

Paula's Pizza Palace

Nick Herman

Brian Walsh

URL: <http://flip2.engr.oregonstate.edu:42068/>

Actions based on feedback:

- Add a 'toppings' entity to serve as a category table. This entity can track quantities of toppings and can allow for inventory reports and prompt the pizza palace to order more when required.
- Change the data type for the order timestamp to 'datetime' to improve searchability.
- Added a select last insert ID to Orders and Pizzas inserts that can then be passed to the OrderItems and PizzaToppings insert queries automatically
- Added delete for Pizzas. This will cascade correctly without causing anomalies in PizzaToppings
- Changed update query for Orders to allow driver to be updated. A driver is optional and can be set NULL on creation, but it can now be updated to NULL as well.
- Changed the date field in Orders to automatically add a time stamp instead of needing to enter a date.
- Added an Order Details page to display the M:N OrderItems table and linked directly to this page using details button on the order table.
- Added 'int' datatype to the orderItems.quantity attribute.
- Create an intersection table PizzaToppings between Pizza and Toppings to properly normalize. This removes the duplicate 'topping1, topping2, ...' from the pizza table to get it to 1NF.
- Add an auto-increment primary key to OrderItems to bring it to 2NF.
- Add not null constraint to a number of attributes to prevent creating entities without necessary data.
- Changed on cascade property for foreign key toppingID in Pizzas table to restrict to prevent toppings from being deleted if they are used by a pizza.
- Updated SQL code to automatically time stamp the order when one is added to the database.

Plan:

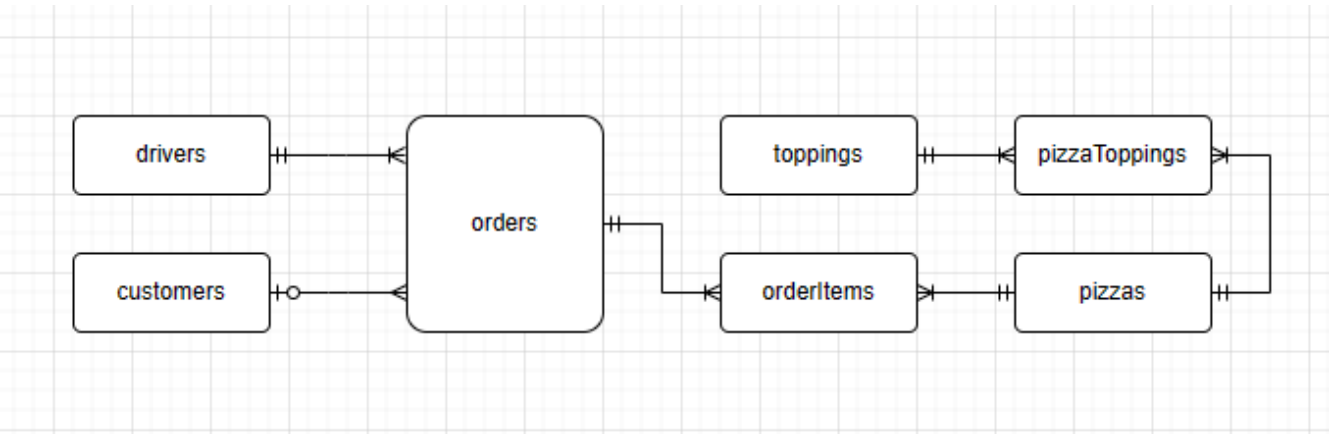
Paula's Pizza Palace needs a database to track their sales, their pizzas, and the specifics of each order. They want to track who ordered the pizza, who delivered it, what kind of pizza they ordered, and the total sale price. Customers should be allowed to add themselves to the database without a purchase to receive updates on sales or upcoming specialty pies. The business started slow but is now churning out dozens of pizzas per day. As a small and local business they only make a profit of around \$1000 a week, but it's enough to pay the bills.

