

Assignment 6 Database UI

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Database UI

This project expands on using the contents of the [Shopping Trends](#) file from [Assignment 3](#), and the SQL access demonstrated in [Assignment 5](#). The schema and data files from those projects have been duplicated into this project.

This report is available at https://quoll.github.io/608_frontend/report.html

Description

This UI has been built using [Flask](#) and the [MySQL-connector](#) Python library. All required packages are described in the [requirements.txt](#) file. Because the UI is built using Flask, it is not available online, though it can be run locally.

To run the application:

- Load the [Table Definitions](#) into MySQL.
- Load the [data](#) (transformed from the original CSV) into MySQL.
- In the Flask directory, load the required packages using `pip install -r requirements.txt`
- Create a `.env` file in the flask directory.
- Start the Flask server using `flask --app app run`
 - This starts a web server on `localhost:5000`
- Open a web browser and navigate to `http://localhost:5000/`

.env file

While environment variables can be set in the terminal, it is easier to set them in a `.env` file. The following variables are required:

```
MYSQL_USER = <your_mysql_username>
MYSQL_PASS = <your_mysql_password>
MYSQL_HOST = localhost           # your MySQL server name
MYSQL_PORT = 3306
MYSQL_DATABASE = <your_database_name> # your database
```

Listing Pages

Each of the following pages displays large lists of data. This data is paged to 50 items per page, with paging controls at the bottom of the list.

Customers

Upon starting, the UI will show a list of customers. The Customers page can be accessed at any time by selecting the “Customers” link in the navigation bar. The initial customer data is extracted from the original CSV file and displays:

- **ID:** The customer ID. Select this button to view that customer’s information.
- **Age:** The age of the customer.
- **Gender:** The gender of the customer.
- **Subscription Status:** Indicates whether the customer is a subscriber or not.
- **Previous Purchases:** The number of previous purchases made by the customer.
- **Payment Method:** The *preferred* payment method of the customer.
- **Frequency Name:** The frequency of purchases made by the customer.
- **Location Name:** The location of the customer.

- **Purchase:** This is a button that navigates to the purchases page for that customer. The original dataset contains a single purchase per customer, but additional purchases can be added.

CustomersPurchasesItemsNew CustomerNew PurchaseNew Item

Customers

ID	Age	Gender	Subscription Status	Previous Purchases	Payment Method	Frequency Name	Location Name	Purchase
1	55	Male	Yes	14	Venmo	Fortnightly	Kentucky	...
2	19	Female	Yes	2	Cash	Fortnightly	Maine	...
3	50	Male	Yes	23	Credit Card	Weekly	Massachusetts	...
4	21	Male	Yes	49	PayPal	Weekly	Rhode Island	...
5	45	Male	Yes	31	PayPal	Annually	Oregon	...
6	46	Male	Yes	14	Venmo	Weekly	Wyoming	...
7	63	Male	Yes	49	Cash	Quarterly	Montana	...
8	27	Male	Yes	19	Credit Card	Weekly	Louisiana	...
9	26	Male	Yes	8	Venmo	Annually	West Virginia	...
10	57	Male	Yes	4	Cash	Quarterly	Missouri	...

Figure 1: Customer Listing

Purchases

The Purchases page can be accessed by selecting the “Purchases” link in the navigation bar. The initial purchase data is extracted from the original CSV file. This page displays:

- **ID:** The purchase ID. Select this button to view the information for that purchase.
- **Customer:** The ID of the customer who made the purchase. Select this button to view the information for that customer.
- **Item:** The name of the item purchased. *Hover over the item to see the category, size, and color of the item.*
- **Amount:** The amount of the purchase.
- **Season:** The season in which the purchase was made.
- **Rating:** The numerical rating given to the purchase by the customer.
- **Payment Method:** The payment method used for the purchase.
- **Shipping Type:** The shipping type used for the purchase.
- **Discount:** Indicates whether a discount was applied to the purchase.
- **Promo Code Used:** Indicates whether a promo code was used for the purchase.

CustomersPurchasesItems

New CustomerNew PurchaseNew Item

Purchases

ID	Customer	Item	Amount	Season	Rating	Payment Method	Shipping Type	Discount	Promo Code Used
1	1	Blouse	53.00	Winter	3.1	Credit Card	Express	Yes	Yes
2	2	Sweater	64.00	Winter	3.1	Bank Transfer	Express	Yes	Yes
3	3	Jeans	73.00	Spring	3.1	Cash	Free Shipping	Yes	Yes
4	4	Sandals	90.00	Spring	3.5	PayPal	Next Day Air	Yes	Yes
5	5	Blouse	49.00	Spring	2.7	Cash	Free Shipping	Yes	Yes
6	6	Sneakers	20.00	Summer	2.9	Venmo	Standard	Yes	Yes
7	7	Shirt	85.00	Fall	3.2	Debit Card	Free Shipping	Yes	Yes
8	8	Shorts	34.00	Winter	3.2	Debit Card	Free Shipping	Yes	Yes
9	9	Coat	97.00	Summer	2.6	Venmo	Express	Yes	Yes
10	10	Handbag	31.00	Spring	4.8	PayPal	2-Day Shipping	Yes	Yes

Figure 2: Purchase Listing

Items

The Items page can be accessed by selecting the “Items” link in the navigation bar. The initial item data is extracted from the original CSV file. This page displays:

- **ID:** The item ID. Select this button to view the information for that item.
- **Name:** The name of the item.
- **Category:** The category of the item.
- **Size:** The size of the item.
- **Color:** The color of the item.

