Laura Sendlein and Chelsey Beck
Coast to Coast Gift Baskets

http://flip1.engr.oregonstate.edu:7715/

Project Outline and Database Outline, ERD and Schema Updated Version

Overview

An ecommerce website that sells gift baskets purchases its products wholesale from a variety of different vendors, displays these products on its website, and then sells the products to a variety of different customers. These purchases, products, vendors, and customers are all entities. The company makes about 10 million dollars a year in sales and currently has 25,000 customers. The average sale to each customer brings in $120 in gross revenue. Each sale is also its own entity. The problem that this company faces is keeping track of its sales, purchases, and refunds as they relate to different products, vendors, and customers. Due to the large volume of business that the company does, it needs a robust database that track the relevant data. Each product can have only one vendor, but vendors could have many products displayed on the website. Customers could purchase many products and the products can be purchased by many customers, but the relationship between a customer and one specific sale is a 1:1 relationship. This ecommerce company is interested in knowing where its profits are coming from, for the purpose of providing more products that people are interested in and dropping less popular products. It's interested in keeping track of customer purchases, for the purpose of targeted advertisements. The company wants to keep track of every individual sale in the case of refunds or items that are improperly delivered. In order to operate more efficiently and professionally, this company is interested in how all these components of their business relate to each other. Ecommerce is seeing a surge in popularity following the COVID-19 pandemic and this company expects their sales to grow in coming years. They want a database that will continue to accommodate these needs as the business scales.

Outline

Customers: records the details of customers the company does business with
Implemented by Chelsey

- customerID: int, auto_increment, unique, not NULL, PK
- fname: varchar, not NULL
- lname: varchar, not NULL
- email: varchar, not NULL
- phoneNumber: varchar
- streetAddress: varchar, not NULL
- city: varchar, not NULL
- state: varchar, not NULL
- countryCode: int, not NULL
- acceptingEmails: boolean
- **Relationship**: 1:M relationship between Customers and Sales, 1:M relationship between Customers and Refunds

Vendors: records the details of vendors the company does business with and purchases inventory from
Implemented by Laura

- vendorID: int, auto_increment, unique, not NULL, PK
- name: varchar, not NULL
- email: varchar, not NULL
- description: varchar
- **Relationship**: 1:M relationship between Vendors and Products, 1:M relationship with Purchases

Purchases: records the purchases made using the company's capital by the product buyers of the gift basket company to acquire the inventory from vendors to be sold to customers via sales.
Implemented by Laura

- purchaseID: int, auto_increment, unique, not NULL, PK
- vid: int, not NULL, FOREIGN KEY, REFERENCES vendorID
- purchaseDate: date, not NULL
- totalPaid: decimal
- **Relationships**: M:M relationship with Products (relationship represented by Product_Purchases composite entity), M:1 relationship with Vendors (implemented by vid foreign key)

Product_Purchases: represents one product that is present in one purchase
Implemented by Laura

- pid: int, not NULL, PK*, REFERENCES productID
- purid: int, not NULL, PK*, REFERENCES purchaseID
- quantity: int, not NULL
- **Relationships**: M:1 relationship with Purchases, M:1 relationship with Products; composite entity to model Purchases/Products M:M relationship

*concatenated primary key

Products: records the details of the individual products from a particular vendor the company displays on their website
Jointly implemented by both group members

- productID: int, auto_increment, unique, not NULL, PK
- vid: int, not NULL, FOREIGN KEY, REFERENCES vendorID
- catid: int, FOREIGN KEY, REFERENCES categoryID
- name: varchar, not NULL
- companyCost: decimal, not NULL
- salePrice: decimal, not NULL
- expirationDate: date
- stockQuant: int, not NULL

- **Relationships**: M:M relationship with Sales (relationship represented by Product_Sales composite entity), M:1 relationship with Vendors (implemented by vid foreign key), M:M relationship with Purchases (relationship represented by Product_Purchases composite entry); M:M relationship with Refunds (relationship represented by Product_Purchases composite entity), M:1 relationship with Categories (implemented by catid foreign key

Categories: contains the categories that products may fall into
- categoryID int, auto_increment, unique, not NULL, PK
- name varchar, not NULL
- **Relationships**: 1:M relationship with Products

Sales: records the details of every sale made of products(s) by the company to a particular customer
Implemented by Chelsey
- saleID: int, auto_increment, unique, not NULL, PK
- cid: int, not NULL, FOREIGN KEY, REFERENCES customerID
- saleDate: date, not NULL
- totalPrice: decimal
- paymentMethod: varchar, not NULL
- **Relationships**: M:M relationship with Products (relationship represented by Product_Sales composite entity), M:1 relationship with Customers (implemented by cid foreign key) , 1:M relationship with Refunds

Product_Sales: represents one product that is present in one sale
Implemented by Chelsey
- pid: int, not NULL, PK*, REFERENCES productID
- sid: int, not NULL, PK*, REFERENCES saleID
- quantity: int, not NULL
- refunded: BOOLEAN
- **Relationships**: M:1 relationship with Sales, M:1 relationship with Products; composite entity to model Sales/Products M:M relationship

