

## **Entities:**

**Customers:** records all details associated with Customers who purchase plants from RR Black Finger Market

- Relationships:
  - A one to many relationship between Addresses and Customers. An address can belong to many customers but a customer can only have one address. Implemented with address\_id as a Foreign Key inside Customers.
- customer\_id:
  - int, auto\_increment, unique, not NULL, Primary Key
- address\_id:
  - int, can be NULL, Foreign Key from Addresses
- email:
  - varchar, NOT NULL
- first\_name:
  - varchar, not NULL
- last\_name:
  - varchar, not NULL
- phone:
  - varchar, not NULL

**Addresses:** record the address of Customers

- Relationships:
  - A one to many relationship between Addresses and Customers. An address can belong to many customers but a Customer can only have one address. Implemented with address\_id as a Foreign Key inside Customers.
- address\_id:
  - int, auto\_increment, unique, not NULL, Primary Key
- street:
  - varchar, not NULL
- city:
  - varchar, not NULL
- state:
  - varchar, not NULL

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- zip:
  - int, not NULL

**Orders:** records all financial details of individual Orders.

- Relationships:
  - A one to many relationship between Customers and Orders. A Customer has at least one Order, but an Order must be associated with only one Customer. Implemented with customer\_id as Foreign Key inside Orders.
- order\_id:
  - int, auto\_increment, unique, not NULL, Primary Key
- customer\_id:
  - int, not NULL, Foreign Key from Customers
- total\_cost:
  - float, not NULL

**Plants:** records all details associated with Plants in stock at RR Black Finger Market.

- Relationships:
  - A many to many relationship between Plants and Orders. A Plant can be in zero or many Orders, and an Order has at least one Plant. Implemented in Plants\_Orders table.
- plant\_id:
  - int, auto increment, unique, not NULL, Primary Key
- genus:
  - varchar, not NULL
- variety:
  - varchar, not NULL
- cost:
  - float, not NULL
- stock:
  - int, not NULL

**Many to Many Relationship tables:**

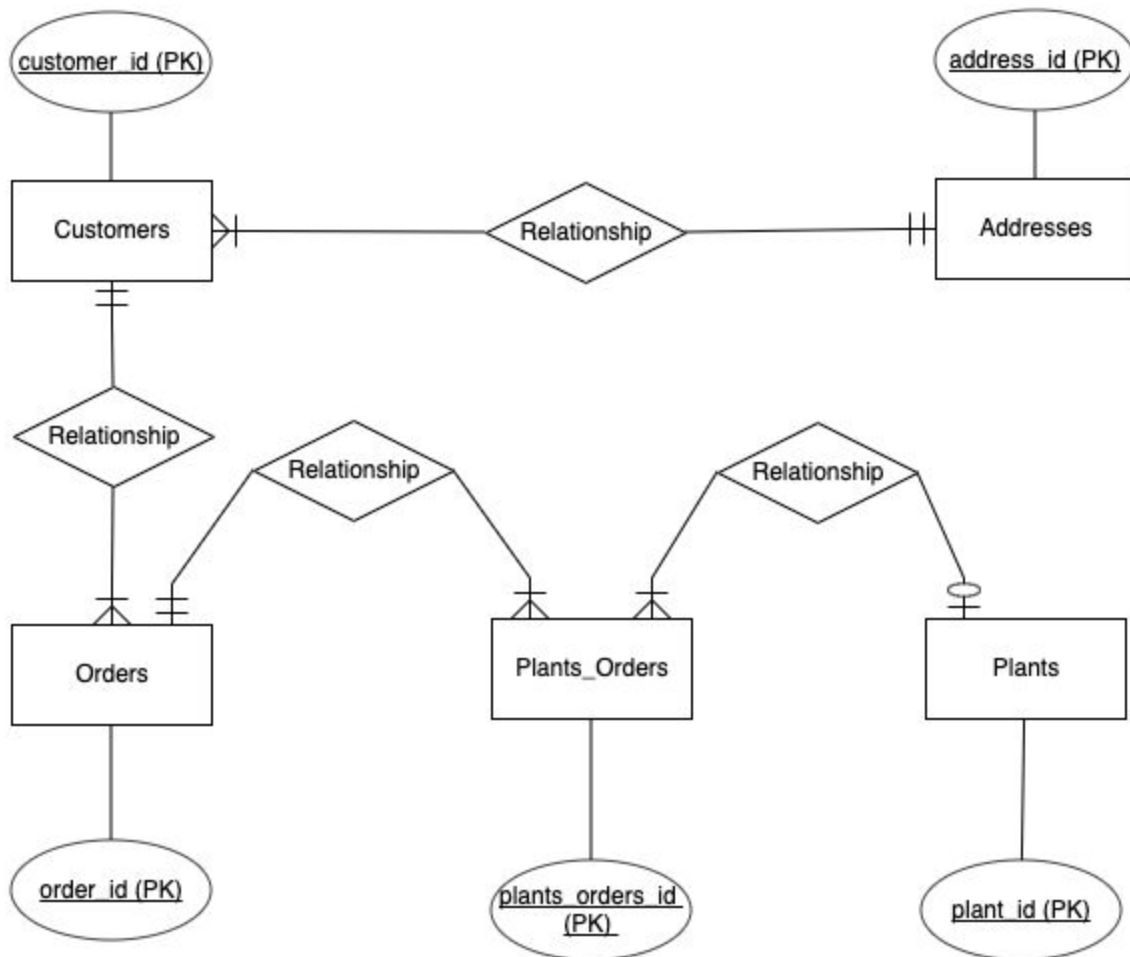
**Plants\_Orders:** represents the relationship between Plants and Orders. We need a way to keep track of the different plants that go into each order. There can be many different plants in each order. There can also be many orders that have the same plant.

