

Project Step 6 Final

HTML URL: <http://classwork.engr.oregonstate.edu:3537/>

a) Summary of changes made throughout the term:

UI and Usability Enhancements:

- **Feedback:** Suggestions included improving table readability with padding and borders, making descriptions clearer, and using dropdown lists to avoid invalid inputs.
- **Actions:** Added padding and borders to tables, clarified form descriptions, and implemented dropdown lists for order IDs, product names, customers, and suppliers.

Form and Data Validation:

- **Feedback:** Recommendations to limit negative values in input fields and ensure required fields are marked.
- **Actions:** Restricted negative values and marked required fields in forms.

Consistency in Naming and Layout:

- **Feedback:** Suggestions to make column names consistent and improve table layout for better readability.
- **Actions:** Renamed columns for consistency, added spacing, and improved table layout.

Enhanced Entity Representation:

- **Feedback:** Including customer names in orders and product names in OrderProductDetails and ProductSuppliers for better clarity.
- **Actions:** Updated tables to include names instead of IDs, improving readability.

Entity and Attribute Descriptions:

- **Feedback:** Need for detailed entity descriptions and explanations.
- **Actions:** Provided detailed descriptions for each entity and their purposes.

Other changes:

- Made the customerID field of Orders nullable, as specified by the project requirements to have at least one nullable foreign key field

b) Project Outline and Database Outline:

Project Title: Benny's Bakery Management System

Overview:

Benny's Bakery is a small bakery in Corvallis that processes a significant amount of sales annually. The bakery averages 20,000 sales per year with an average revenue of \$300k. Benny's Bakery wants to increase its revenue and sales with an organized database-driven website that efficiently manages customer orders, inventory, and sales data. Our database will assist in recording sales, managing inventory levels, and tracking sales performance.

Database Outline (written):

- **Customers**

- Description: The customer entity records information about customers who place orders with the bakery. The purpose of this is to create customer relationship management and track orders.
- Attributes:
 - customerID INT NOT NULL AUTO_INCREMENT, PK
 - firstName VARCHAR(45)
 - lastName VARCHAR(45)
 - email VARCHAR(255)
 - phone VARCHAR(45)
 - address VARCHAR(255)
- Relationships:
 - Customers and Orders: 1:M relationship. Each customer can place multiple orders but each order is associated with only one customer. customerID is a foreign key in orders.

- **Products**

- Description: The products entity stores detailed information about the bakery's products in order to track inventory and sales.
- Attributes:
 - productID INT NOT NULL AUTO_INCREMENT, PK
 - productName VARCHAR(45)
 - description TEXT
 - price DECIMAL(18,2)
 - inventory INT

- Relationships:
 - Products and Suppliers: M:N relationship. Each product can be supplied by multiple suppliers and each supplier can supply multiple products. ProductSuppliers is the intersection table that facilitates this relationship.
 - Products and Orders: M:N relationship. Each product can be in multiple orders and each order can consist of multiple products. OrderProductDetails is the intersection table that facilitates this relationship.
- **Orders**
 - Description: The orders entity records details about orders including the customer and date.
 - Attributes:
 - orderID INT NOT NULL AUTO_INCREMENT, PK
 - customerID INT, FK, ON DELETE CASCADE
 - orderDate DATETIME
 - Relationships:
 - Orders and Customers: M:1 relationship. Each order is associated with one customer, but one customer can place multiple orders. customerID is a foreign key in orders.
 - Orders and Products: M:N relationship. Each order can consist of multiple products and each product can be in multiple orders. OrderProductDetails is the intersection table that facilitates this relationship.
- **OrderProductDetails**
 - Description: The order-product details entity serves as an intersection table to handle the M:N relationship between products and orders.
 - Attributes:
 - orderID INT NOT NULL, FK, PK, ON DELETE CASCADE
 - productID INT, FK, PK, ON DELETE CASCADE
 - quantity INT NOT NULL
 - Relationships:
 - orderProductDetails and Orders: M:1 relationship. Order-product details are associated with only one order but each order can have multiple order-product details (representing individual items in the order). orderID is a foreign key in OrderProductDetails.
 - OrderProductDetails and Products: M:1 relationship. Each order detail can only represent one product, but each product can appear

in multiple order details. productID is a foreign key in OrderProductDetails.