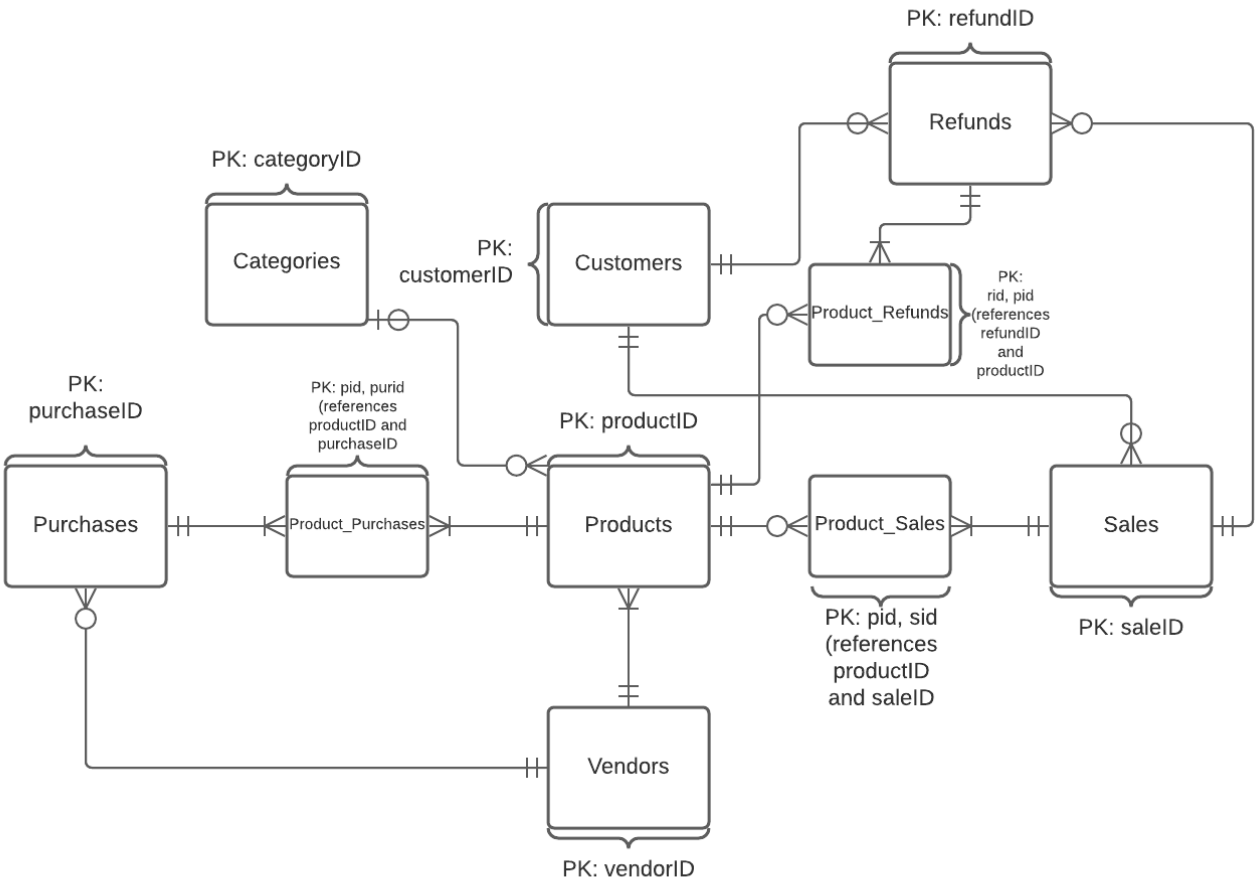
*concatenated primary key

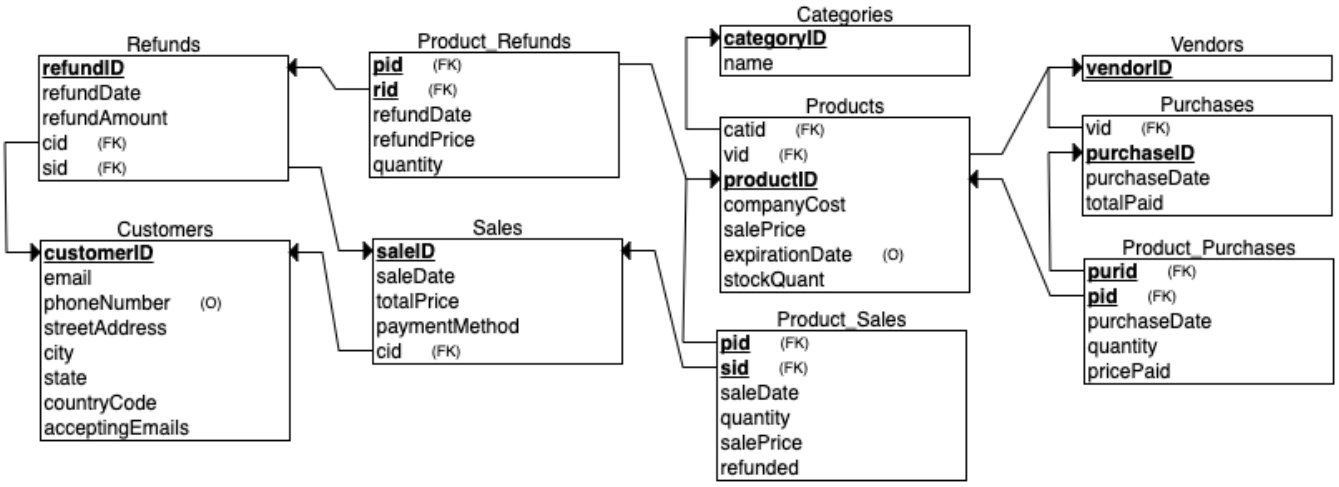
Refunds: records details about refunds issued for particular products
**Will not be implemented in final database*
- refundID: int, auto_increment, unique, not NULL, PK
- cid: int, not NULL, FOREIGN KEY, REFERENCES customerID
- sid: int, not NULL, FOREIGN KEY, REFERENCES saleID
- refundDate: DATE, not NULL
- refundAmount: decimal, not NULL
- **Relationships**: M:1 relationship with Customers (implemented by cid foreign key), M:1 relationship with Sales (implemented by sid foreign key) ; M:M relationship with Products (relationship represented by Product_Refunds composite entity)

Product_Refunds: represents one product that is present in one sale (a Sale Item)
**Will not be implemented in final database*

- rid: int, not NULL, PK*, REFERENCES refundID
- pid: int, not NULL, PK*, REFERENCES productID
- refundDate: date, not NULL
- refundPrice: decimal, not NULL
- quantity: int, not NULL
- **Relationships**: M:1 relationship with Refunds, M:1 relationship with Products; composite entity to model Refunds/Products M:M relationship