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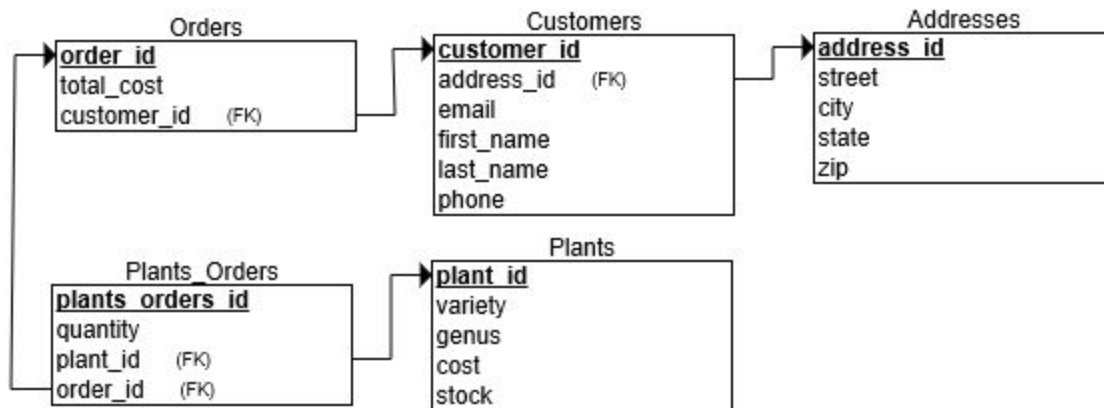
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- Relationships:
  - A many to many relationship between Plants and Orders. A Plant can be in between 0 and many Orders. An Order can have one or more Plants. Implemented with the Foreign Keys `plant_id` and `order_id`.
- `plants_orders_id`:
  - `int`, auto increment, unique, not NULL, Primary Key
- `order_id`:
  - `int`, not NULL, Foreign Key from Orders
- `plant_id`:
  - `int`, Foreign Key from Plants
- `quantity`:
  - `int`, not NULL

