

URL: <http://classwork.engr.oregonstate.edu:5427/>

Executive Summary

FurniTech is a growing furniture company with four retail locations located in Los Angeles, New York, Chicago, and San Francisco. The company sells a wide variety of furniture products, including both stock and custom-made items. Each year, FurniTech sells approximately 2,000 items and generates around \$1.2 million in revenue across all locations.

Each location has approximately 3-5 employees in various roles running each store, such as sales representatives, stockers, furniture designers, and managers. With plans to expand in the next 3 years, the company intends to implement a database-driven website to better track their assets and make informed business decisions. The database will also have a record of what orders were placed by which customers, what furniture type has been purchased, as well as the sales rep that helped close the transaction, and the location the orders were placed at.

From the initial database design in Step 1 to the final implementation of DDL.sql, PL.sql, and the UI, our tables and ERD stayed aligned with the original outline. The only change was adding seed data to PL.sql and DDL.sql so each location shows at least one product based on Step 4 feedback.

In Step 5 I planned to use stored procedures such as our 'Delete Leroy Jenkins' and 'Reset' implemented in Step 4 for the CRUD. After many attempts and continuously receiving '404 cannot POST' errors, and not being able to get the Create, Update, and Delete to work, I switched to implement the CRUD routes directly in my Node/Express code using inline SQL queries rather than calling stored procedures. When this also failed, I then decided to try changing the PORT to '5420', and the forms worked immediately.

As far as AI tools, I used AI throughout the project to ask general questions regarding implementation, especially in Part 5 as I implemented a method that was outside of the scope I originally anticipated. I used only ChatGPT. As far as how I used this information, I find that ChatGPT is typically better used to debug my code or give me guidance on how to implement certain code to make it work for my project. I find that whenever it attempts to generate code, it usually has several issues or decides to implement something entirely different.

Project and Database Outlines

Customers: records the details of Customers we do business with. Information on their basic information and contact information.

- customerID: int, auto_increment, unique, not NULL, PK
- firstName: varchar(25), not NULL
- lastName: varchar(25), not NULL
- phone: varchar(10), not NULL
- email: varchar(30), not NULL
- Relationship:
 - 1:M between Customers and Orders. A customer can place one or more orders.

Products: records all product types sold at FurniTech, including whether they are stock or custom items.

- productID: int, auto_increment, unique, not NULL, PK
- productName: varchar(50), not NULL
- productType: varchar(15), not NULL (Custom, Stock)
- unitPrice: float(19,2), not Null
- Relationship:
 - 1:M with ProductLocation. Product can be available at multiple locations
 - 1:M with ProductsOrdered. Product can appear in many orders

Employees: records employees that work at FurniTech

- employeeID: int, auto_increment, unique, not NULL, PK
- firstName: varchar(25), not NULL
- lastName: varchar(25), not NULL
- phone: varchar(10), not NULL
- email: varchar(30), not NULL
- employeeAddress: varchar(50), not NULL
- employeeCity: varchar(25), not NULL
- employeeStateAbbr: varchar(2), not NULL
- locationID: int, not NULL, FK
- ordersFulfilledCount: int, NULL
- ordersActiveCount: int, NULL (Assigned active orders)
- employeeRole: varchar(10), not NULL (Sales, Stocking, Designer, Manager)

- Relationship:
 - M:1 between Employees and Locations. Many employees can belong to a single location
 - 1:M between Employees and Orders. An employee can fulfill multiple orders

Locations: records details of each FurniTech location.

- locationID: int, auto_increment, unique, not NULL, PK
- locationName: varchar(25), not NULL
- locationAddress: varchar(50), not NULL
- locationCity: varchar(25), not NULL
- locationStateAbbr varchar(2), not NULL
- phone: varchar(10), not NULL
- Relationship:
 - 1:M with Employees. Location can employ multiple staff members.
 - 1:M with Orders. Can fulfill multiple orders.
 - 1:M with ProductLocation. Locations can carry multiple products

Orders: records of orders placed by the Customers. Invoices.