*concatenated primary key




Refunds
refundID
refundDate
refundAmount
cid (FK)
sid (FK)
Product_Refunds
pid (FK)
rid (FK)
refundDate
refundPrice
quantity
Categories
categoryID
name
Vendors
vendorID
Products
catid (FK)
vid (FK)
productID
companyCost
salePrice
expirationDate (O)
stockQuant
Purchases
vid (FK)
purchaseID
purchaseDate
totalPaid
Customers
customerID
email
phoneNumber (O)
streetAddress
city
state
countryCode
acceptingEmails
Sales
saleID
saleDate
totalPrice
paymentMethod
cid (FK)
Product_Purchases
purid (FK)
pid (FK)
purchaseDate
quantity
pricePaid
Product_Sales
pid (FK)
sid (FK)
saleDate
quantity
salePrice
refunded

EXECUTIVE SUMMARY:

Following our first review, we added several changes to our ER diagram, schema, and outline. The Vendors entity was updated to include more meaningful attributes (name, email, and description). The descriptions for Sales and Purchases were elaborated for further clarity so that readers could tell the difference between them. The description for Products was also added to clarify that each product is unique regardless of its type or category (e.g. two lavender soap products from different vendors would have distinct productIDs). The names for the three composite entities were changed to be more descriptive of the M:M relationship they are representing and also made plural to follow the convention for entity names. On the ERD the relationship between Customers and Refunds was updated to reflect that each refund must have one and only one Customer associated with it. Some additional figures were added to the description of the company and the scale of its database needs. We also added names to all entities to allow for easier queries.

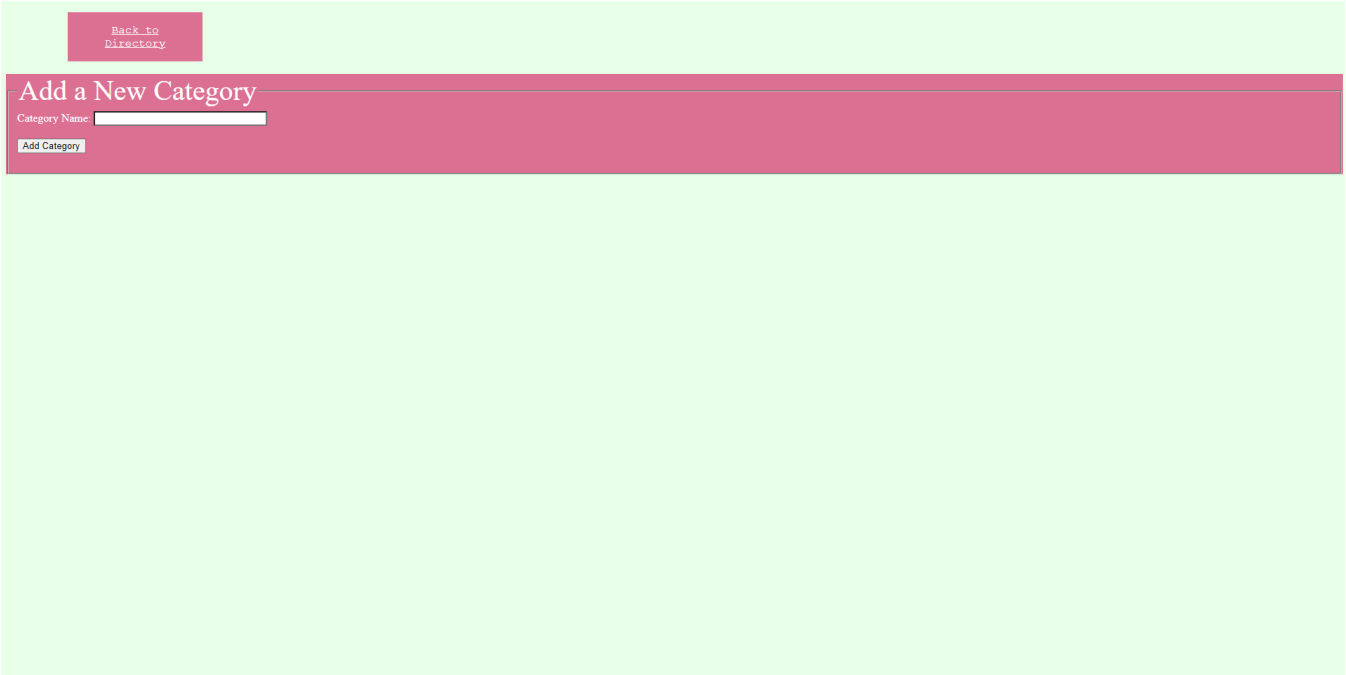
Following the next peer review, we made more changes to the outline to match our SQL queries/make them more effective. We updated the front end to allow for a nullable Product:Category relationship. Our database design allowed for a nullable relationship, but this was not reflected in the front end design initially. The outline was changed to match the Data definition queries, which were representing prices as a decimal, whereas the outline initially had them represented as integers. There were a number of fixes that were performed to achieve consistency in the relationships described between pairs of entities. Those updated were: in Sales the relationship with Customers was changed from 1:1 to M:1, in Vendors the 1:1 relationship with Purchases was added, and in Sales the 1:M relationship with Refunds was added. Those relationships that were implemented with a foreign key were updated to be specified as such. Finally, spaces were removed from entity names that included two words (e.g. Sale Item to Product_Sales) to be consistent with SQL convention. We changed the way that the Product_Refunds table was set up so that it represented the M:M relationship between Products and Refunds, instead of the 1:1 relationship with Product_Sales that it was in before.

