg	MEAT	0
100000000005	105	VEND105	EA	3.00	12	Great Value	100	Frozen Mixed Berries 500g	500g	0.50	g	FROZEN	0
HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	0
													0
													0

Result Grid Form Editor Field Types

Python Jim's Inventory Dashboard New Order Orders Draft Orders

Search by UPC... Search

	UPC	VendorID	VendorCode	UOM	BaseCost	CaseSize	Brand	Quantity	Description	Size	VolWeight	Measure	SubDepartment	Depos
1	1	101	VEND101	EA	0.89	12	Dole	150	Organic ...	1lb	1.00	lb	PROD	0.00
2	100000000001	101	VEND101	EA	0.89	12	Dole	300	Organic ...	1lb	1.00	lb	PROD	0.00
3	100000000002	102	VEND102	EA	2.35	6	Silk	80	Almond Milk ...	1L	1.00	L	DAIRY	0.10
4	100000000003	103	VEND103	EA	1.15	10	Wonder	60	Whole Whea...	500g	0.50	g	BAKERY	0.00
5	100000000004	104	VEND104	EA	5.50	8	Tyson	40	Chicken ...	1kg	1.00	kg	MEAT	0.00
6	100000000005	105	VEND105	EA	3.00	12	Great Value	100	Frozen Mixe...	500g	0.50	g	FROZEN	0.00

Running Low

	Upc	Qty	Sub-Department	VendorID
1	10000000000...	2	BAKERY	103
2	10000000000...	2	BAKERY	103
3	10000000000...	3	DAIRY	102
4	10000000000...	3	DAIRY	102
5	10000000000...	4	MEAT	104
6	10000000000...	4	MEAT	104
7	10000000000...	5	PROD	101
8	10000000000...	5	PROD	101

Sales

	Date	UPC	Description	AMT	Qty	Wgt
1	2025-04-01	1234567890...	Organic ...	5.99	3	2.34567
2	2025-04-01	9876543210...	Almond Milk ...	3.49	2	None
3	2025-04-02	4567891234...	Whole Whea...	2.79	1	None
4	2025-04-02	3216549870...	Chicken ...	12.50	2	1.25000
5	2025-04-03	6549873216...	Frozen Mixe...	6.25	1	0.50000

More Info

# Sales Details section

1 use `TestProductManagement`;  
2 select \* from salesdetails;  
3  
4

100% 27:2

Result Grid Filter Rows: Search

Home

Select Date Range

	Date	UPC	Description	AMT	Qty	Wgt
1	2025-04-01	1234567890...	Organic ...	5.99	3	2.34567
2	2025-04-01	9876543210...	Almond Milk ...	3.49	2	None
3	2025-04-02	4567891234...	Whole Whea...	2.79	1	None
4	2025-04-02	3216549870...	Chicken ...	12.50	2	1.25000
5	2025-04-03	6549873216...	Frozen Mixe...	6.25	1	0.50000

Date	UPC	Description	AMT	Qty	Wgt
2025-04-01	123456789012	Organic Bananas	5.99	3	2.34567
2025-04-01	987654321098	Almond Milk - Unsweetened 1L	3.49	2	HULL
2025-04-02	456789123456	Whole Wheat Bread - Loaf	2.79	1	HULL
2025-04-02	321654987012	Chicken Breast - Boneless Skinless	12.50	2	1.25000
2025-04-03	654987321654	Frozen Mixed Berries 500g	6.25	1	0.50000

Sales Details

Home

Select Date Range

	Date	UPC	Description	AMT	Qty	Wgt
1	2025-04-01	1234567890...	Organic ...	5.99	3	2.34567
2	2025-04-01	9876543210...	Almond Milk ...	3.49	2	None
3	2025-04-02	4567891234...	Whole Whea...	2.79	1	None
4	2025-04-02	3216549870...	Chicken ...	12.50	2	1.25000

Select Date Range

Start Date:  
April 2025  
14 30 31 1 2 3 4 5  
15 6 7 8 9 10 11 12  
16 13 14 15 16 17 18 19  
17 20 21 22 23 24 25 26  
18 27 28 29 30 1 2 3  
19 4 5 6 7 8 9 10

End Date:  
April 2025  
14 30 31 1 2 3 4 5  
15 6 7 8 9 10 11 12  
16 13 14 15 16 17 18 19  
17 20 21 22 23 24 25 26  
18 27 28 29 30 1 2 3  
19 4 5 6 7 8 9 10

