

CS 340 Group 88 Project Step 6 FINAL

Team Number: 88

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Project Title: Footwear Distro

URL: <http://flip3.engr.oregonstate.edu:7524>

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Executive Summary

For our step 1 submission, the main feedback we received was that it was unclear if there was an M:M relationship. Although, we actually had two M:M relationships with the entities DistributionCenters and Products and the entities TransferReports and Products. We updated our step 1 draft by adding a couple more sentences to clearly explain that there is a relationship between those two M:M relationships.

We received a lot more feedback in our step 2 submission. A majority of it was around the intersection table ModelColors being redundant. We definitely agreed with this feedback and removed this intersection table then used the primary keys from Models and Colors as foreign keys in the Products entity. Another feedback that we received was removing the primary keys from the insert queries in the DDL since the keys will be auto_incremented whenever a new entry is created. The rest of the feedback was around data types, specifically the phone number and size attribute, which were both updated to varchar(16). The final update we made was removing NOT NULL for the foreign keys modelID and colorID from the Products entity to make these attributes NULLABLE.

In our step 3 submission, all the reviewers suggested making the dropdown for foreign id display the actual value instead of the foreign key. After making this change, we also added the NULL options for the models and colors dropdown on the Products page because these entities had NULLABLE relationships. The last feedback we received was updating the column names of the tables on each page to make them more readable. We agree with this feedback and changed the column names so it appears more like proper English than variables in code.

All the reviewers in our step 4 submission recommended that we keep the ordering of the attributes consistent with the insert and update form. We agreed with this suggestion and updated all the pages to stay consistent. Another feedback that we received was that the users had to refresh the page to see any changes. We added location.reload to our code so that successful insert, update, and delete will refresh the page.

For our step 5 submission, all the reviewers suggested adding required to the input fields that do not accept NULL. This was a simple fix as we added required to all the input fields and made sure that NULL was an option in the dropdown menu for the Products page. We made sure that location.reload was in all the CRUD functions, as some users still had to refresh to see changes. We also added a script to each page so whenever a user selects an ID to update, the forms are auto filled with the data. This was intended to make it easier for the users to update their entries, as previously the user would need to re-enter all the data associated with the selected ID.

Project Outlines

Our company Footwear Distro is getting ready for the holidays and needs to move 10,000 units of footwear from our distribution center to our stores. Our company has 3 distribution centers, one located on the west coast, one located in the south, and another on the east coast, and 13 stores across the country. Each store specializes in a specific type of footwear, luxury, casual, athletic, and discount. The store can expect to receive products from the distribution centers only, not other stores.

The database is used to keep track of product information and the quantity at each distribution center, as well as the number of products being transferred and where the products are heading. Stores in a higher population location will be expected to receive more inventory than a store in a lower population location. For example, our stores located in larger cities will expect to receive 2000 units whereas a small town may only receive 300 units.

Database Outlines

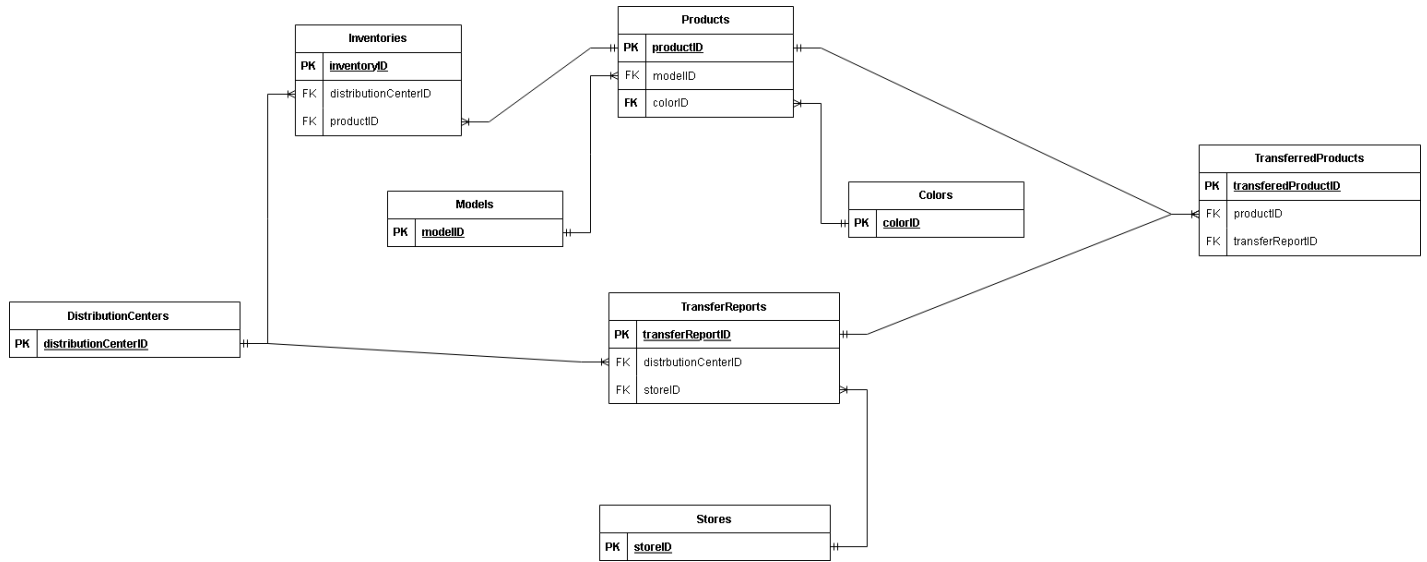
Entities:

- DistributionCenters - Records the address and contact info of the distribution centers.
 - **Attribute:**
 - distributionCenterID int, auto_increment, not NULL, PK
 - phoneNumber varchar(16), not NULL
 - email varchar(255), not NULL
 - address varchar(255), not NULL
 - **Relationship:**
 - 1:M relationship between DistributionCenters and Inventories where the distributionCenterID is used as the FK in Inventories.
 - 1:M relationship between DistributionCenters and Transfer Report where the distributionCenterID is used as the FK in Transfer Report.
 - M:M relationship between DistributionCenters and Products where Inventories serve as the intersection table.
- Inventories - Intersection table between DistributionCenters and Products
 - **Attribute:**
 - inventoryID int, auto_increment, not NULL, PK
 - distributionCenterID int, not NULL, FK
 - productID int, not NULL, FK
 - quantity int, not NULL
 - **Relationship:**
 - M:1 relationship between Inventories and DistributionCenters where the distributionCenterID is used as the FK in Inventories.

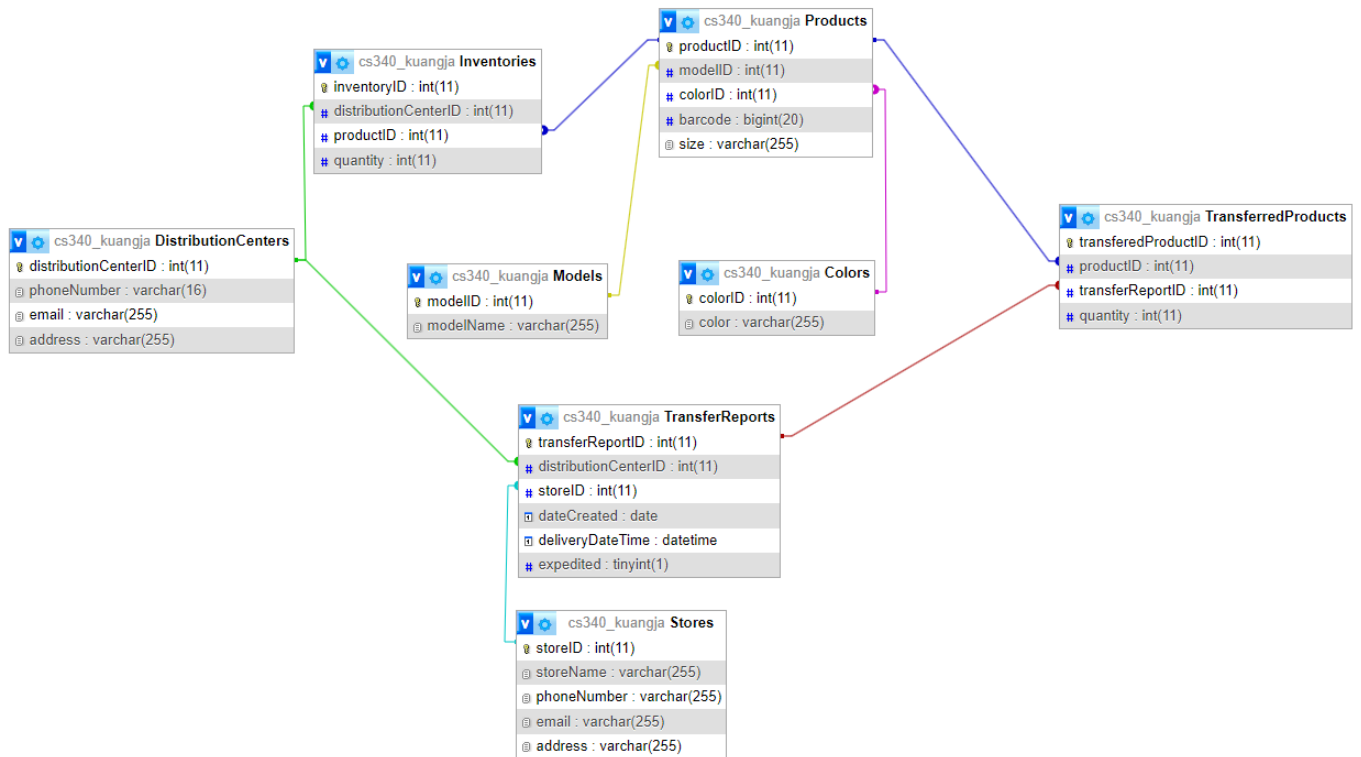
- M:1 relationship between Inventories and Products where the productID is used as the FK in Inventories.
 - Serve as an intersection table for the M:M relationship between DistributionCenters and Products.
- Products - Records the information of the products.
 - **Attribute:**
 - productID int, auto_increment, not NULL, PK
 - modelID int, FK
 - colorID int, FK
 - barcode bigint, not NULL
 - size varchar(255)
 - **Relationship:**
 - 1:M relationship between Products and Inventories where the productID is used as the FK in Inventories.
 - 1:M relationship between Products and TransferredProducts where the productID is used as the FK in TransferredProducts.
 - M:M relationship between Products and DistributionCenters where Inventories serve as the intersection table.
 - M:M relationship between Products and TransferReports where the TransferredProducts serve as the intersection table.
 - M:1 relationship between Products and Models where the modelID is used as the FK in Products. If the model is deleted, set NULL.
 - M:1 relationship between Products and Colors where the colorID is used as the FK in Products. If the color is deleted, set NULL.
- Models - Record the model names.
 - **Attribute:**