**Entity-Relationship Diagram:**



### Schema



## UI Screenshots

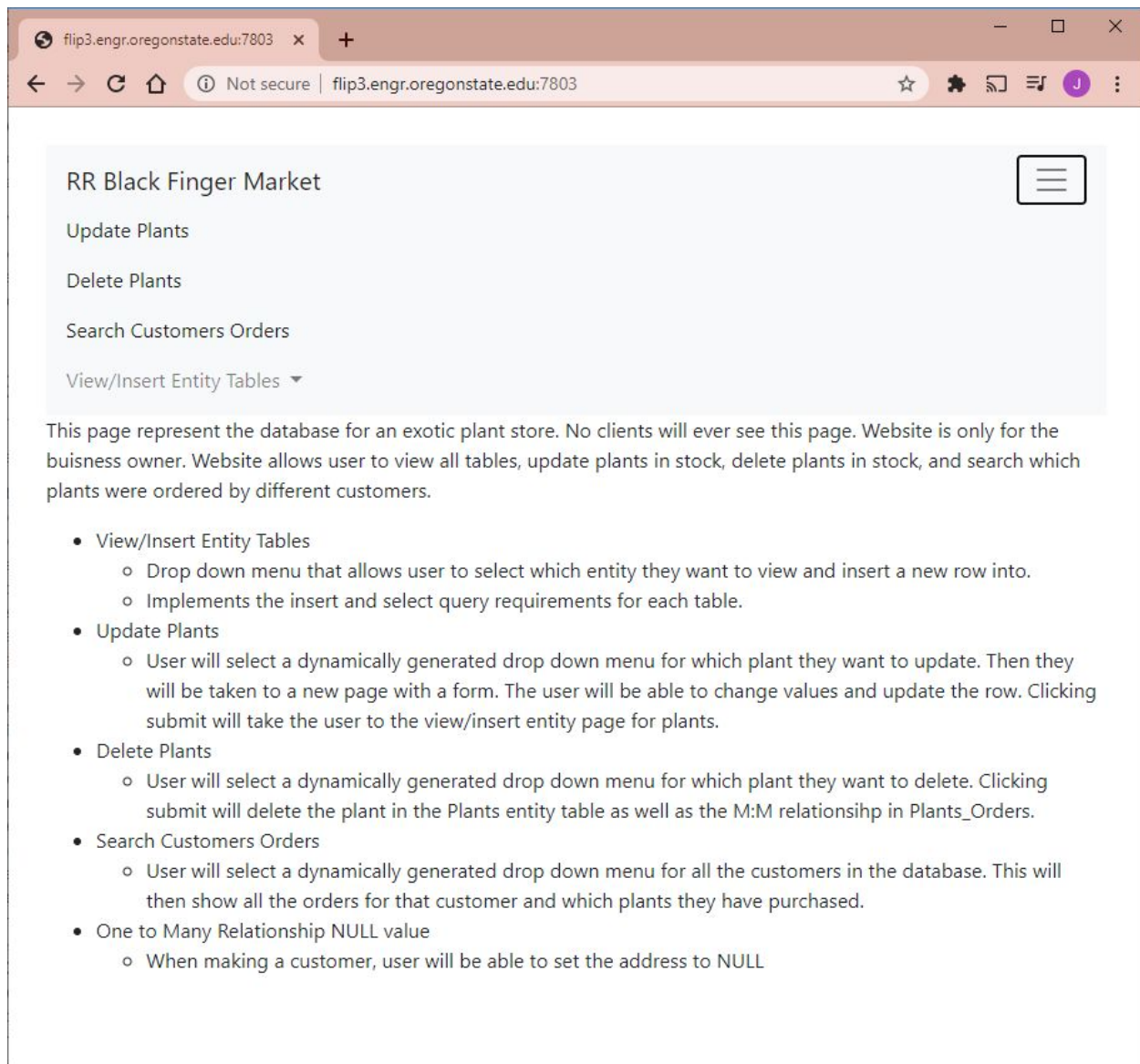
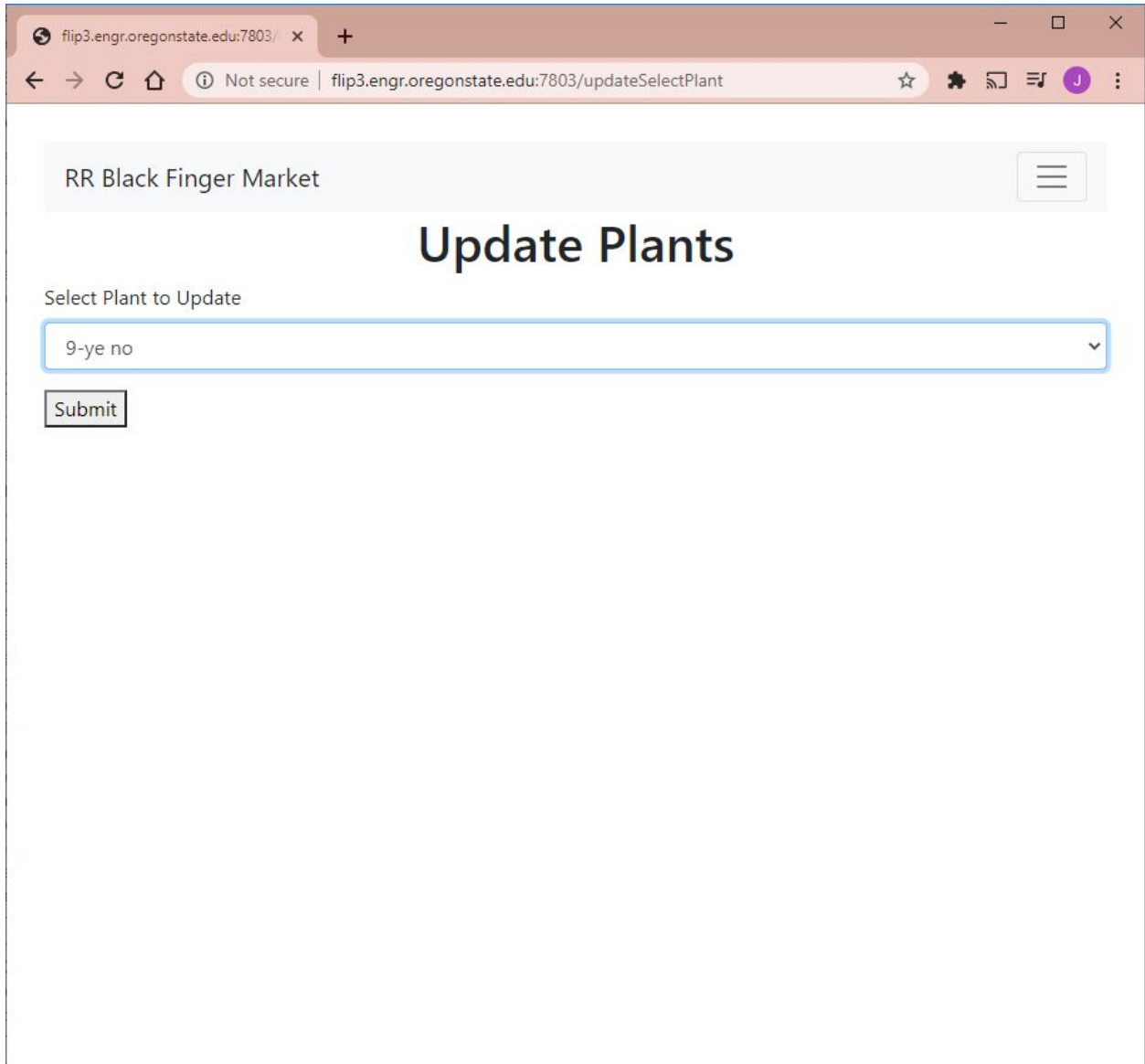