One we started creating the HTML for the website, the major changes that we made were making it so that the user could select from dropdown menus for processes that involved foreign keys. Previously, we had it so that the user would enter in the auto incremented primary keys, but this was confusing for the user and could lead to foreign key SQL errors. In the final version of the website, the user could select the name of the value that they wanted, and the ID corresponding to the name was hidden from them. Another thing of note was that the SQL queries ended up being split up in instances where dynamic searching was implemented. The initial queries were still used, but they were broken up into separate blocks of javascript, to be looped through and potentially used depending on user input.

Other than these changes, our final website output ended up being relatively loyal to our original database outline and queries. Having a model to refer to while assembling the website definitely helped to alleviate confusion, and made it easy to maintain uniformity between what we planned to implement and what was actually implemented.

UI Screenshots and Titles

CREATE/INSERT/ADD NEW



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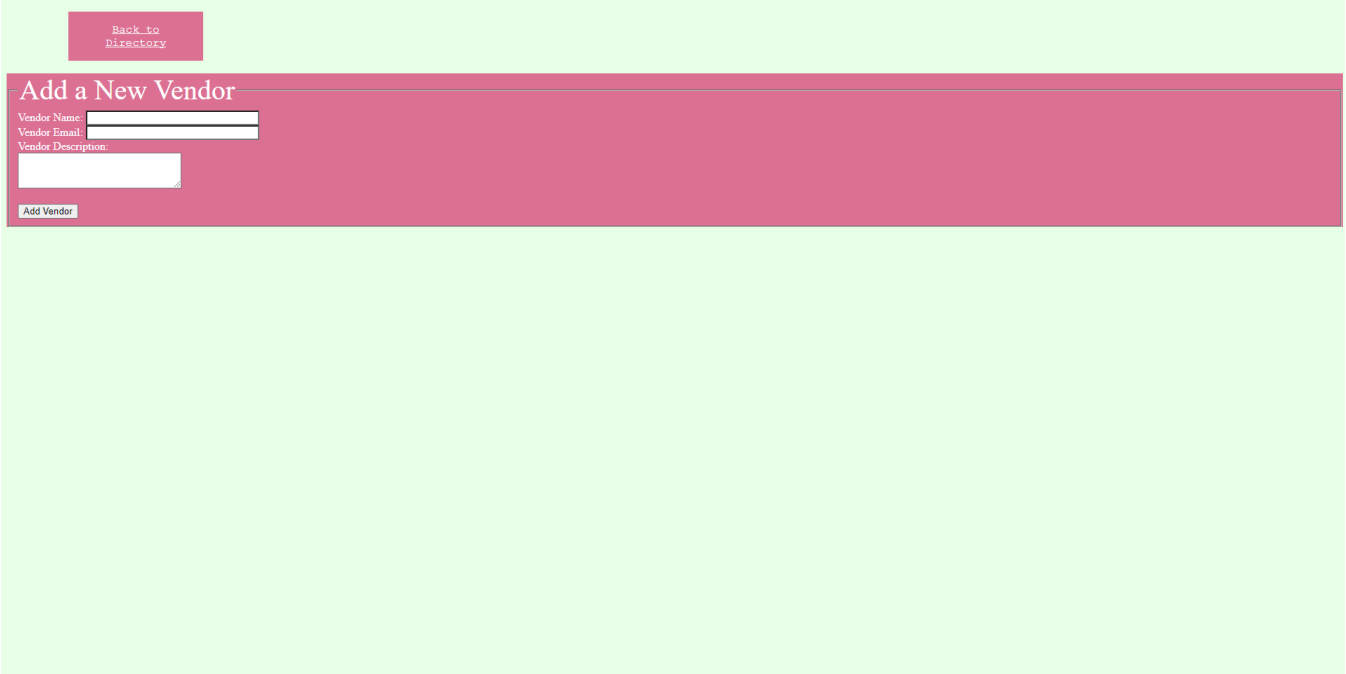

