

Site URL: <http://flip2.engr.oregonstate.edu:2123/>

Project Title: Ophelia's Potions and Spells Emporium

Group 106

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Summary of student/instructor feedback and iterative changes

Initial version: In our initial database outline, we planned a database consisting of six tables plus two intersection tables for our two M:N relationships (potions to transactions and spell books to transactions). These same tables have persisted through the normalization process and final implementation.

Peer-reviewers suggested other tables whose functionality would have been redundant, so in our **second iteration**, we edited our descriptions of existing tables for clarity.

In our **third iteration**, we updated names of entities and attributes for consistency. Table names were capitalized and attribute names were converted to snake case. We fixed small syntax errors identified by our peers in testing, such as missing commas.

In our **fourth iteration**, we implemented CRUD functionality for a single entity. We polished the UI and added a stylesheet for aesthetics, smoother navigation, and clarity of information. This included our choice of color scheme, site font, and the decision to add a fixed sidebar for ease of navigation. We chose diluted high-contrast colors (pink and pale green) to ensure clear readability without eye strain, and this aesthetic has persisted through each iteration since. We added dynamic drop-down menus and READ functionality for intersection tables, and we fixed inconsistencies in the transactions table between the DML and the UI identified by peer reviewers.

In our **fifth iteration**, we continued implementing CRUD functionality. We were informed by peer reviewers that our UPDATE and DELETE functions were not working; in truth, they were working fine but the changes were not visible until the page refreshed. We addressed this with an auto-refresh after each call to UPDATE/DELETE.

In our **sixth iteration**, we implemented remaining CRUD functionality and bug fixes, and ensured that our project was consistent across the outline, ERD, Schema, UI, and the database itself.

Database Outline

Overview

Ophelia's Potions and Spells Emporium is a shop run by your friendly neighborhood witch. This database allows her to manage her shop, including sales records, inventory (potions, potion ingredients, and spell books) and customers. The shop has had a recent influx of new customers and she has been struggling to keep track of orders. She now has 50-100 customers a day. One particular problem that this database will help solve is ensuring that she has all of the necessary ingredients for her potions. Knowing which ingredients are used most frequently will help her keep an adequate stock of potions.

Tables

Customers

This table keeps track of all of Ophelia's current customers. The only information that we need to record is the customers first name, last name, and email (for promotional materials of course)

customer_ID: int, auto_increment, unique, not NULL, PK

first_name: varchar(50), not NULL

last_name: varchar(50), not NULL

email: varchar(50), not NULL

relationships:

- Customers/Transactions is 1 to M (Customer can be associated with many sales records but a sales record can only be associated with one customer)

Transactions

This table keeps a record of all of the sales that Ophelia has at her shop, including which customer placed the order and what items they purchased.

transaction_ID: int, auto_increment, unique, not NULL, PK

customer_ID: int, not NULL, FK from Customers

transaction_date: date, not NULL

payment_method: varchar(20), not NULL

relationships:

- Transactions / Customers is M to 1 (one customer can make many purchases, but a purchase can be made by only one customer at a time)
- Transactions / Potions is M to M (a sale can include many potions, and a potion type can be sold in many different sales)
- Transactions / Spell_Books is M to M (a sale can include many different spellbooks, and a spell book can be sold in many different sales)

Potions

This table contains all of the types of potions that are sold at Ophelia's store and tracks relevant details (name, effect, price, et cetera).

potion_ID: int, auto_increment, unique, not NULL, PK

potion_name: varchar(120), unique, not NULL

potion_effect: varchar(150), not NULL

potion_color: varchar(20), not NULL

potion_price: int, not NULL

relationships:

- Potions / Transactions is M to M (a given sales record can have many potions associated with it and a given potion can be associated with many sales records)
- Potions / Ingredients is M to M (a given potion can have many ingredients and a given ingredient can be associated with many potions)

Spell_Books

This table contains all of the spell books that are sold at her store.

book_ID: int, unique, not NULL, PK

book_title: varchar(50), not NULL

book_price: int, not NULL

relationships:

- Spell_Books / Transactions is M to M (a given sales record can include many books and a given book can be sold many times)

Ingredients

This table keeps a record of all of the ingredients that are needed to make the potions.