Image 1: index page showing functionality and drop-down menu for navigation



RR Black Finger Market

## Update Plants

Select Plant to Update

9-ye no

Submit

Image 2: Update plants interface with selection for the plant the user wishes to have updated shown in a drop down bar. Once selected, the user is able to indicate the new values in the fields as shown in image 3.

RR Black Finger Market

## Update Plants

Genus

Variety

Cost

Stock

Image 3: UPDATE PLANTS -- includes fields for which the user is able input values that are to be updated for the selected item from Image 2. When submitted, the user is directed to the View Plants page which shows the records of the plants table (Image 4)



The screenshot shows a web browser window with the address bar displaying 'flip3.engr.oregonstate.edu:7803/'. The page title is 'RR Black Finger Market'. Below the title is a hamburger menu icon. The main content area is divided into two sections: 'View Plants' and 'Insert Plant'.

**View Plants**

Plant ID	Genus	Variety	Cost	Stock
9	ye	no	21	431
13	plant	not cold	31	534

**Insert Plant**

Genus

Variety

Cost

Stock

Image 4: INSERT/DISPLAY PLANTS -- the page shows the records in the plants table. Also on this page is an insert option for creating a new record in the plants table. Upon submission, the page updates to show all the records in the plants table including the newest insert.

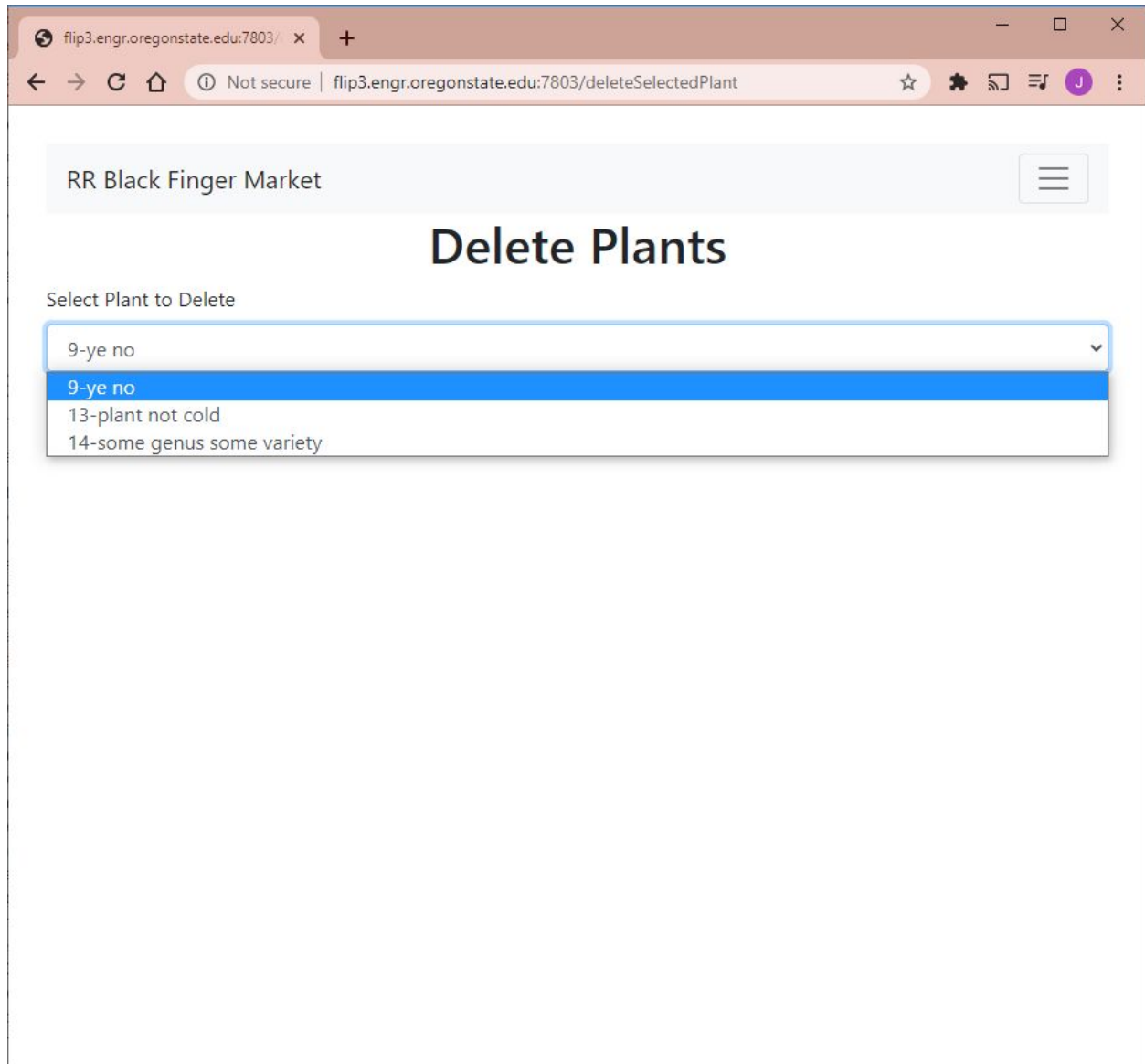


Image 5: DELETE PLANTS -- In a similar manner to the Update plants, Delete plants has the same selection type using a drop down. When a plant is selected and submitted, the user is redirected to the View plants page where the table no longer contains the plant that was deleted.