We will need the following entities to enable this:

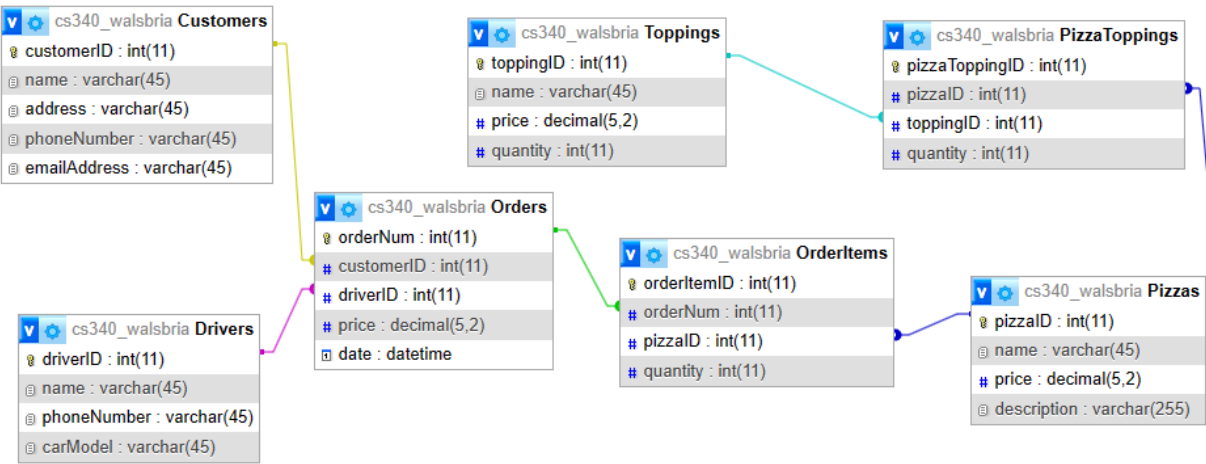
- Customers: This will track the people who order from the restaurant or who sign up for an account via the website even if they don't place an order. Customers will have a 1:N relationship with Orders with CustomerID used as a foreign key. This relationship is optional as customers can sign up for an account without needing to order a pizza.
 - customerID, int, auto_increment, unique, not NULL, PK
 - name, varchar, not NULL
 - address, varchar
 - phoneNumber, varchar
 - emailAddress, varchar
- Drivers: The people who deliver the pizzas. It captures some detail about the drivers and the car they use to deliver the pizzas. Drivers will have a 1:N relationship with orders. Each order will have only one driver, but drivers can deliver many orders. 'DriverID' will be used as a foreign key in 'Orders'.
 - driverID, int, auto_increment, unique, not NULL, PK
 - name, varchar, not NULL
 - phoneNumber, varchar, not NULL
 - carModel, varchar, not NULL
- Orders: A record of all the orders. This entity will capture the pizza(s) on the order (multiple are allowed), the customer who ordered it, and the driver who delivered it. This entity has a M:N relationship with pizzas.
 - orderNum, int, auto_increment, unique, not NULL, PK
 - customerID, int, not NULL, FK
 - driverID, int, FK
 - price, decimal, not NULL
 - date, varchar, not NULL
- OrderItems. This entity will hold details of a specific order and acts to resolve M:N relationships between orders, and pizzas. It will use driverID and pizzaID as foreign keys and has a 1:N relationship with both orders and pizzas.
 - orderItemID, int, auto_increment, unique, not NULL, PK
 - orderNum, int, not NULL, FK
 - pizzaID, int, not NULL, FK
 - quantity, int, not NULL

- Pizzas: The pizzas. This entity will capture the name of each pizza, a price, and description, as well as the toppings used to make the pizza. This entity will have a M:N relationship with orders as well as an M:N relationship with toppings.
 - pizzaID, int, auto_increment, unique, not NULL, PK
 - name, varchar, not NULL
 - price, decimal, not NULL
 - description, varchar
- Toppings: The available toppings. This entity serves as a category table for 'pizzas' and will track the inventory of each topping. It has a M:N relationship with 'Pizzas'.
 - toppingID, int, auto_increment, unique, not NULL, PK
 - name, varchar, not NULL
 - price: decimal, not NULL
 - quantity, int, not NULL
- PizzaToppings: This entity will hold details of which toppings to use for a specific pizza and acts to resolve M:N relationships between toppings, and pizzas. It will use toppingID and pizzaID as foreign keys and has a 1:N relationship with both toppings and pizzas.
 - pizzaToppingID, int, auto_increment, unique, not NULL, PK
 - pizzaID, int, not NULL, FK
 - toppingID, int, not NULL, FK
 - quantity, int, not NULL

ERD:





Schema:













Example Data:














- customers:

 ▼	customerID	name	address	phoneNumber	emailAddress
<input type="checkbox"/>  Edit  Copy  Delete	1	Jeff	123 Street Ave.	111-2222-3333	name@email.com
<input type="checkbox"/>  Edit  Copy  Delete	2	Anthony	8874 Circle Dr.	444-5555-6666	example@host.net
<input type="checkbox"/>  Edit  Copy  Delete	3	Penelope	1337 Avenue Blvd.	777-8888-9999	myemail@thisisatest.com