ingredient_ID: int, unique, not NULL, PK

ingredient_name: varchar(50), not NULL

ingredient_source: varchar(120), not NULL

relationships

- Ingredients / Potions is M to M (a given potion can have many ingredients and a given ingredient can be used in many potions)

Book_Transactions

This is an intersection table to bridge the M:N relationship between Spell_Books and Transactions.

book_ID: int, not NULL, FK from Spell_Books

transaction_ID: int, not NULL, FK from Sales_Records

book_price: int

quantity: int

Potion_Transactions

This is an intersection table to bridge the M:N relationship between Potions and Transactions.

potion_ID: int, not NULL, FK from Potions

transaction_ID: int, not NULL, FK from Sales_Records

potion_price: int

quantity: int

Potion_Recipes

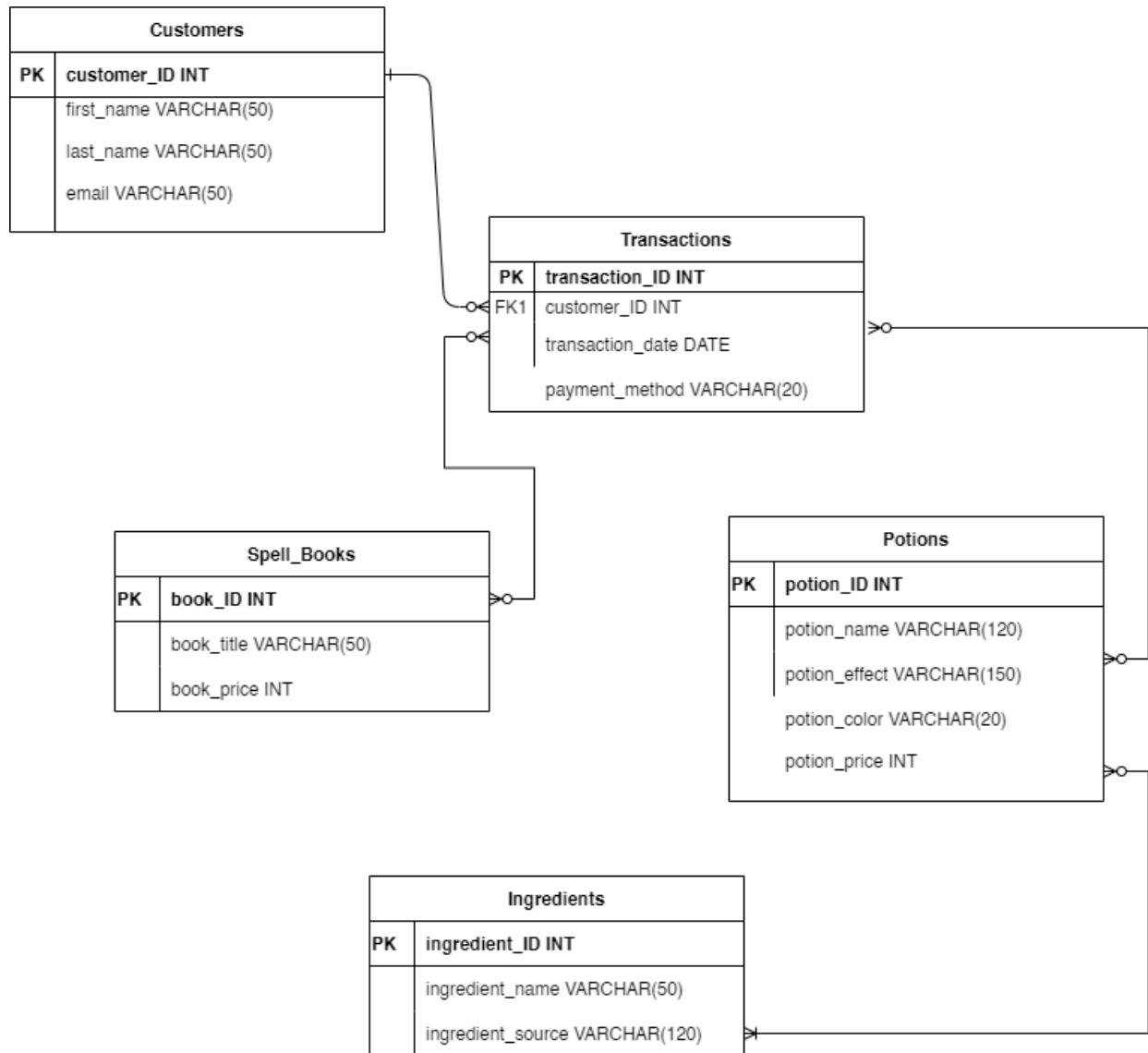
This is an intersection table to bridge the M:N relationship between Potions and Ingredients.