- orderID: int, auto_increment, unique, not NULL, PK
- customerID: int, not NULL, FK
- employeeID: int, NULL, FK (Orders entered but not yet assigned to a sales rep)
- locationID: int, not NULL, FK
- address: varchar(100), not NULL
- dateOrdered: date, not NULL
- dateEstimateDelivery, date, not NULL
- dateDelivered, date, NULL
- orderStatus: varchar(10), not NULL (Pending, In-Transit, Delivered, Cancelled)
- subtotal: decimal(8, 2), not NULL
- tax: decimal(5, 2), not NULL
- orderTotal: decimal(8, 2), not NULL
- Relationship:
 - M:1 with Customers, Employees, and Locations. Each order linked to one customer, employee, and location.
 - 1:M with ProductsOrdered. Each order can contain multiple products.

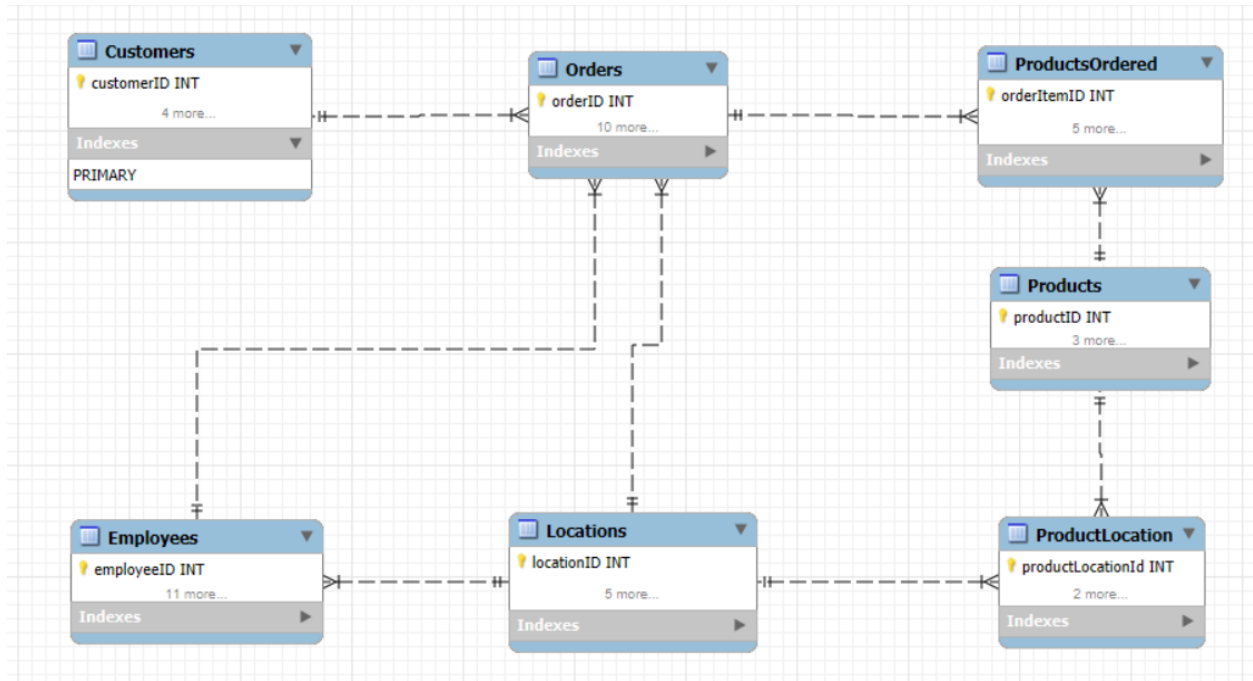
ProductsOrdered: records what products the customer would like to order. Each customer can have an order more than one product, each product will have it's own ProductsOrderedID and will be totaled for orders.

- orderItemID: int, auto_increment, unique, not NULL, PK
- orderID: int, not NULL, FK
- productID: int, not NULL, FK
- quantity: int, not NULL
- productPrice: decimal(8,2), not NULL (Price of individual product)
- totalProductPrice: decimal(8,2), not NULL (Takes account price of product including quantity)
- Relationship:
 - M:1 with Orders. Each ProductOrdered tied to specific order.
 - M:1 with Products. Each ProductOrdered tied to one product in an order.
 - This forms a bridge table for the M:M relationship between Orders and Products. One order can include many products, and one product can appear in many orders.