 - modelID int, auto_increment, not NULL, PK
 - modelName varchar(255), not NULL
 - **Relationship:**
 - 1:M relationship between Models and Products where the modelID is used as the FK in Products.
- Colors - Record the color names.
 - **Attribute:**
 - colorID int, auto_increment, not NULL, PK
 - colorName varchar(255), not NULL
 - **Relationship:**
 - 1:M relationship between Colors and Products where the colorID is used as the FK in Products.
- TransferredProducts - Intersection table between TransferReports and Products
 - **Attribute:**
 - transferedProductID int, auto_increment, not NULL, PK
 - productID int, not NULL, FK
 - transferReportID int, not NULL, FK

- quantity int, not NULL
- **Relationship:**
 - M:1 relationship between TransferredProducts and Products where the productID is used as the FK in TransferredProducts.
 - M:1 relationship between TransferredProducts and TransferReports where the transferReportID is used as the FK in TransferredProducts.
 - Serve as an intersection table for the M:M relationship between TransferReports and Products.
- TransferReports - Records when a transfer occurred as well as the destination and source.
 - **Attribute:**
 - transferReportID int, auto_increment, unique, not NULL, PK
 - distributionCenterID int, not NULL, FK
 - storeID int, not NULL, FK
 - dateCreated date, not NULL
 - deliveryDateTime datetime, not NULL
 - expedited boolean, not NULL
 - **Relationship:**
 - 1:M relationship between TransferReports and TransferredProducts where the transferReportID is used as the FK in TransferredProducts.
 - M:1 relationship between TransferReports and DistributionCenters where the distributionCenterID is used as the FK in TransferReports.
 - M:1 relationship between TransferReports and Stores where the storeID is used as the FK in TransferReports.
 - M:M relationship between TransferReports and Products where the TransferredProducts serve as the intersection table.
- Stores - Records the store's contact information and address.
 - **Attribute:**
 - storeID int, auto_increment, not NULL, PK
 - storeName varchar(255), not NULL
 - phoneNumber varchar(16), not NULL
 - email varchar(255), not NULL
 - address varchar(255), not NULL
 - **Relationship:**
 - 1:M relationship between Stores and TransferReports where the storeID is used as the FK in TransferReports.