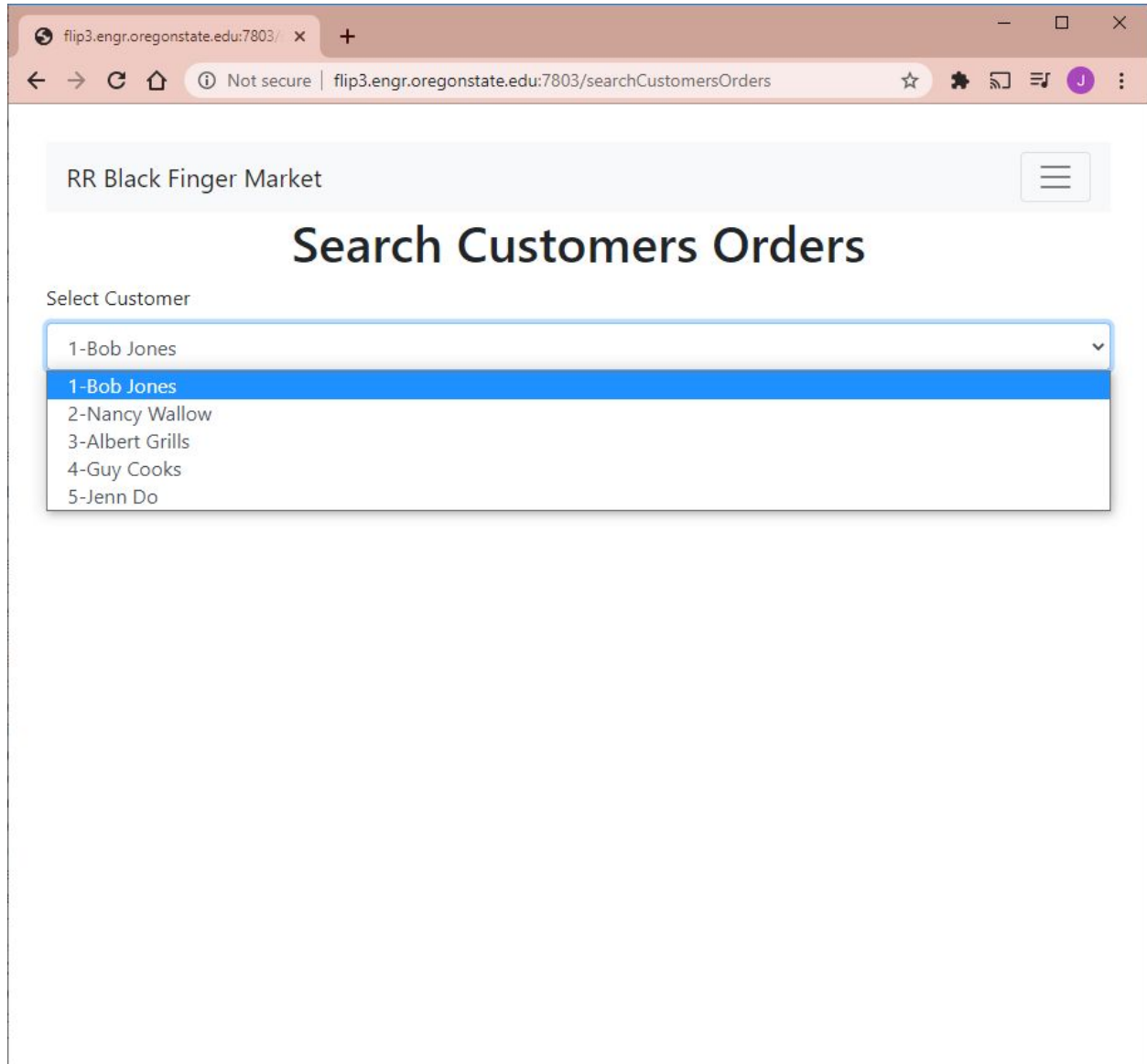