potion_ID: int, not NULL, FK from Potions

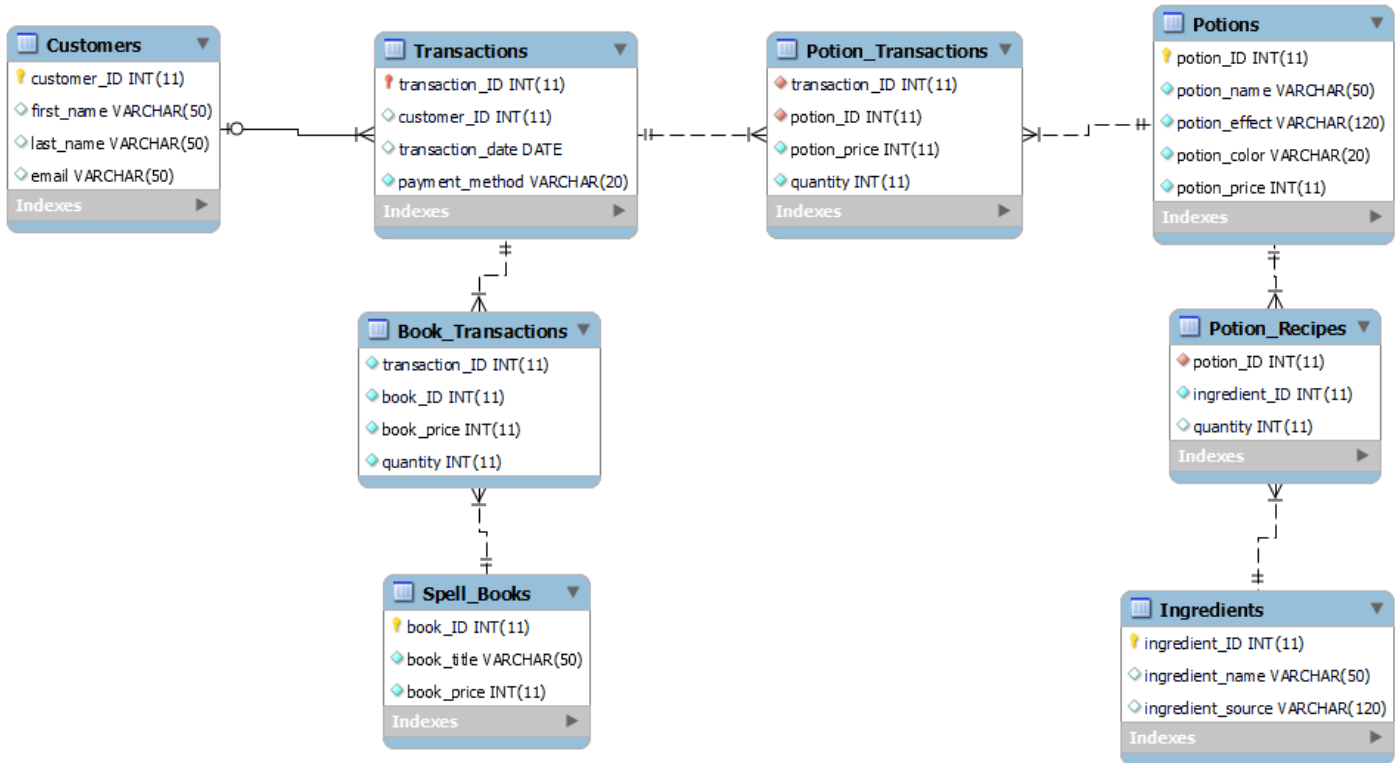
ingredient_ID: int, not NULL, FK from Potion_Ingredients

quantity: int

ERD:



Schema:



Sample Data:

POTION_ID (PK)	POTION_NAME	POTION_EFFECT	POTION_COLOR	POTION_PRICE	POTION_RECIPE (FK)
1	"Potion of Water Breathing"	Allows the user to breathe underwater.	Blue	20	1
2	"Potion of Exploding Flame"	Creates a big flame explosion.	Yellow	25	2
3	"Potion of Intense Focus"	Grants the user intense focus for its duration.	Purple	20	3
4	"Potion of Wondrous Healing"	Heals the user from many a sickness.	Red	40	4
5	"Potion of Light-Footedness"	Grants the user enhanced speed and agility.	Pink	20	5
6	"Potion of Orange"	Bottomless bottle of orange	Orange	9	6

	Juice"	juice.			
7	"Potion of Pain"	Causes great pain to any who drink it.	White	99	7
8	"Potion of Mystery"	Unknown.	Gray	999	8

BOOK_ID (PK)	BOOK_TITLE	BOOK_PRICE			
1	"Beginner's Guide to Witchery"	25			
2	"New Age Cooking Spells"	25			
3	"Hitchhiker's Guide to Hexes"	42			
4	"Terrible, Horrible, No-Good Curse Book"	50			
5	"Spell Jars for Dummies"	18			

TRANSACTIONID(PK)	CUSTOMER_ID (FK)	DATE	PAYMENT_METHOD
43	22	2023-01-29	Apple Pay
44	38	2023-02-04	Debit Card
45	9	2023-02-05	Credit Card
46	12	2023-02-05	Credit Card
47	3	2023-02-08	Cash
48	26	2023-02-11	Debit Card
49	22	2023-02-12	Cash

50	22	2023-02-23	Apple Pay
51	10	2023-02-24	Credit Card

CUSTOMER_ID	FIRST_NAME	LAST_NAME	EMAIL
18	Harriet	Haystacker	stacking.hay@gmail.com
19	Belinda	Blight	blight.on.society@gmail.com
20	Walter	Wobbly-legs	my.legs.wobble@gmail.com
21	Larry	Lawnmower	larry@gmail.com
22	McKinsleigh	Brown	mckinsleigh2006@gmail.com
23	Jack	In-the-box	jackinthebox@gmail.com

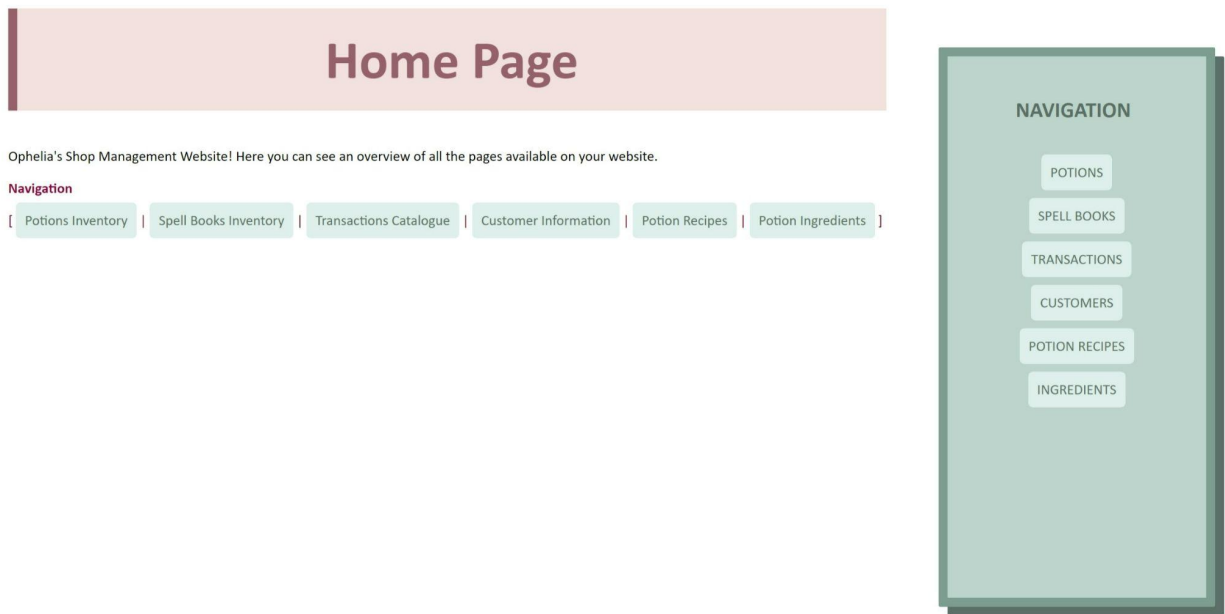
INGREDIENT_ID	INGREDIENT_NAME	INGREDIENT_SOURCE	
1	Sweet-scented rosewater	That sketchy shop at the corner of 5th and Main	
2	Fresh frog feet	The frog bog	
3	A perfectly tuned high C	Ophelia's perfectly tuned piano	
4	Day-old bread	Ophelia's favorite food joint down south of downtown	
5	Orange	The orange orchard up north of uptown	
6	Pixie powder	Where pixies live	