Customers	Purchases	Items	New Customer	New Purchase	New Item
Items					
ID	Name	Category	Size	Color	
0	Backpack	Accessories	L	Beige	
1	Backpack	Accessories	L	Black	
2	Backpack	Accessories	L	Blue	
3	Backpack	Accessories	L	Brown	
4	Backpack	Accessories	L	Cyan	
5	Backpack	Accessories	L	Gold	
6	Backpack	Accessories	L	Green	
7	Backpack	Accessories	L	Indigo	
8	Backpack	Accessories	L	Lavender	
9	Backpack	Accessories	L	Magenta	
10	Backpack	Accessories	L	Olive	

Figure 3: Item Listing

Paging Controls

As mentioned above, each of the preceding listings are shown in lists of 50 elements at a time. An example of the paging controls (from the bottom of Customers) is shown here.

Paging Controls

View and Editing Pages

Customer View

The Customer View page can be accessed by selecting the customer's ID button in the Customers page. This page shows the Customer ID in the header, and displays all of the information for that customer:

- **Age:** The age of the customer.
- **Gender:** The gender of the customer.
- **Subscription Status:** Indicates whether the customer is a subscriber or not.
- **Previous Purchases:** The number of previous purchases made by the customer.
- **Payment Method:** The preferred payment method of the customer.
- **Frequency Name:** The frequency of purchases made by the customer.
- **Location Name:** The location of the customer.

Customers
Purchases
Items
New Customer
New Purchase
New Item

Customer #1

Field	Value
Age	55
Gender	Male
Subscription Status	Yes
Previous Purchases	14
Payment Method	Venmo
Frequency Name	Fortnightly
Location Name	Kentucky

Edit Delete

Purchases

ID	Item	Amount	Season	Rating	Payment Method	Shipping Type	Discount	Promo Code Used
1	Blouse	53.00	Winter	3.1	Credit Card	Express	Yes	Yes
3902	kaftan	10.00	Fall	1.0	Bank Transfer	2-Day Shipping	Yes	Yes

Figure 4: Customer View

Under the customer information, the purchases made by that customer are displayed. These contain the same information as the Purchases page, but only for the current Customer. The information for each purchase can be viewed by selecting the purchase ID button.

Note that the Customer view also has a **Delete** button. This can be used to remove the customer from the database.

Selecting the “Edit” button will take you to the Customer Edit page, where the information can be editing using the same layout as the Customer View page. The “Save” button will save the changes to the database, and the “Cancel” button will take you back to the Customer View page without saving any changes.

Examples of the Customer Edit and New Customer screens are shown here:

CustomersPurchasesItems

New CustomerNew PurchaseNew Item

Customer #1

Field	Value
Age	<input type="text" value="55"/>
Gender	<input type="text" value="Male"/>
Subscription Status	<input type="text" value="Yes"/>
Previous Purchases	<input type="text" value="14"/>
Payment Method	<input type="text" value="Venmo"/>
Frequency Name	<input type="text" value="Fortnightly"/>
Location Name	<input type="text" value="Kentucky"/>

SaveCancel

New Customer Screen

Purchase View

The Purchase View page can be accessed by selecting the purchase ID button in the Purchases page. This page shows the Purchase ID in the header, and displays all of the information for that purchase:

- **Customer:** The ID of the customer who made the purchase. Select this button to view the information for that customer.
- **Item:** The name of the item purchased. The category, size, and color of the item are displayed to the right.
- **Amount:** The amount of the purchase.
- **Season:** The season in which the purchase was made.
- **Rating:** The numerical rating given to the purchase by the customer.
- **Payment Method:** The payment method used for the purchase.
- **Shipping Type:** The shipping type used for the purchase.
- **Discount:** Indicates whether a discount was applied to the purchase.
- **Promo Code Used:** Indicates whether a promo code was used for the purchase.

Customers
Purchases
Items
New Customer
New Purchase
New Item

Purchase #1

Field	Value
Customer:	1
Item:	Blouse Clothing L Gray
Amount:	53.00
Season:	Winter
Rating:	3.1
Payment Method:	Credit Card
Shipping Type:	Express
Discount:	Yes
Promo Code Used:	Yes

Edit
Delete

Figure 5: Purchase View

This screen also has a **Delete** button. This can be used to remove the purchase from the database. Note that if the purchase is referenced by a customer, then attempting to remove it will lead to an error page.

Selecting the “Edit” button will take you to the Purchase Edit page, where the information can be editing using the same layout as the Purchase View page. Note that most of these values are dropdowns, and the values are limited to those in the database.

The “Save” button will save the changes to the database, and the “Cancel” button will take you back to the Purchase View page without saving any changes.

Purchase Edit Screen

New Purchase Screen

Item View

The Item View page can be accessed by selecting the item ID button in the Items page. This page shows the Item ID in the header, and displays all of the information for that item:

- **Name:** The name of the item.
- **Category:** The category of the item.
- **Size:** The size of the item.
- **Color:** The color of the item.

CustomersPurchasesItems

New CustomerNew PurchaseNew Item

Item #0

Field	Value
Name	Backpack
Category	Accessories
Size	L
Color	Beige

EditDelete

Figure 6: Item View

This screen also has a **Delete** button. This can be used to remove the item from the database. Note that attempting to remove an item that is referenced by any purchases, will lead to an error page.

Selecting the “Edit” button will take you to the Item Edit page, where the information can be editing using the same layout as the Item View page. Selecting the “Save” button will save the changes to the database, and the “Cancel” button will take you back to the Item View page without saving any changes.

Item Edit Screen

New Item Screen

Data

The schema is in [data/definitions.sql](#)

The data is found in [data/data.sql](#)