Apply

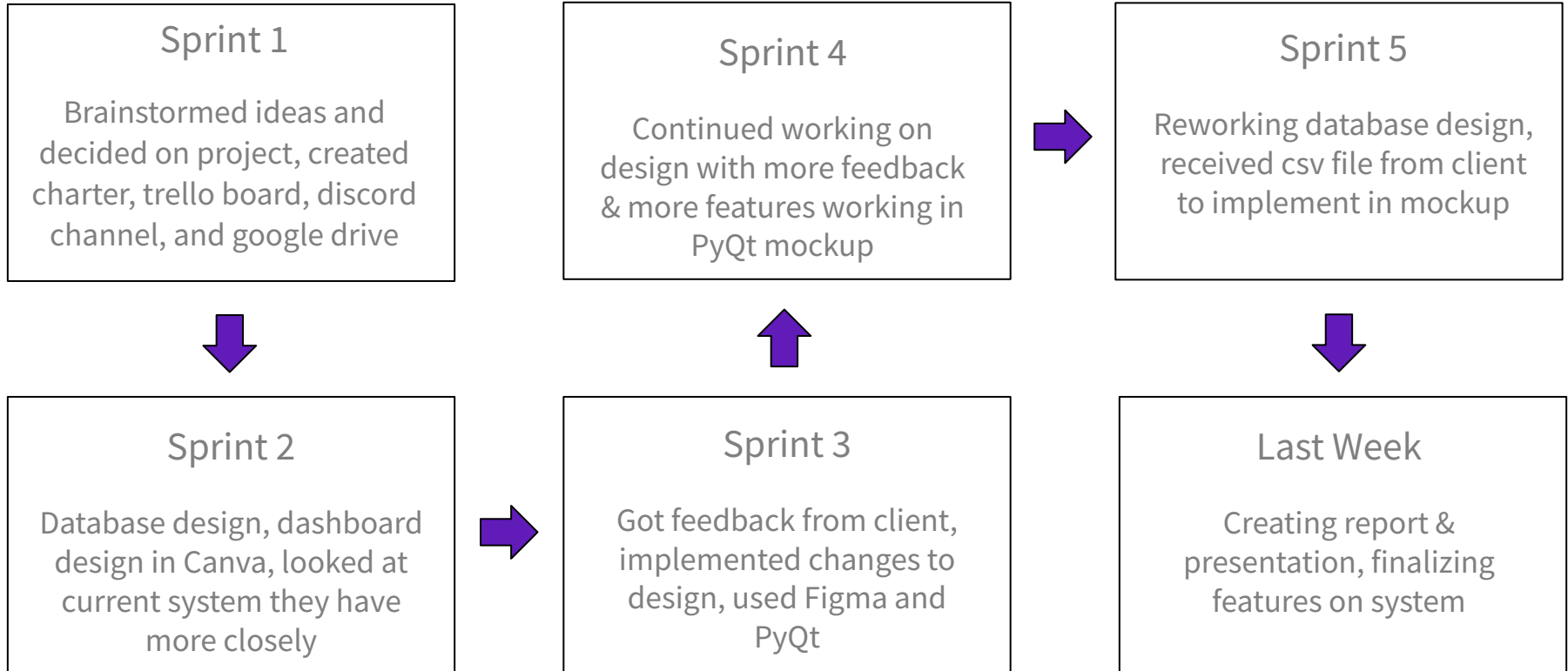
Filtering sales from 2025-04-01 to 2025-04-02

# Tools & Technologies Used

- Canva to create the design and Figma to have the buttons work
- PyQt6 to create the system
- MySQL for the database
- Generative AI to help create some of the application



# Agile Process





# Challenges

- The first database design we had was overly complex and was causing problems
  - We reworked the design that is more suitable for the system we currently have
- Had to learn more about PyQt and how it works
  - Had to figure out how it would connect to our MySQL database
- The store is very short staffed so it would sometimes take a while for them to reply to our emails



# Recommendations

<b>If there's a team member with technical expertise</b>	<b>If there is no technical team member</b>	<b>If they don't want to pay for a subscription</b>
Locally hosted server to set up, update, and backup	Fully hosted server such as Amazon AWS to manage updates, security, and backups of the database	Running the server off of the dedicated server rack that they already own instead of an old desktop

# Next Steps

- One of our stretch goals was implementing an expiration date tracking feature. Although we didn't have time to build it into the system, we recommend the following solutions:
  - Shelf stocking training: Instruct employees to place new inventory behind older items to ensure first-in, first-out (FIFO) rotation and reduce waste
  - Manual sell-by checks: Implement bi-weekly or monthly checks for items nearing expiration. While this requires some employee training, it would complement a future, automated expiration tracking feature.



**Any Questions?**