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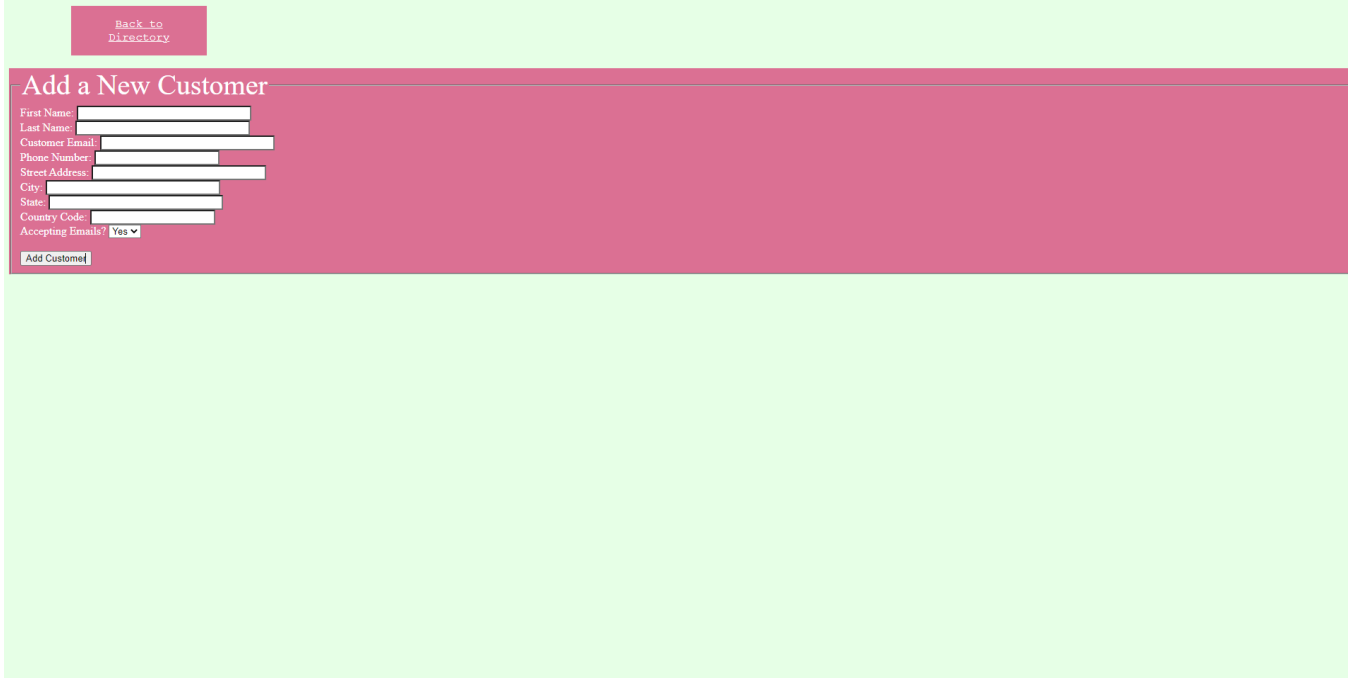
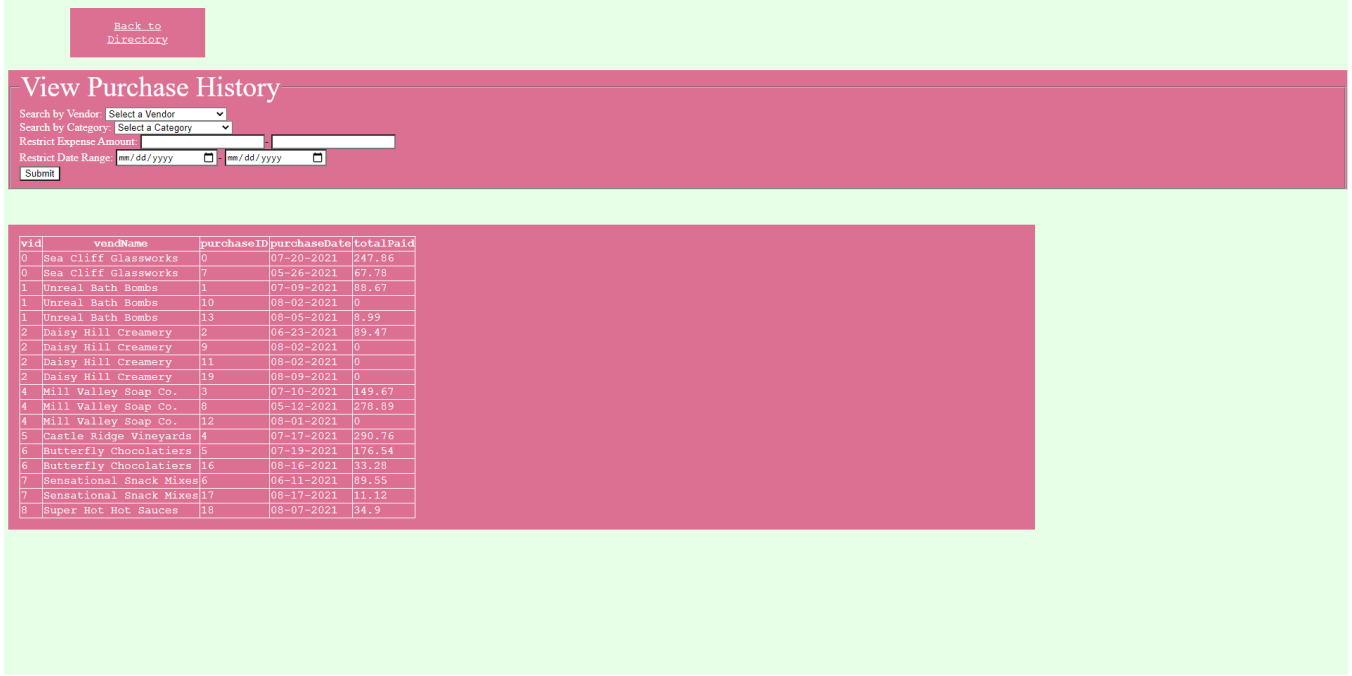


READ/BROWSE/DISPLAY



vid	vendName	purchaseID	purchaseDate	totalPaid
0	Sea Cliff Glassworks	0	07-20-2021	247.86
0	Sea Cliff Glassworks	7	05-26-2021	67.78
1	Unreal Bath Bombs	1	07-09-2021	88.67
1	Unreal Bath Bombs	10	08-02-2021	0
1	Unreal Bath Bombs	13	08-05-2021	8.99
2	Daisy Hill Creamery	2	06-23-2021	89.47
2	Daisy Hill Creamery	9	08-02-2021	0
2	Daisy Hill Creamery	11	08-02-2021	0
2	Daisy Hill Creamery	19	08-09-2021	0
4	Mill Valley Soap Co.	3	07-10-2021	149.67
4	Mill Valley Soap Co.	8	05-12-2021	278.89
4	Mill Valley Soap Co.	12	08-01-2021	0
5	Castle Ridge Vineyards	4	07-17-2021	290.76
6	Butterfly Chocolatiers	5	07-19-2021	176.54
6	Butterfly Chocolatiers	16	08-16-2021	33.28
7	Sensational Snack Mixes	6	06-11-2021	89.55
7	Sensational Snack Mixes	17	08-17-2021	11.12
8	Super Hot Hot Sauces	18	08-07-2021	34.9