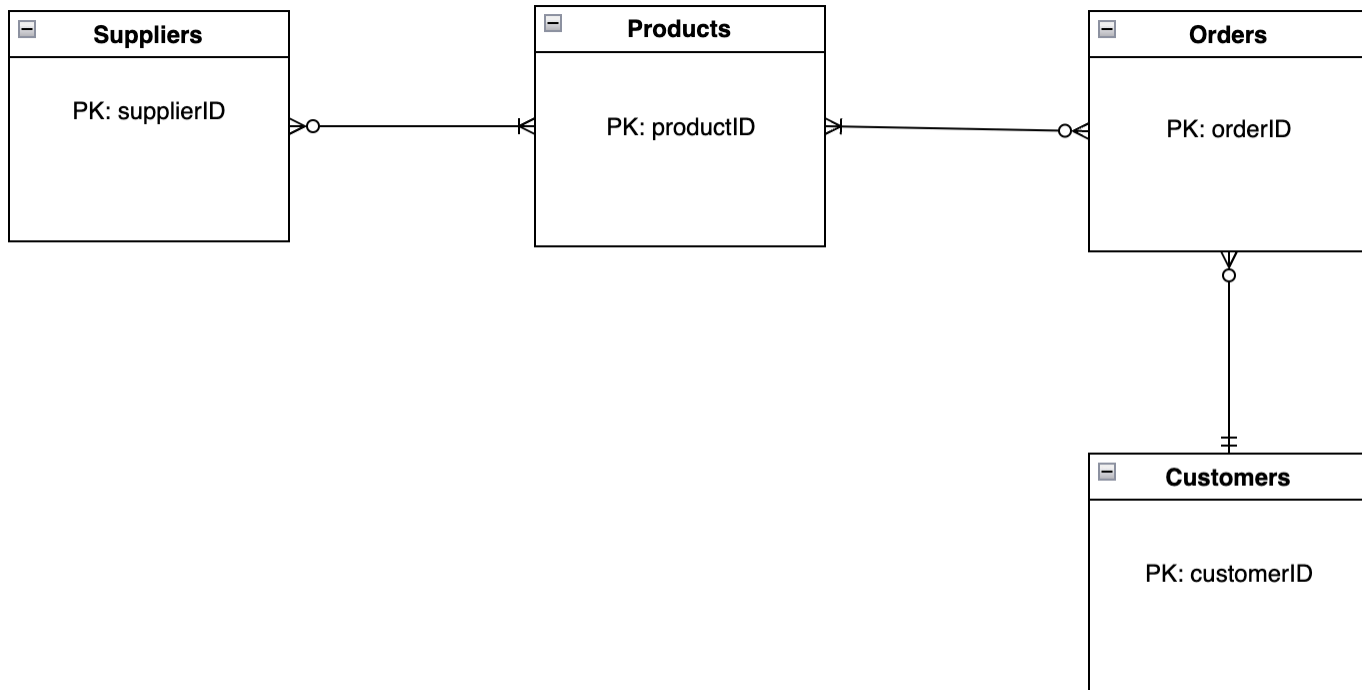
- **Suppliers**

- Description: The supplier's entity stores information about the bakery's suppliers that provide the bakery with its products. This facilitates supplier relationship management.
- Attributes:
 - supplierID INT NOT NULL AUTO_INCREMENT, PK
 - supplierName VARCHAR(45)
 - email VARCHAR(255)
 - phone VARCHAR(45)
 - address VARCHAR(255)
- Relationships:
 - Suppliers and Products: M:N relationship. Each supplier can supply multiple products and each product can be supplied by multiple suppliers. ProductSuppliers is the intersection table that facilitates this relationship.