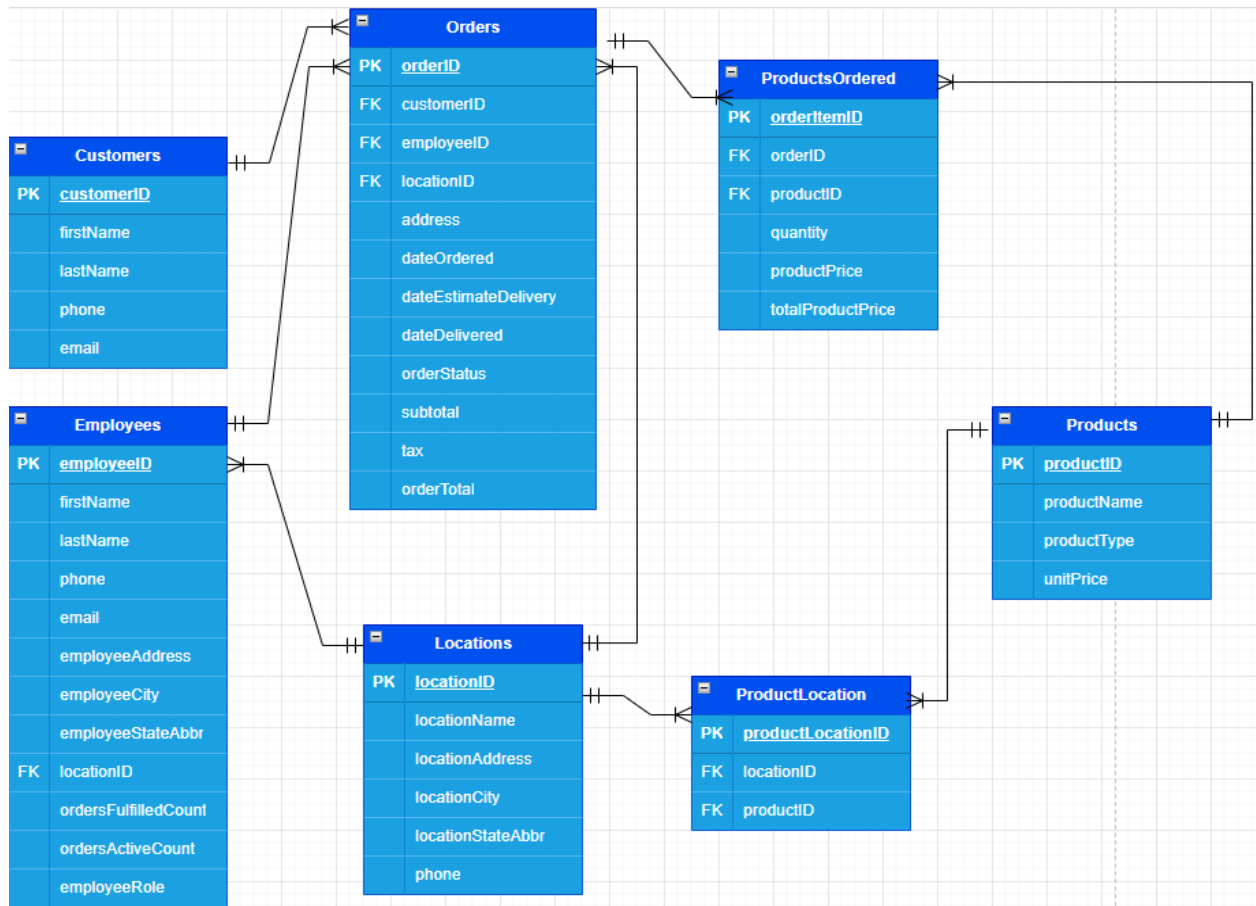
ProductLocation: record of what products are available at each location. This allows us to track per-location inventory and ensure accurate availability by location. Intersection between Products and Locations.

- productLocationID: int, auto_increment, unique, not NULL, PK
- locationID: int, not NULL, FK
- productID: int, not NULL, FK
- Relationship:
 - M:M between Locations and Products, resolved by this table. A product can be stocked at many locations, and each location can carry many products.