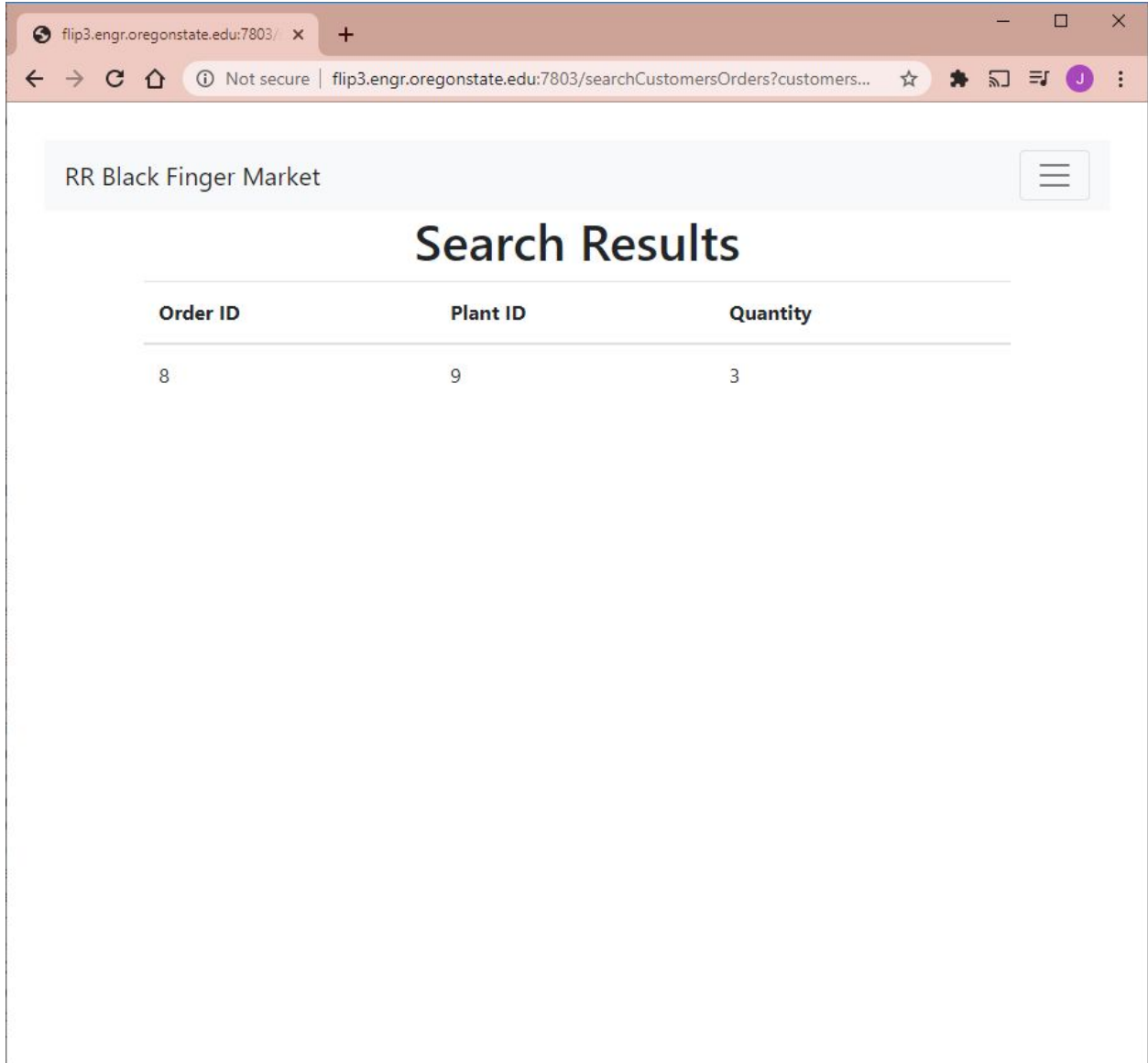