READ/BROWSE/DISPLAY

Back to Directory

View Sale History

Search by Customer: Select a Customer
Search by Sale: Select a Sale by Date
Restrict Transaction Amount: -
Restrict Date Range: mm/dd/yyyy - mm/dd/yyyy
Filter by Payment Method: Filter by Payment Method Submit

cid	custName	saleID	saleDate	totalPrice	paymentMethod
0	Kim Walton	0	07-24-2021	76.97	Credit Card
1	Curtis Partridge	1	07-31-2021	67.44	Paypal
1	Curtis Partridge	29	07-22-2021	19.96	Check
1	Curtis Partridge	34	08-05-2021	29.98	Credit Card
2	Jeremiah Ortiz	2	07-23-2021	102.34	Credit Card
2	Jeremiah Ortiz	4	08-03-2021	99.67	Credit Card
2	Jeremiah Ortiz	30	07-14-2021	0	Credit Card
2	Jeremiah Ortiz	32	08-05-2021	0	Credit Card
2	Jeremiah Ortiz	33	08-05-2021	59.94	Credit Card
2	Jeremiah Ortiz	42	08-07-2021	19.96	Purchase Order
2	Jeremiah Ortiz	43	08-08-2021	0	Paypal
2	Jeremiah Ortiz	44	08-09-2021	0	
3	Andrea Lemieux	3	08-05-2021	96.78	Credit Card
3	Andrea Lemieux	28	07-08-2021	19.96	Check
3	Andrea Lemieux	31	08-02-2021	59.96	Check
3	Andrea Lemieux	35	08-11-2021	0	Check
3	Andrea Lemieux	41	08-06-2021	0	Check

READ/BROWSE/DISPLAY

Back to Directory

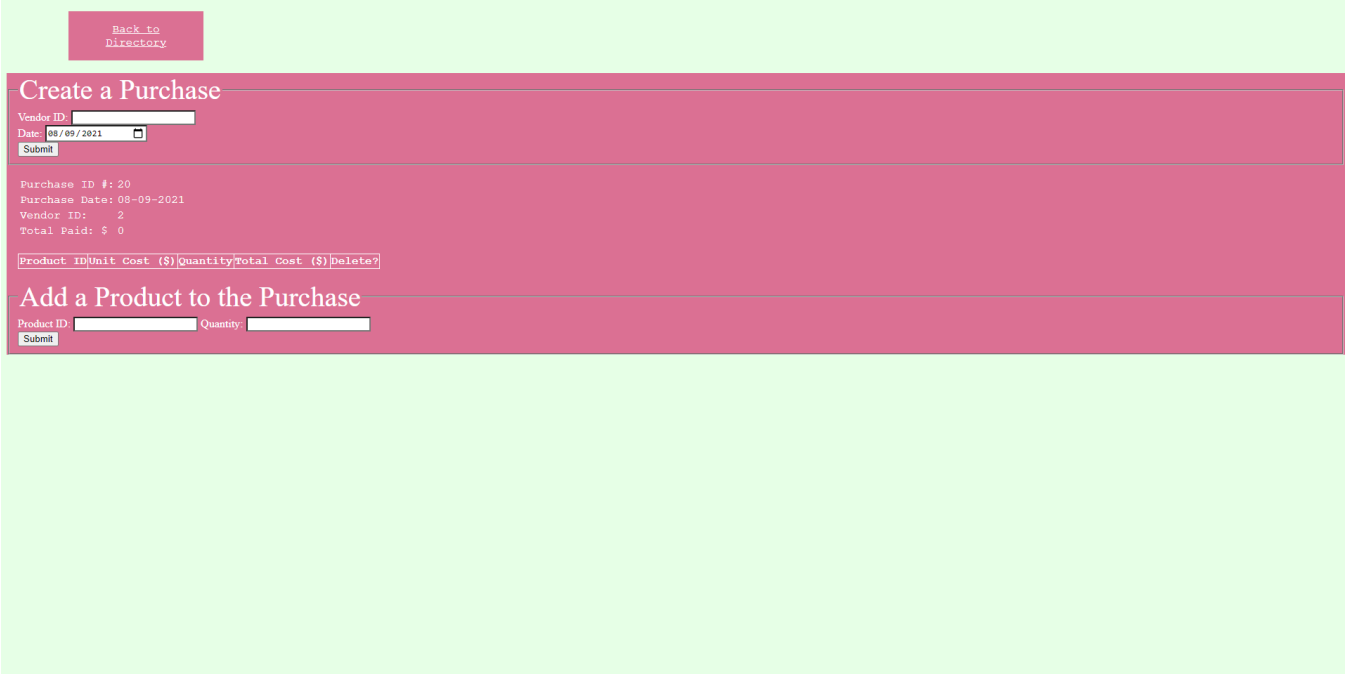
Perform Profit Analysis

Search by Product: Select a Product
Search by Vendor: Select a Vendor
Search by Category: Select a Category
Restrict Date Range: mm/dd/yyyy - mm/dd/yyyy
Submit