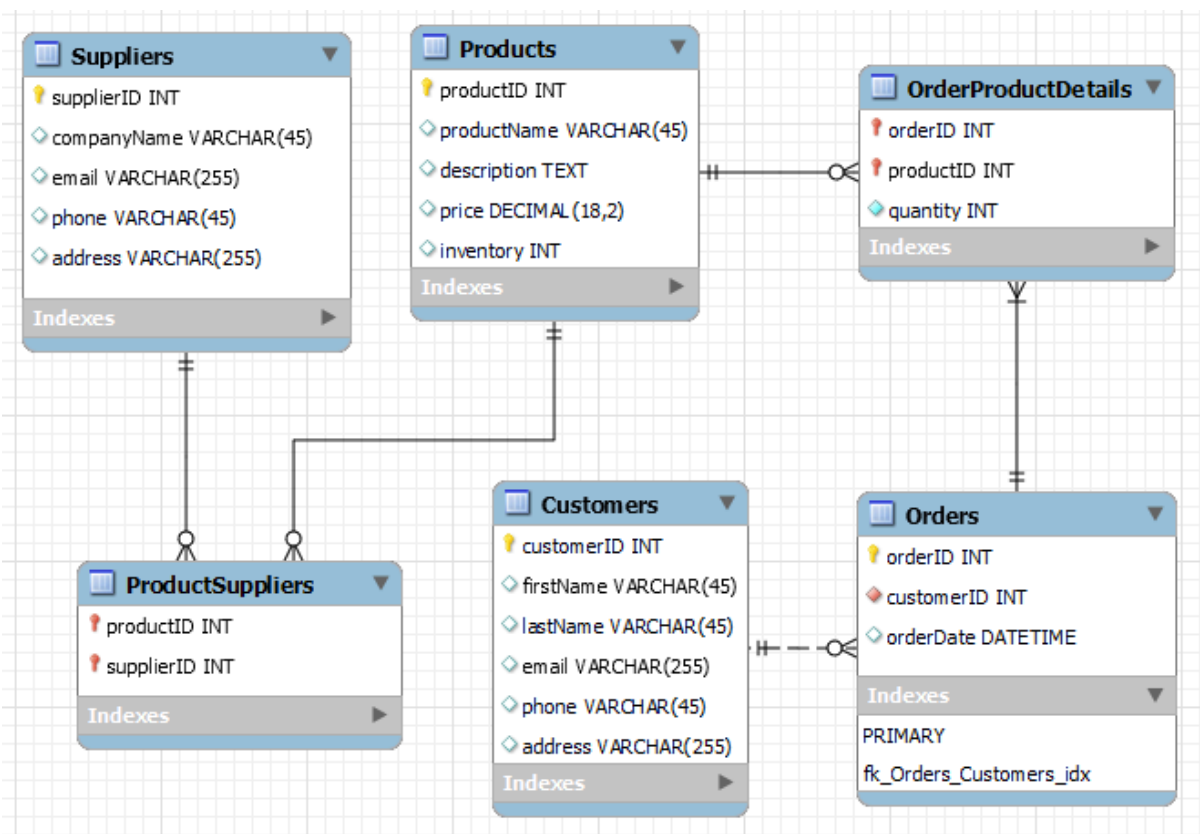
- **ProductSuppliers**

- Description: The product suppliers entity associates products with their respective suppliers. It serves as an intersection table between products and suppliers.
- Attributes
 - productID INT NOT NULL, FK, PK, ON DELETE CASCADE
 - supplierID INT NOT NULL, FK, PK, ON DELETE CASCADE
- Relationships:
 - ProductSuppliers and Suppliers: M:1 relationship. Each entry corresponds to only one supplier, but each supplier can have multiple entries in the ProductSuppliers table. supplierID is a foreign key inside of ProductSuppliers.
 - ProductSuppliers and Products: M:1 relationship. Each entry corresponds to only one product, but each product can have multiple entries. productID is a foreign key inside of ProductSuppliers.

c) Entity-Relationship Diagram:



d) Schema



e) Sample Data:

	Customers				
customerID	1	2	3		
firstName	Alice	Bob	Charlotte		
lastName	Smith	Wilhelm	Johnson		
email	asmith@example.com	bwilhelm@example.com	cjohnson@example.com		
phone	555-1234	555-8364	555-7532		
address	123 Van Buren St	300 Lincoln St	999 Washington St		
	Products				
productID	1	2	3		
productName	Cake	Cupcake	Croissant		
description	With icing	Chocolate and vanilla	Brushed with butter		
price	18.5	5	3.25		
inventory	5	24	12		
	Orders				
orderID	1	2	3		
customerID	2	1	3		
orderDate	2024-01-13	2024-03-21	2024-04-03		
	OrderProductDetails				
orderID	1	1	2	3	3
productID	3	2	1	2	3

quantity	2	1	1	12	6
	Suppliers				
supplierID	1	2	3		
companyName	French Food Ltd	Mini Cakes Company	Cake Corporation		
email	ffltd@example.com	mcc@example.com	ccorp@example.com		
phone	555-6373	555-2237	555-9273		
address	400 Paris St	600 Little St	432 Dessert St		
	ProductSuppliers				
productID	3	2	2	1	
supplierID	1	2	3	3	

f) Screenshots

Home page

Benny's Bakery

[\[Home | Customers | Orders | Products | Suppliers | OrderProductDetails | ProductSuppliers \]](#)

Home

Benny's Bakery is a small bakery in Corvallis that processes a significant amount of sales annually. The bakery averages 20,000 sales per year with an average revenue of \$300k. Benny's Bakery wants to increase its revenue and sales with an organized database-driven website that efficiently manages customer orders, inventory, and sales data. Our database will assist in recording sales, managing inventory levels, and tracking sales performance.