Entity Relationship Diagram



Database Schema



Sample Data

DistributionCenters			
distributionCenterID	phoneNumber	email	address
1	917-123-4567	NY@distrofootwear.com	390 Great Lane, New York, NY 10001
2	415-321-7654	CA@distrofootwear.com	505 Peck Ave, San Francisco, California 92660
3	813-111-6543	FL@distrofootwear.com	72 Lake Town, Tampa, Florida 34852

Inventories			
inventoryID	distributionCenterID	productID	quantity
1	1	1	1500
2	1	2	1400
3	2	3	1200
4	3	2	800
5	3	4	300

Products				
productID	modelID	colorID	barcode	size
1	1	1	1231231230	7
2	1	1	1231231235	8.5
3	2	2	4561234562	10
4	3	3	7416528960	10.5

Models	
modelID	modelName
1	Rugged Leather Boots
2	Elegant Evening Heel
3	Heighten Performance Running Shoes

Colors	
colorID	color
1	Brown
2	Red
3	Grey

TransferredProducts				
transferredProductID	productID	transferReportID	quantity	
1	1	1	50	
2	2	1	20	
3	2	2	100	
4	3	3	50	
5	1	4	10	
6	2	4	20	
7	4	5	40	

TransferReports						
transferReportID	distributionCenterID	storeID	dateCreated	deliveryDateTime	expedited	
1	1	1	2023-10-24	2023-10-26 15:30:00	1	
2	2	1	2023-10-27	2023-11-03 16:00:00	0	
3	2	2	2023-10-28	2023-11-04 11:00:00	0	
4	3	2	2023-11-01	2023-11-08 12:45:00	0	
5	3	3	2023-11-02	2023-11-04 9:30:00	1	

Stores				
storeID	storeName	phoneNumber	email	address
1	Fashion Shoe Gallery	512-121-8520	FashionShoeGallery@distrofootwear.com	78 Oak Street, Austin, Texas 74252
2	Comfort Shoe Store	312-532-1289	ComfortShoeStore@distrofootwear.com	822 Maple Lane, Chicago, Illinois 65626

3	Gym Shoe Outlet	313-174-7421	GymShoeOutlet@distrofootwear.com	12 Pine Town, Detroit, Michigan 44822
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Screen Shots

Figure 1. This is the home page of our project.

Home Page of Footwear Distro

[Home](#) | [DistributionCenters](#) | [Inventories](#) | [Products](#) | [Models](#) | [Colors](#) | [TransferredProducts](#) | [TransferReports](#) | [Stores](#)

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Figure 2. This is the page for the Distribution Centers entity, users can ADD, UPDATE, and DELETE from this page. The entries are DISPLAYED from the database in a table.

Footwear Distro: Distribution Centers Page

[Home](#) | [DistributionCenters](#) | [Inventories](#) | [Products](#) | [Models](#) | [Colors](#) | [TransferredProducts](#) | [TransferReports](#) | [Stores](#)

Distribution Center ID	Address	Email	Phone Number
2	505 Peck Ave, San Fransico, California 92660	CA@distrofootwear.com	415-321-7654
7	Test Address, Test 12111	success@test.com	123-123-1988
10	New Address, Test 12131	third@town.com	328-112-5555
17	testing address	testing email	testing phone

Add A DistributionCenters

Address Email Phone Number

Add Distribution Center

Update Distribution Center

Distribution Center ID: Select A Distribution Center ID ▼ Address Email Phone Numbers

Update Distribution Center

Delete Distribution Center

Are you sure you wish to delete the following?

Distribution Center ID: Select A Distribution Center ID ▼

Delete Distribution Center

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Figure 3. This is the page for the Inventories entity, users can ADD, UPDATE, and DELETE from this page. The entries are DISPLAYED from the database in a table.

Since this entity serves as the Intersection table between Distribution Centers and Products. Deleting an entry from either of those entities will delete the associated record on this table.