- drivers:

 ▼	driverID	name	phoneNumber	carModel
<input type="checkbox"/>  Edit  Copy  Delete	1	Phil	333-2222-1111	Acura
<input type="checkbox"/>  Edit  Copy  Delete	2	Amelia	666-5555-4444	Ram
<input type="checkbox"/>  Edit  Copy  Delete	3	Ed	999-8888-7777	Ranger

- orderItems:

 ▼	orderItemID	orderNum	pizzaID	quantity
<input type="checkbox"/>  Edit  Copy  Delete	1	1	1	1
<input type="checkbox"/>  Edit  Copy  Delete	2	2	1	3
<input type="checkbox"/>  Edit  Copy  Delete	3	3	2	1
<input type="checkbox"/>  Edit  Copy  Delete	4	3	3	1

- orders:

 ▼	orderNum	customerID	driverID	price	date
<input type="checkbox"/>  Edit  Copy  Delete	1	2	1	10.23	2023-04-26 00:00:00
<input type="checkbox"/>  Edit  Copy  Delete	2	2	3	36.83	2021-08-13 00:00:00
<input type="checkbox"/>  Edit  Copy  Delete	3	1	1	26.99	2022-11-08 00:00:00











- pizzas:

 ▼	pizzaID	name	price	description
<input type="checkbox"/>  Edit  Copy  Delete	1	Pepperoni Extreme	9.99	As much pepperoni as a pizza can hold
<input type="checkbox"/>  Edit  Copy  Delete	2	Mushroom Madness	13.22	A delicious circle of mushroom-y goodness
<input type="checkbox"/>  Edit  Copy  Delete	3	Meaty Mayhem	8.45	More meats than Arby's

- pizzaToppings:

		pizzaToppingID	pizzaID	toppingID	quantity
<input type="checkbox"/>	 Edit  Copy  Delete	1	1	1	3
<input type="checkbox"/>	 Edit  Copy  Delete	2	2	2	2
<input type="checkbox"/>	 Edit  Copy  Delete	3	3	1	1
<input type="checkbox"/>	 Edit  Copy  Delete	4	3	3	1

- toppings:

		toppingID	name	price	quantity
<input type="checkbox"/>	 Edit  Copy  Delete	1	Pepperoni	0.50	9
<input type="checkbox"/>	 Edit  Copy  Delete	2	Mushroom	1.14	4
<input type="checkbox"/>	 Edit  Copy  Delete	3	Sausage	0.37	6

UI Screen Captures:

- Read/Delete Customers

Customers

[[Customers](#) | [Drivers](#) | [Orders](#) | [Order Details](#) | [Pizzas](#) | [Toppings](#)]

ID	Name	Address	Phone Number	Email		
1	Jeff	123 Street Ave.	111-2222-3333	name@email.com	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
2	Anthony	8874 Circle Dr.	444-5555-6666	example@host.net	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
3	Penelope	1337 Avenue Blvd.	777-8888-9999	myemail@thisisatest.com	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

- Create Customer:

Add Customer

Name:	<input type="text" value="Jane"/>	Address:	<input type="text" value="123 Street Dr"/>	Phone Number:	<input type="text" value="1234567890"/>	Email:	<input type="text" value="email@dom.tld"/>
<input type="button" value="Add Customer"/> <input type="button" value="Cancel"/>							

- Update Customer:

Editing Customer:

ID	Name	Address	Phone Number	Email
1	Jeff	123 Street Ave.	111-2222-3333	name@email.com

Edit Customer

Name:	<input type="text" value="Jeff"/>	Address:	<input type="text" value="123 Street Ave."/>	Phone Number:	<input type="text" value="111-2222-3333"/>	Email:	<input type="text" value="name@email.com"/>
<input type="button" value="Edit Customer"/> <input type="button" value="cancel"/>							

- Read/Delete Drivers

Drivers

[[Customers](#) | [Drivers](#) | [Orders](#) | [Order Details](#) | [Pizzas](#) | [Toppings](#)]

ID	Name	Phone Number	Car Model		
1	Phil	333-2222-1111	Acura	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
2	Amelia	666-5555-4444	Ram	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
3	Ed	999-8888-7777	Ranger	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

- Create Driver

[[Customers](#) | [Drivers](#) | [Orders](#) | [Order Details](#) | [Pizzas](#) | [Toppings](#)]