CREATE NEW/READ/UPDATE/DELETE Customers

Benny's Bakery

[\[Home | Customers | Orders | Products | Suppliers | OrderProductDetails | ProductSuppliers \]](#)

Customers

Records information about customers who place orders with the bakery. The purpose of this is to create customer relationship management and track orders.

New	ID	First Name	Last Name	Email	Phone	Address	
Edit	1	Alice	Smith	asmith@example.com	555-1234	123 Van Buren St	Delete
Edit	2	Bob	Wilhelm	bwilhelm@example.com	555-8364	300 Lincoln St	Delete
Edit	3	Charlotte	Johnson	cjohnson@example.com	555-7532	999 Washington St	Delete

CREATE NEW/READ/UPDATE/DELETE/SEARCH Orders

*Customer can be nullable

Benny's Bakery

[\[Home | Customers | Orders | Products | Suppliers | OrderProductDetails | ProductSuppliers \]](#)

Orders

The orders entity records details about orders including the customer and date.

New	ID	First Name	Last Name	Order Date	Total	
Edit	4			June 05 2024	5	Delete
Edit	3	Charlotte	Johnson	April 03 2024	79.5	Delete
Edit	2	Alice	Smith	March 21 2024	18.5	Delete
Edit	1	Bob	Wilhelm	January 13 2024	11.5	Delete

CREATE NEW/READ/UPDATE/DELETE Products

Benny's Bakery

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Products

The products entity stores detailed information about the bakery's products in order to track inventory and sales.

New	ID	Product Name	Description	Price	Inventory	
Edit	1	Cake	With icing	18.5	5	Delete
Edit	2	Cupcake	Chocolate and vanilla	5	24	Delete
Edit	3	Croissant	Brushed with butter	3.25	12	Delete

CREATE NEW/READ/UPDATE/DELETE Suppliers

Benny's Bakery

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Suppliers

The supplier's entity stores information about the bakery's suppliers that provide the bakery with its products. This facilitates supplier relationship management.

New	ID	Supplier Name	Email	Phone	Address	
Edit	1	French Food Ltd	ffltd@example.com	555-6373	400 Paris St	Delete
Edit	2	Mini Cakes Company	mcc@example.com	555-2237	600 Little St	Delete
Edit	3	Cake Corporation	ccorp@example.com	555-9273	432 Dessert St	Delete

CREATE NEW/READ/UPDATE/DELETE/SEARCH M:N OrderProductDetails

*Customer can be nullable

Benny's Bakery

[\[Home | Customers | Orders | Products | Suppliers | OrderProductDetails | ProductSuppliers \]](#)

OrderProductDetails

Order ID	Order Date	First Name	Last Name	Product Name	Per Unit	quantity	total	
1	January 13 2024	Bob	Wilhelm	Cupcake	5	1	5	Delete
1	January 13 2024	Bob	Wilhelm	Croissant	3.25	2	6.5	Delete
2	March 21 2024	Alice	Smith	Cake	18.5	1	18.5	Delete
3	April 03 2024	Charlotte	Johnson	Croissant	3.25	6	19.5	Delete
3	April 03 2024	Charlotte	Johnson	Cupcake	5	12	60	Delete
4	June 05 2024			Cupcake	5	1	5	Delete

Adding Data with form

To add a new order product detail, please enter their information below and click 'Submit'!

Order ID: Quantity:

Update quantity of specific entry

Order ID: New quantity:

CREATE NEW/READ/DELETE/SEARCH M:N ProductSuppliers

Benny's Bakery

[\[Home | Customers | Orders | Products | Suppliers | OrderProductDetails | ProductSuppliers \]](#)

ProductSuppliers

The product suppliers entity associates products with their respective suppliers. It serves as an intersection table between products and suppliers.

New	ID	Product Name	Supplier Name	
	1	Cake	Cake Corporation	Delete
	2	Cupcake	Mini Cakes Company	Delete
	3	Cupcake	Cake Corporation	Delete
	4	Croissant	French Food Ltd	Delete