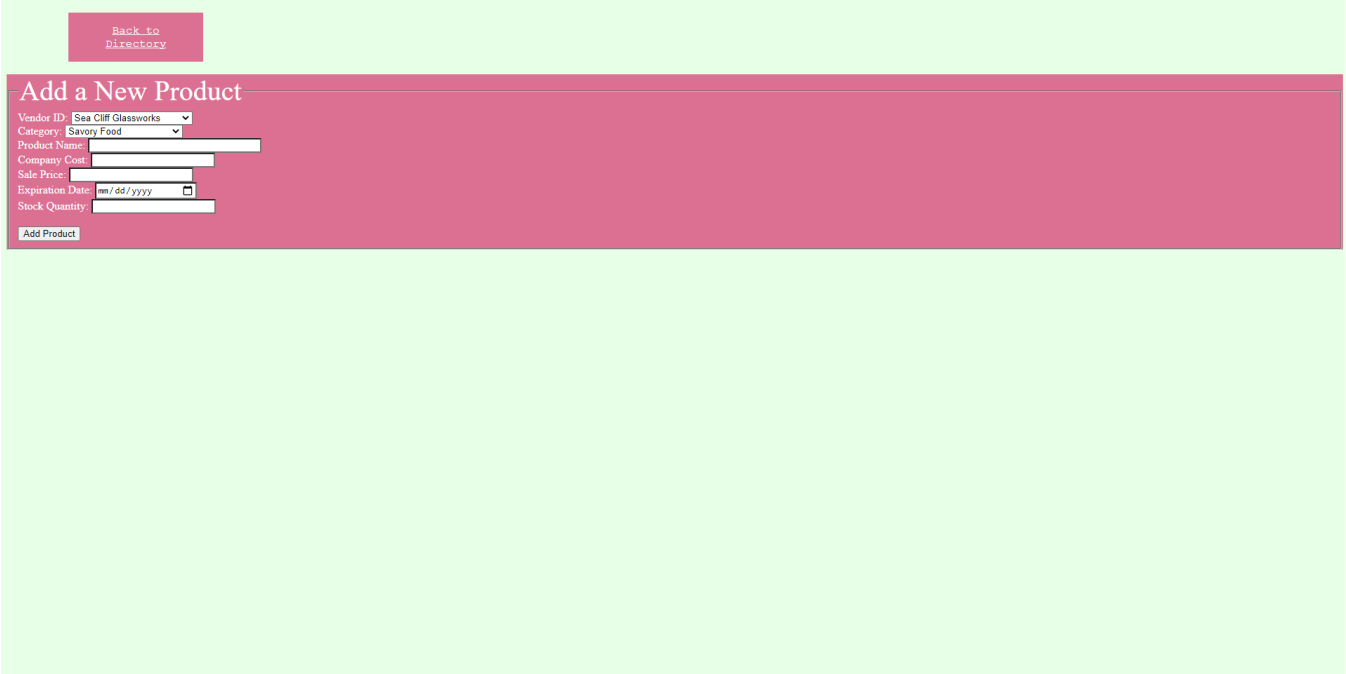
pid	name	catName	vid	vendName	totalSales
0	Lone Daisy - Window Ornament	Decor	0	Sea Cliff Glassworks	35.98
1	Orange Pumpkin Figurine	Decor	0	Sea Cliff Glassworks	149.9
2	Purple Lavender Glitter Bomb	Misc Bath	1	Unreal Bath Bombs	69.86
3	Fizzy Lemon Lime Bomb	Misc Bath	1	Unreal Bath Bombs	4.99
7	Lavender Oat Bar Soap	Soap	4	Mill Valley Soap Co.	19.96
8	Castle Ridge Chardonnay	Wine	5	Castle Ridge Vineyards	37.98
10	80% Cacao and Hazelnut Truffles	Sweet Food	6	Butterfly Chocolatiers	17.98
11	The Luxury Bar - 60% Cacao	Savory Food	6	Butterfly Chocolatiers	15.98
12	The Zesty Cheddar Party Mix	Savory Food	7	Sensational Snack Mixes	13.78
13	Rosemary Garlic Snack Mix	Savory Food	7	Sensational Snack Mixes	6.89
14	Eucalyptus and Mint Liquid Hand Soap	Soap	4	Mill Valley Soap Co.	39.56

READ/BROWSE/DISPLAY and CREATE/INSERT/ADD NEW and DELETE

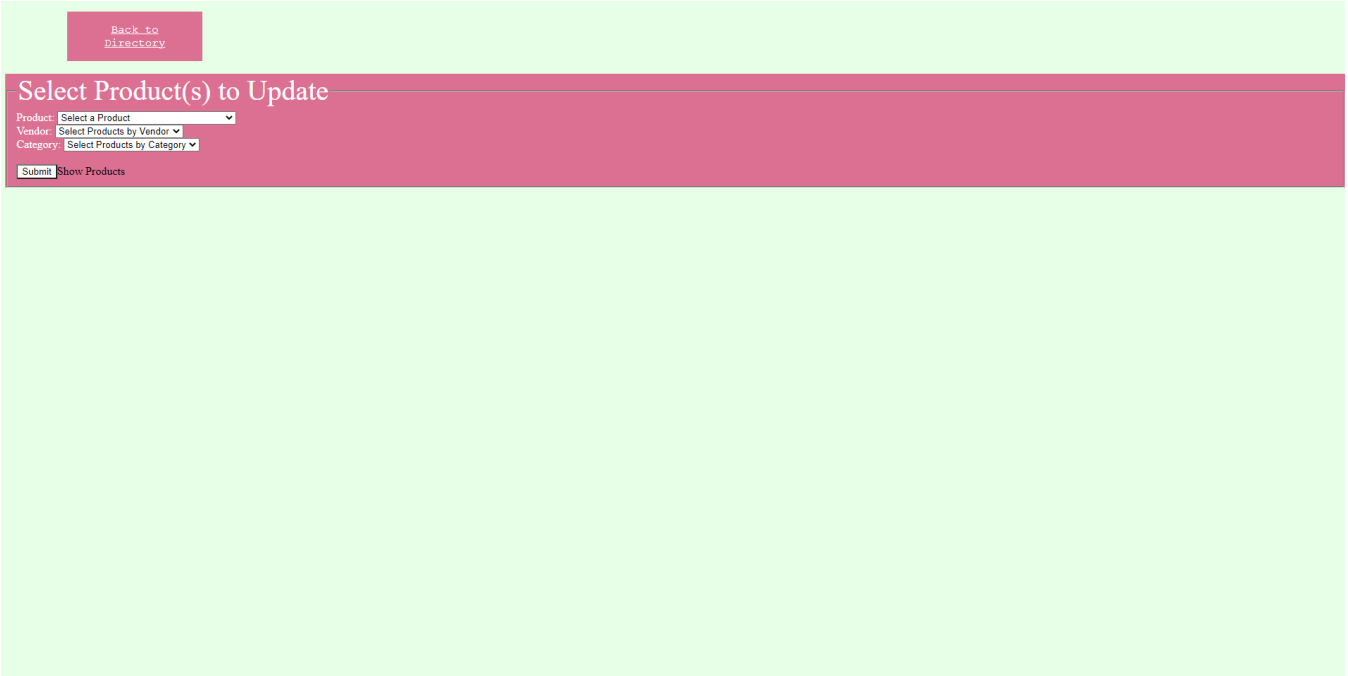
READ/BROWSE/DISPLAY and CREATE/INSERT/ADD NEW and DELETE