INTERSECTION TABLES:	
BOOK_ID	TRANSACTION_ID
1	43
4	43
2	47
3	48
3	50
4	50
5	50
POTION_ID	TRANSACTION_ID
4	1
5	1
6	48
1	51
4	51
POTION_ID	INGREDIENT_ID
3	1
3	3
3	6

6	1
6	6
8	2
8	5
8	6
7	3
1	3

Screen Captures

Home Page and Navigation



The navigation sidebar is present on every page of the website.

Potions Page

CREATE/INSERT/ADD NEW for Potions table

Potions

Here you can add, update, delete, and view the shop's available potions.

Add New Potion

Potion name:

Potion effect:

Potion color:

Potion price:

Add potion to inventory

UPDATE/PUT for Potions table (with dynamically populated dropdown)

Updating A Potion

To update a potion, select the name from the list and update the information

Potion name:

Potion effect:

Potion color:

Potion price:

READ/BROWSE and DELETE for Potions table

Browse All Potions

Search Results: Potions Inventory

potion_ID	potion_name	potion_effect	potion_color	potion_price	delete
16	Potion of Water Breathing	Allows its user to breathe underwater.	blue	25	Delete
17	Potion of Intense Focus	Allows CS students to complete LeetCode continuously until receiving a suitable job offer.	rainbow	600	Delete
18	Potion of Wondrous Healing	Heals its user from many a wound or sickness.	red	40	Delete
28	Potion of Laughter	Makes you and your friends laugh non-stop	yellow	0	Delete

Spell Books Page

CREATE/INSERT/ADD NEW for Spell Books Table

Spell Books

Here you can add, update, delete, and view the shop's available books.

Add New Spell Book

Spell Book title:

Book Price:

UPDATE/PUT for Spell Books Table (with dynamically populated dropdown)

Updating A Spell Book

To update a book, select the title from the list and update the information

Book title: Book price:

READ/BROWSE and DELETE for Spell Books table

Browse All Spell Books

Search Results: Spell Book Inventory

book_ID	book_title	book_price	delete
2	New Age Cooking Spells	33	<input type="button" value="Delete"/>
3	Hitchhiker's Guide to Hexes	42	<input type="button" value="Delete"/>
5	Spell Jars for Dummies	19	<input type="button" value="Delete"/>
11	Monster Book of Monsters	50	<input type="button" value="Delete"/>
12	CS FAANG Job Offers	900	<input type="button" value="Delete"/>
13	Not a scary book	11	<input type="button" value="Delete"/>

Transactions Page

CREATE/INSERT/ADD NEW for Transactions Table

Transactions

Here you can add, update, delete, and view the shop's transaction history.

Add Transaction

Customer:

Transaction date:

Payment method:

READ/BROWSE and DELETE for Transactions table

Search Results: Transactions				
transaction_ID	customer_ID	transaction_date	payment_method	delete
1	22	0000-00-00	Apple Pay	<input type="button" value="Delete"/>
2	38	0000-00-00	Debit Card	<input type="button" value="Delete"/>
5	22	0000-00-00	Cash	<input type="button" value="Delete"/>
6	3	0000-00-00	Apple pay	<input type="button" value="Delete"/>
7	4	0000-00-00	credit card	<input type="button" value="Delete"/>
8	4	Tue Sep 12 2023 00:00:00 GMT-0700 (Pacific Daylight Time)	apple pay	<input type="button" value="Delete"/>
9	3	Tue Sep 12 2023 00:00:00 GMT-0700 (Pacific Daylight Time)	apple pay	<input type="button" value="Delete"/>