Entity-Relationship Diagram



Schema



Sample Data

Customers:

customerID	firstName	lastName	phone	email
1	Leroy	Jenkins	9495551234	leroyjenkins@gmail.com
2	Luke	Skywalker	5858775692	theforceiswithyou@yahoo.com
3	Martha	Stewart	3129855025	chefstewart@gmail.com

Employees:

employeeID	firstName	lastName	phone	email	employeeAddress	employeeCity	employeeStateAbbr	locationID	ordersFulfilledCount	ordersActiveCount	employeeRole
1	Dwayne	Johnson	9497891234	WhatsCooking@mac.com	32 Beverly Park Ter	Beverly Hills	CA	1	5	2	Sales
2	Mark	Zuckerberg	9495550002	bob@furnitech.com	1456 Edgewood Drive	Palo Alto	CA	2	20	3	Manager
3	Billy	Mays	3124204789	OxiClean@gmail.com	100 Elm Street	Naperville	IL	3	50	6	Manager
4	Jerry	Seinfeld	5625550003	charlie@furnitech.com	4601 Austin Blvd	Long Island	NY	4	10	1	Designer

Orders:

orderID	customerID	employeeID	locationID	address	dateOrdered	dateEstimateDelivery	dateDelivered	orderStatus	subtotal	tax	orderTotal
1	1	1	1	100 Elm Street, San Diego, CA 91942	2025-04-20	2025-04-25	NULL	Pending	999.99	90.00	1290.00
2	2	NULL	2	9463 Vineyard Ave	2025-04-16	2025-04-25	2025-04-25	Delivered	999.99	275.98	3475.96

Products:

productID	productName	productType	unitPrice
1	Sofa	Stock	1200.00
2	Custom-Order Desk	Custom	1599.99
3	Office Chair	Stock	299.99

ProductsOrdered:

order_item_id	orderID	productID	quantity	productPrice	totalProductPrice
1	1	1	1	999.99	999.99
2	2	2	2	999.99	999.99

Locations:

locationID	locationName	locationAddress	locationCity	locationStateAbbr	phone
1	Los Angeles	5900 Wilshire Blvd	Los Angeles	CA	3235551234
2	Bay Area	747 Howard St	San Francisco	CA	4155555678
3	Chicago	525 S Racine Ave	Chicago	IL	3125559012
4	New York City	660 5th Ave	New York	NY	2125553456

ProductLocation:


productLocationID	locationID	productID
1	1	1
2	1	3
3	2	2
4	4	2

UI Screen Shots with Informative Titles

Home Page: No CRUD for this page. Just loads home page with navigation.

Home Customers Products Locations Employees Orders Product Details Buy today! Inventory RESET

Furnitech



Furnitech Furniture Solutions

Founded in 2021 by Joshua Griep and Sean Bleyl following the downfall of WeWork, we are a rapidly growing furniture retailer, and we want **YOUR** business!

We already provide cheap, tacky, and slightly off-color home and office furnishings in Chicago, LA, San Francisco, and New York City.

But with your help, we could do so much more.

We're talking Baton Rouge. We're talking Quarters Lane. Call us crazy, but we even have dreams of making it big in Omaha...

And with your continued support, we just might get there.

Customers: CREATE/READ/UPDATE/DELETE

Home Customers Products Locations Employees Orders Product Details Buy today! Inventory RESET

Customers

id	first	last	phone	email	
1	Leroy	Jenkins	9495551234	leroyjenkins@gmail.com	Delete
2	Luke	Skywalker	5858775692	theforceiswithyou@yahoo.com	Delete
3	Martha	Stewart	3129855025	chefstewart@gmail.com	Delete

New Customer

First Name: Last Name: Phone: Email Address: [Become a consumer today!](#)

Update a Customer

Customer: First Name: Last Name: Phone: Email: [Update](#)

Products: CREATE/READ/UPDATE/DELETE

[Home](#) [Customers](#) [Products](#) [Locations](#) [Employees](#) [Orders](#) [Product Details](#) [Buy today!](#) [Inventory](#) [RESET](#)