Footwear Distro: Inventories Page

[Home](#) | [DistributionCenters](#) | [Inventories](#) | [Products](#) | [Models](#) | [Colors](#) | [TransferredProducts](#) | [TransferReports](#) | [Stores](#)

Inventory ID	Address	Barcode	Quantity
3	New Address, Test 12131	1212511333	2
6	505 Peck Ave, San Fransico, California 92660	5555555555	788
11	New Address, Test 12131	55556666	788
12	990 Test	5555555555	4000

Add An Inventory

Address	<input type="text" value="Select An Address"/>	Barcode	<input type="text" value="Select A Barcode"/>	Quantity	<input type="text"/>
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Update Inventory

Inventory ID:	<input type="text" value="Select A Inventory ID"/>	Address	<input type="text" value="Select An Address"/>	Barcode	<input type="text" value="Select A Barcode"/>	Quantity	<input type="text"/>
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Delete Inventory

Are you sure you wish to delete the following?	
Inventory ID:	<input type="text" value="Select A Inventory ID"/>

Figure 4. This is the page for the Products entity, users can SEARCH, ADD, UPDATE, and DELETE from this page. The entries are DISPLAYED from the database in a table.

The Products has a Many to One relationship with Models and Colors, deleting either of them will cause the associated entry in the Products entity to be set to NULL. Users may also choose NULL as an option when adding a Product, updating, or searching for a Product. Using the search also allows the users to filter entries that are displayed in the dropdown of the update and delete form.

Footwear Distro: Products Page

[Home](#) | [DistributionCenters](#) | [Inventories](#) | [Products](#) | [Models](#) | [Colors](#) | [TransferredProducts](#) | [TransferReports](#) | [Stores](#)

Product ID	Model Name	Color	Barcode	Size
1	Rugged Leather Boots	Brown	1231231230	7
2	Rugged Leather Boots	Brown	1231231235	8.5
3	Elegant Evening Heel	Red	4561234562	10
9	Rugged Leather Boots	Brown	5555555555	12
12	Heighten Performance	Red	55556666	13

Add A Product

Model Name	<input type="text" value="Select A Model Name"/>	Color	<input type="text" value="Select A Color"/>	Barcode	<input type="text"/>	Size	<input type="text"/>
<input type="button" value="Add Product"/>							

Update Product

Product ID:	<input type="text" value="Select A Product ID"/>	Model Name	<input type="text"/>	Color	<input type="text"/>	Barcode	<input type="text"/>
Size	<input type="text"/>						
<input type="button" value="Update Product"/>							

Delete Product

Are you sure you wish to delete the following?	
Product ID:	<input type="text" value="Select A Product ID"/>
<input type="button" value="Delete Product"/>	

Search Products

Model Name	<input type="text" value="Select A Model Name"/>	Color	<input type="text" value="Select A Color"/>
<input type="button" value="Search Products"/>			

Figure 5. This is the page for the Models entity, users can ADD, UPDATE, and DELETE from this page. The entries are DISPLAYED from the database in a table.

Footwear Distro: Models Page

[Home](#) | [DistributionCenters](#) | [Inventories](#) | [Products](#) | [Models](#) | [Colors](#) | [TransferredProducts](#) | [TransferReports](#) | [Stores](#)

Model ID	Model Name
1	Rugged Leather Boots
2	Elegant Evening Heel
3	Heighten Performance Running Shoes
6	Rubber Boots
8	Sneakers

Add A Model Name

Model Name

Add Model

Update Model Names

Model ID: Model Name

Update Model

Delete Model Name

Are you sure you wish to delete the following?

Model ID:

Delete Model

Figure 6. This is the page for the Colors entity, users can ADD, UPDATE, and DELETE from this page. The entries are DISPLAYED from the database in a table.

Footwear Distro: Colors Page

[Home](#) | [DistributionCenters](#) | [Inventories](#) | [Products](#) | [Models](#) | [Colors](#) | [TransferredProducts](#) | [TransferReports](#) | [Stores](#)

Color ID	Color
1	Brown
2	Red
4	Pink
6	Ruby
8	Yellow

Add A Color Name

Color Name

Add Color

Update Color Names

Color ID:

Select A Color ID ▼

 Color Name

Update Color

Delete Color Name

Are you sure you wish to delete the following?