CREATE/INSERT/ADD NEW for Potion_Transactions Intersection

Add Potion Transaction

Transaction ID: Potion:

Price:

quantity:

READ/BROWSE for Potion_Transactions Intersection

Browse All Potion Transactions

Search Results: Potion Transactions

transaction_ID	potion_ID	potion_price	quantity
1	17	24	2
2	18	26	12
5	28	22	1
5	17	12	2
5	16	12	2
1	16	12	100

CREATE/INSERT/ADD NEW for Book_Transactions Intersection

Add Book Transaction

Transaction ID: book:

Price:

quantity:

READ/BROWSE for Book_Transactions Intersection

Browse All Spell Book Transaction

Search Results: Spell Book Transactions

transaction_ID	book_ID	book_price	quantity
47	2	25	1
48	3	42	1
49	3	42	1
1	2	100	100

Customers Page

CREATE/INSERT/ADD NEW for Customers Table

Customers

Here you can add, update, delete, and view the shop's customer information.

Add New Customer

First name:

Last name:

Email:

UPDATE/PUT for Customers Table (with dynamically populated dropdown)

Update Customer Information

To update a customer entry, select name from list. You may update last name or email

Full name: Last name: Email:

READ/BROWSE and DELETE for Customers table

Browse All Customers

Search Results: Customer Database

customer_ID	first_name	last_name	email	delete
1	Harriet	Haystacker	stacking.hay@gmail.com	<input type="button" value="Delete"/>
2	Belinda	Blight	blight.on.society@gmail.com	<input type="button" value="Delete"/>
3	Walter	Wobbly-legs	my.legs.wobble@gmail.com	<input type="button" value="Delete"/>
4	Larry	Lawnmower	l.mower@gmail.com	<input type="button" value="Delete"/>
5	McKinsleigh	Brown	mckinsleigh2006@gmail.com	<input type="button" value="Delete"/>
6	Sarah	Salem	witchy1@gmail.com	<input type="button" value="Delete"/>
7	Sarah	Salem	witchy1@gmail.com	<input type="button" value="Delete"/>
8	Horace	Slughorn	hslughorn@example.com	<input type="button" value="Delete"/>
10	Growling	Monster	growl@monster.com	<input type="button" value="Delete"/>

Potion Recipes Page

CREATE/INSERT/ADD NEW for Potion Recipes Table

Potion Recipes

Here you can add, update, delete, and view the shop's available Potion Recipes.

Add New Potion Recipe

Potion Name:

Ingredient:

Ingredient Quantity:

Add Potion Recipe

UPDATE/PUT for Potion Recipes Table (with dynamically populated dropdown)

Updating A Potion Recipe

To update a potion recipe, select the recipe ID from the list and change the potion, ingredient, and quantity

Potion Recipe ID: Potion Name: Ingredient: Ingredient Quantity:

READ/BROWSE and DELETE for Potion Recipes table

Browse All Potion Recipes

Search Results: Potion Recipes

potion_recipes_ID	potion_ID	ingredient_ID	quantity	delete
6	16	1	6	Delete
9	17	1	12	Delete
10	17	1	1000	Delete
13	16	12	2	Delete

Potion Ingredients Page

CREATE/INSERT/ADD NEW for Ingredients Table

Ingredients

Here you can add, update, delete, and view the ingredients needed for potions.

Add New Ingredient

Ingredient Name:

Ingredient Source:

Add Ingredient

UPDATE/PUT for Ingredients Table (with dynamically populated dropdown)

Updating An Ingredient

To update an ingredient, select the name from the list and update the information

Ingredient Name:

Select an Ingredient

Ingredient source:

Submit

READ/BROWSE and DELETE for Ingredients table

Browse All Ingredients

Search Results: Ingredient Inventory

ingredient_ID	ingredient_name	ingredient_source	delete
1	Sweet-scented rosewater	5th Main Street	<div>Delete</div>
11	Lemon grass	Thai Corner Store	<div>Delete</div>
12	epicIngredient	epicfarms	<div>Delete</div>