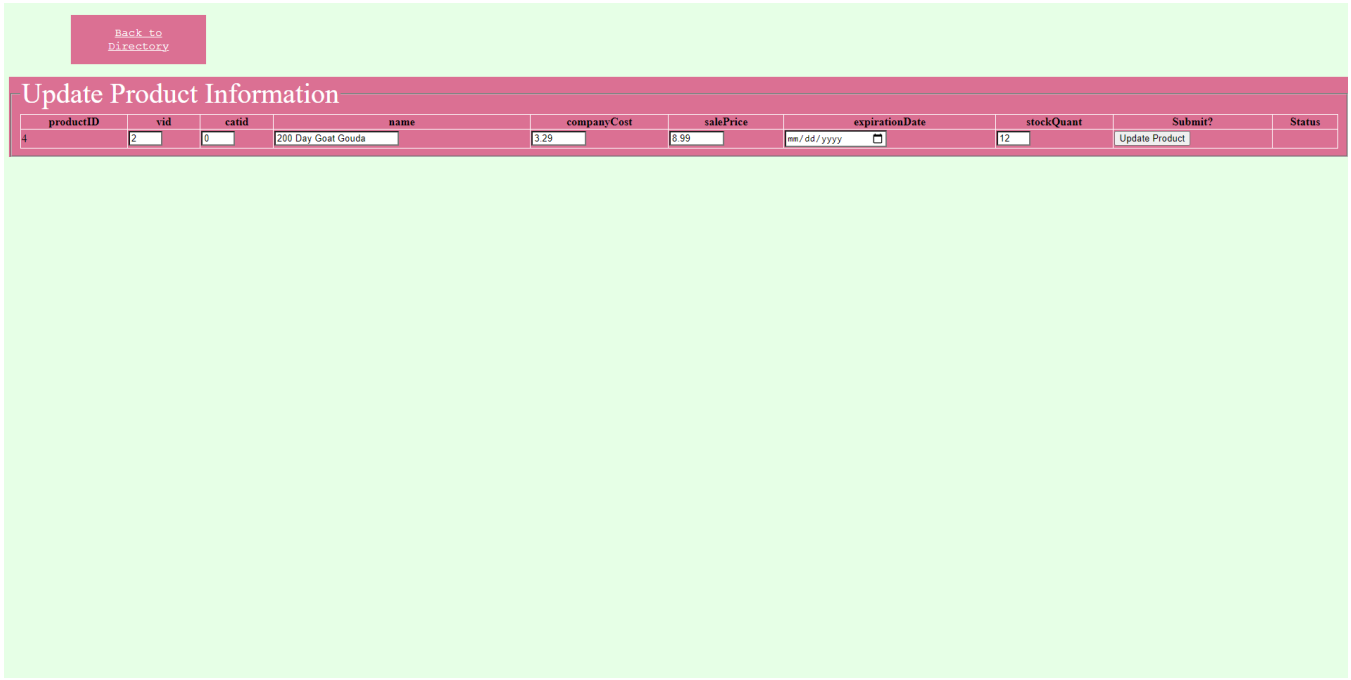
READ/BROWSE/DISPLAY and CREATE/INSERT/ADD NEW



READ/BROWSE/DISPLAY and UPDATE



UPDATE


Back to Directory
Update Product Information
productID
vid
catid
name
companyCost
salePrice
expirationDate
stockQuant
Submit?
Status
4
2
0
200 Day Goat Gouda
3.29
8.99
mm/dd/yyyy
12
Update Product

CS 340 TEAM EVALUATION FORM
AUGUST 9, 2021

RATE YOUR TEAMS PERFORMANCE USING THE SCALE BELOW.

1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree

GROUP NUMBER	33	
NAME OF GROUP TEAM MEMBERS:	Laura Sendlein and Chelsey Beck	
SCALE AND COMMENTS	RATING	ADDITIONAL COMMENTS
HOW PREPARED WAS YOUR TEAM? Research, reading, and assignment complete	4	Probably this was where I personally struggled the most. It could be hard to keep up with both the assignments and the reading.
HOW RESPONSIVE & COMMUNICATIVE WERE YOU BOTH AS A TEAM? Responded to requests and assignment modifications needed. Initiated and responded appropriately via email, Slack etc.	4	
DID BOTH GROUP MEMBERS PARTICIPATE EQUALLY Contributed best academic ability	4	
DID YOU BOTH FOLLOW THE INITIAL TEAM CONTRACT? Were both team members both positive and productive?	4	Chelsey was a pleasure to work with!

CS 340 TEAM EVALUATION FORM
DATE AUGUST 9, 2021

RATE YOUR TEAMS PERFORMANCE USING THE SCALE BELOW.

1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree

GROUP NUMBER	33	
NAME OF GROUP TEAM MEMBERS:	Laura Sendlein and Chelsey Beck	
SCALE AND COMMENTS	RATING	ADDITIONAL COMMENTS
HOW PREPARED WAS YOUR TEAM? Research, reading, and assignment complete	4	We did pretty well overall. We definitely both had moments where time was limited but we were both really able to help accommodate the other at different times per the agreement.
HOW RESPONSIVE & COMMUNICATIVE WERE YOU BOTH AS A TEAM? Responded to requests and assignment modifications needed. Initiated and responded appropriately via email, Slack etc.	4	Great throughout. Laura did a great job forecasting schedules and communicating what tasks we each were responsible for.
DID BOTH GROUP MEMBERS PARTICIPATE EQUALLY Contributed best academic ability	4	
DID YOU BOTH FOLLOW THE INITIAL TEAM CONTRACT? Were both team members both positive and productive?	4	Laura was a pleasure to work with as well! I think it ended up being a really great fit.