Products

Name	Type	Price	
Sofa	Stock	1200	Delete
Custom-Order Desk	Custom	1599.99	Delete
Office Chair	Stock	299.99	Delete

New Product

Name: Type: Price: [Add Product](#)

Update a Product

Product: Name: Type: Price: [Update](#)

Locations: CREATE/READ/UPDATE/DELETE

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Locations

id	branch	address	city	state	phone		
1	Los Angeles	5900 Wilshire Blvd	Los Angeles	CA	3235551234	View Inventory	Delete
2	Bay Area	747 Howard St	San Francisco	CA	4155555678	View Inventory	Delete
3	Chicago	525 S Racine Ave	Chicago	IL	3125559012	View Inventory	Delete
4	New York City	660 5th Ave	New York	NY	2125553456	View Inventory	Delete

New Site

Branch Name: Address: City: State: Phone: [Add location](#)

Update a Location

Select a Site: Address: City: State: Phone: [Update the site!](#)

Employees: CREATE/READ/UPDATE/DELETE

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Employees

id	first	last	role	active	phone	branch	
1	Dwayne	Johnson	Sales	2	9497891234	Los Angeles	Delete
2	Mark	Zuckerberg	Manager	3	9495550002	Bay Area	Delete
3	Billy	Mays	Manager	6	3124204789	Chicago	Delete
4	Jerry	Seinfeld	Designer	1	5625550003	New York City	Delete

New Employee

First: Last: Role: Active: Phone: Branch: [Add](#)

Update Employee

Who? Role: Active: Phone: Branch: [Update](#)

Orders: READ/UPDATE/DELETE. Can also access “View Order” to see the Order Details page narrowed down to that specific order. M:1 Customers, Employees, and Locations. 1:M ProductsOrdered

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Orders

Order Id	First Name	Last Name	Helped by	Estimated delivery	Order Status	Subtotal	Tax	Total		
1	Leroy	Jenkins	Mays	04/25/25	Pending	1200.00	120.00	1320.00	View Order	Delete
2	Luke	Skywalker		04/25/25	Delivered	3199.98	320.00	3519.98	View Order	Delete

Modify an order

Order to Update: New Customer: New Employee: New Estimate: New Status:

[Update Order](#)

Buy Today! (CREATE for Orders): M:1 with Customers, Employees, and Locations. 1:M ProductsOrdered

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Place an Order Today!

Which of our loyal customers is making this sale?

Which employee helped you the most?

What are you buying today?

Quantity:

[Let's make a deal!](#)

Order Details (ProductsOrdered): READ/UPDATE/DELETE. M:1 Orders. M:1 Products. M:M Orders and Products.

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Product Details

id	customerFirst	customerLast	estimate	status	total	product	quantity	unitPrice	lineTotal	Actions
1	Leroy	Jenkins	04/25/25	Pending	1320.00	Sofa	1	1200.00	1200.00	Delete
2	Luke	Skywalker	04/25/25	Delivered	3519.98	Custom-Order Desk	2	1599.99	3199.98	Delete

[Place a New Order](#)

Update Order Detail

Line Item: New Quantity: New Unit Price:

[Update](#)

Inventory: READ/DELETE. M:M between Locations and Products.

Home

Customers

Products

Locations

Employees

Orders

Product Details

Buy today!

Inventory

RESET

Product Availability by store

Store	Product	Delete
Chicago	Sofa	<div>Delete</div>
Bay Area	Office Chair	<div>Delete</div>
Chicago	Office Chair	<div>Delete</div>
Los Angeles	Office Chair	<div>Delete</div>
New York City	Sofa	<div>Delete</div>
Bay Area	Sofa	<div>Delete</div>

Reset (Not a UI page visible, redirects to home page): Truncate tables and insert values into tables from original DDL.sql

Home

Customers

Products

Locations

Employees

Orders

Product Details

Buy today!

Inventory

RESET

Product Availability by store

Store	Product	Delete
Chicago	Sofa	<div>Delete</div>
Bay Area	Office Chair	<div>Delete</div>
Chicago	Office Chair	<div>Delete</div>
Los Angeles	Office Chair	<div>Delete</div>
New York City	Sofa	<div>Delete</div>
Bay Area	Sofa	<div>Delete</div>

Citations

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