Color ID:

Select A Color ID ▼

Delete Color

Figure 7. This is the page for the Transferred Products entity, users can ADD, UPDATE, and DELETE from this page. The entries are DISPLAYED from the database in a table.

Since this entity serves as the Intersection table between Transfer Reports and Products. Deleting an entry from either of those entities will delete the associated record on this table.

Footwear Distro: TransferredProducts Page

[Home](#) | [DistributionCenters](#) | [Inventories](#) | [Products](#) | [Models](#) | [Colors](#) | [TransferredProducts](#) | [TransferReports](#) | [Stores](#)

Transferred Product ID	Barcode	Transfer Report ID	Quantity
3	1231231235	2	100
13	1212511333	12	1677
15	12516241333	18	555
16	55556666	19	1551

Add An TransferredProduct

Barcode transferReportID Quantity

Add TransferredProduct

Update TransferredProduct

TransferredProduct ID: Barcode transferReportID Quantity

Update TransferredProduct

Delete TransferredProduct

Are you sure you wish to delete the following?

TransferredProduct ID:

Delete TransferredProduct

Figure 8. This is the page for the Transferred Reports entity, users can ADD, UPDATE, and DELETE from this page. The entries are DISPLAYED from the database in a table.

Since this entity serves as the Intersection table between Distribution Centers and Stores. Deleting an entry from either of those entities will delete the associated record on this table.

Footwear Distro: TransferReports Page

[Home](#) | [DistributionCenters](#) | [Inventories](#) | [Products](#) | [Models](#) | [Colors](#) | [TransferredProducts](#) | [TransferReports](#) | [Stores](#)

Transfer Report ID	Distribution Center	Store	Date Created	Delivery Date Time	Expedited
2	505 Peck Ave, San Fransico, California 92660	Fashion Shoe Gallery	10/27/2023	11/3/23, 4:00 PM	Yes
6	505 Peck Ave, San Fransico, California 92660	Tree	11/30/2023	12/8/23, 5:56 PM	Yes
12	Test Address,	Fashion Shoe Gallery	11/3/2023	12/8/23, 6:11 PM	Yes

Add A TransferReport

Distribution Center	Select A Distribution Center ▼	Store	Select A Store ▼	Date Created	mm/dd/yyyy	Delivery Date	Time	mm/dd/yyyy --:-- --	Expedited	<input type="checkbox"/>
<input type="button" value="Add TransferReport"/>										

Update TransferReport

TransferReport ID:	Select A TransferReport ID ▼	Distribution Center	Select A Distribution Center ▼	Store	Select A Store ▼	Date Created	mm/dd/yyyy	Delivery Date	Time	mm/dd/yyyy --:-- --	Expedited	<input type="checkbox"/>
<input type="button" value="Update TransferReport"/>												

Delete TransferReport

Are you sure you wish to delete the following?	
TransferReport ID:	Select A TransferReport ID ▼
<input type="button" value="Delete TransferReport"/>	

Figure 9. This is the page for the Stores entity, users can ADD, UPDATE, and DELETE from this page. The entries are DISPLAYED from the database in a table.

Footwear Distro: Stores Page

[Home](#) | [DistributionCenters](#) | [Inventories](#) | [Products](#) | [Models](#) | [Colors](#) | [TransferredProducts](#) | [TransferReports](#) | [Stores](#)

Store ID	Store Name	Phone Number	Email	Address
1	Fashion Shoe Gallery	512-121-8520	FashionShoeGallery@distrofootwear.com	78 Oak Street, Austin, Texas 74252
4	Test Store	123-123-1988	example@test.com	New Address, Test 12131
7	New Test	555-444-1234	test@test.com	New Address, Test 12131
9	New Store	123-456-7890	email@place.com	Address, Test 9876

Add A Store

Store Name	<input type="text"/>	Phone Number	<input type="text"/>	Email	<input type="text"/>	Address	<input type="text"/>
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Add Store

Update Store

Store ID:	<input type="text" value="Select A Store ID"/>	Store Name	<input type="text"/>	Phone Number	<input type="text"/>	Email	<input type="text"/>
Address		<input type="text"/>					

Update Store

Delete Store

Are you sure you wish to delete the following?	
Store ID:	<input type="text" value="Select A Store ID"/>

Delete Store