Add Driver

Name:	<input type="text" value="Jane"/>	Phone Number:	<input type="text" value="1234567890"/>	Car Model:	<input type="text" value="Ford Ranger"/>
<input type="button" value="Add Driver"/> <input type="button" value="Cancel"/>					

- Update Driver

Editing Driver:

ID	Name	Phone Number	Car Model
1	Phil	333-2222-1111	Acura

Edit Driver

Name:	<input type="text" value="Phil"/>	Phone Number:	<input type="text" value="333-2222-1111"/>	Car Model:	<input type="text" value="Acura"/>
<input type="button" value="Edit Driver"/> <input type="button" value="cancel"/>					

- Read/Delete Orders. Deleting an order will also delete associated items in orderItems interface table. **This is an M:N Delete.**

[[Customers](#) | [Drivers](#) | [Orders](#) | [Order Details](#) | [Pizzas](#) | [Toppings](#)]

Order Number	Customer ID	Driver ID	Price	Time		
1	2	1	10.23	2023-04-26 00:00:00	Delete	Details
2	2	3	36.83	2021-08-13 00:00:00	Delete	Details
3	1	1	26.99	2022-11-08 00:00:00	Delete	Details

Create New Order

- Create order. Creating an order also creates entries in the orderItems table. **DriverID FK is nullable for pick up orders.**

[[Customers](#) | [Drivers](#) | [Orders](#) | [Order Details](#) | [Pizzas](#) | [Toppings](#)]

Order up to 3 different pizzas.

Pizza 1:	Select Pizza ▼	Quantity:	<input type="text"/>
Pizza 2:	Select Pizza ▼	Quantity:	<input type="text"/>
Pizza 3:	Select Pizza ▼	Quantity:	<input type="text"/>
Ordered By:	Select Customer ▼		
Assigned Driver:	(Select Pickup For None)	Select Driver ▼	

Submit Order

Cancel

- Read orderItems. If accessed via 'Details' button on Orders, this only displays the details of that order, otherwise it displays all order details.

[[Customers](#) | [Drivers](#) | [Orders](#) | [Order Details](#) | [Pizzas](#) | [Toppings](#)]

Order Item ID	Order Number	Pizza ID	Quantity
1	1	1	1
2	2	1	3
3	3	2	1
4	3	3	1

- Read/Delete Pizzas

[[Customers](#) | [Drivers](#) | [Orders](#) | [Order Details](#) | [Pizzas](#) | [Toppings](#)]

ID	Name	Price	Description	Toppings		
1	Pepperoni Extreme	9.99	As much pepperoni as a pizza can hold	Pepperoni	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
2	Mushroom Madness	13.22	A delicious circle of mushroom-y goodness	Mushroom	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
3	Meaty Mayhem	8.45	More meats than Arby's	Pepperoni,Sausage	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

- Create/Update Pizza. Pizzas are created by selecting a topping and a topping quantity. Pizza toppings can be updated once added to the pizza. **This is an M:N Update.**

Add Pizza:

Name: Price: Description:

Edit Pizza Toppings:

Name	Quantity		
<input type="text" value="Pepperoni"/>	<input type="text" value="1"/>	<input type="button" value="Save"/>	<input type="button" value="Delete"/>

Add Pizza Topping:

- Read/Delete toppings:

[[Customers](#) | [Drivers](#) | [Orders](#) | [Order Details](#) | [Pizzas](#) | [Toppings](#)]

ID	Name	Price	Quantity		
1	Pepperoni	0.50	9	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
2	Mushroom	1.14	4	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>
3	Sausage	0.37	6	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

- Create topping:

[[Customers](#) | [Drivers](#) | [Orders](#) | [Order Details](#) | [Pizzas](#) | [Toppings](#)]

Add topping

Name:	<input type="text" value="Pepperoni"/>	Price:	<input type="text" value="1.25"/>	Quantity:	<input type="text" value="15"/>
-------	--	--------	-----------------------------------	-----------	---------------------------------

<input type="button" value="Add topping"/>	<input type="button" value="Cancel"/>
--	---------------------------------------

- Update topping:

Editing Topping:

ID	Name	Price	Quantity
2	Mushroom	1.14	4

Edit Topping

Name:	<input type="text" value="Mushroom"/>	Price:	<input type="text" value="1.14"/>	Quantity:	<input type="text" value="4"/>
-------	---------------------------------------	--------	-----------------------------------	-----------	--------------------------------

<input type="button" value="Edit Topping"/>	<input type="button" value="cancel"/>
---	---------------------------------------