Image 6: SEARCH CUSTOMER ORDERS -- The search customers orders page selection is similar to that of the update and delete plants selection pages with the drop down menu. Upon selection, the user is redirected to a page showing the M:M table of the orders and plants that is associated with the customer.

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The screenshot shows a web browser window with the address bar displaying 'flip3.engr.oregonstate.edu:7803/'. The page title is 'RR Black Finger Market'. Below the title, there is a 'Search Results' heading. A table with three columns: 'Order ID', 'Plant ID', and 'Quantity' is displayed. The table contains one row with the values 8, 9, and 3 respectively. The browser's address bar shows the URL 'flip3.engr.oregonstate.edu:7803/searchCustomersOrders?customers...'. The browser's status bar shows 'Not secure'.

Order ID	Plant ID	Quantity
8	9	3

Image 7: DISPLAY SEARCH CUSTOMER ORDERS -- An example of search results considering customer Bob Jones

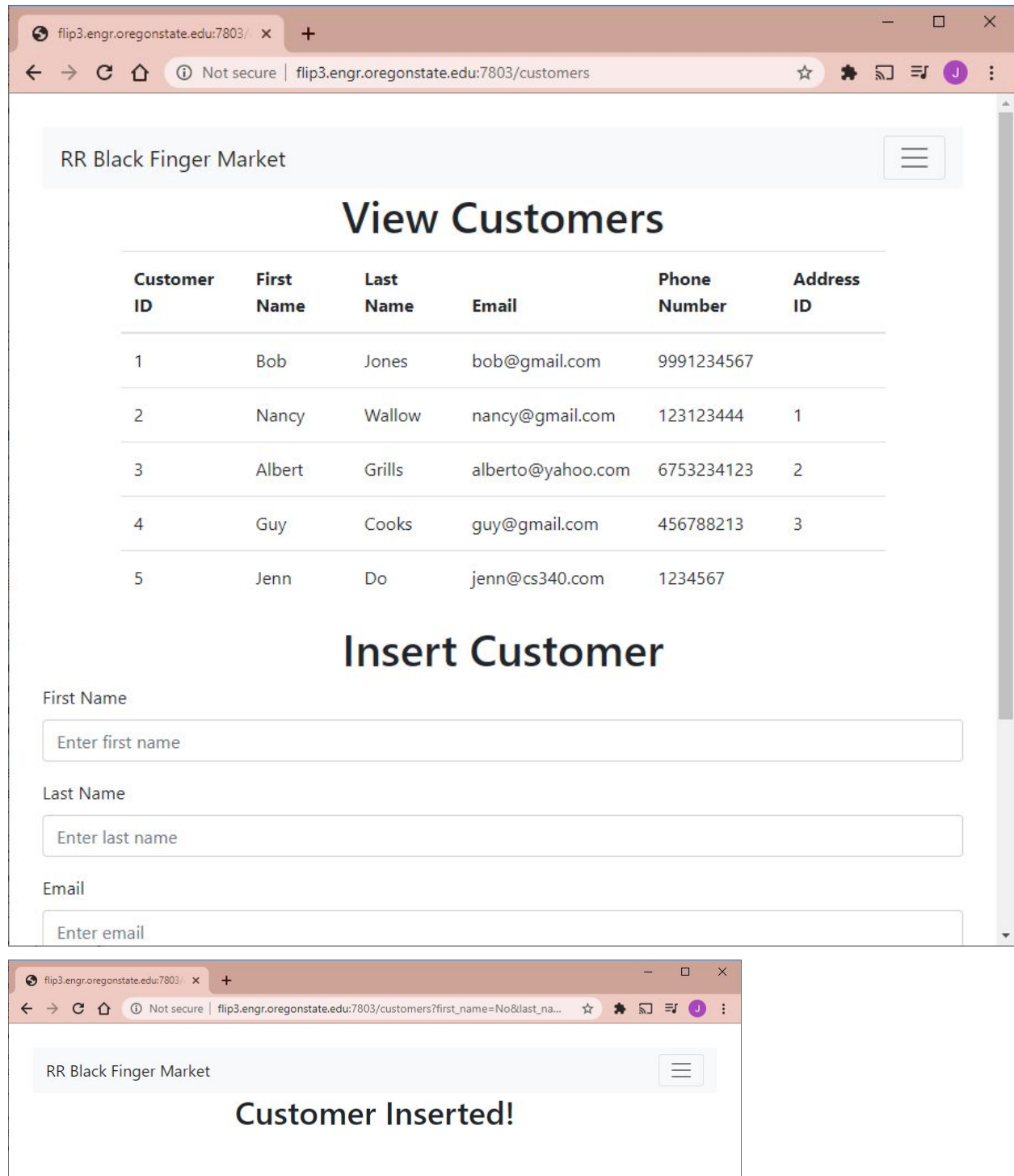


Image 8: INSERT/DISPLAY CUSTOMERS -- the page shows the records in the customers table. Also on this page is an insert option for creating a new record in the customers table. Upon submission, the user is directed to a confirmation page indicating insertion completion.

Address ID	Street	City	State	Zip
1	1100 63rd Street	Sacramento	CA	95820
2	3450 Ablerta Blvd	Portland	OR	99421
3	9861 Big Drive Way	Tulsa	AZ	65491
4	6532 Cold Place Street	Chico	CA	98765
5	123 Ocean Blvd	Long Beach	CA	90802

**Insert Address**

Street  
1234 Main St

City  
City

State  
CA

Zip  
Zip code

Submit

**Address Inserted!**

Image 9: INSERT/DISPLAY ADDRESSES -- the page shows the records in the addresses table. Also on this page is an insert option for creating a new record in the addresses table. Upon submission, the user is directed to a confirmation page indicating insertion completion.

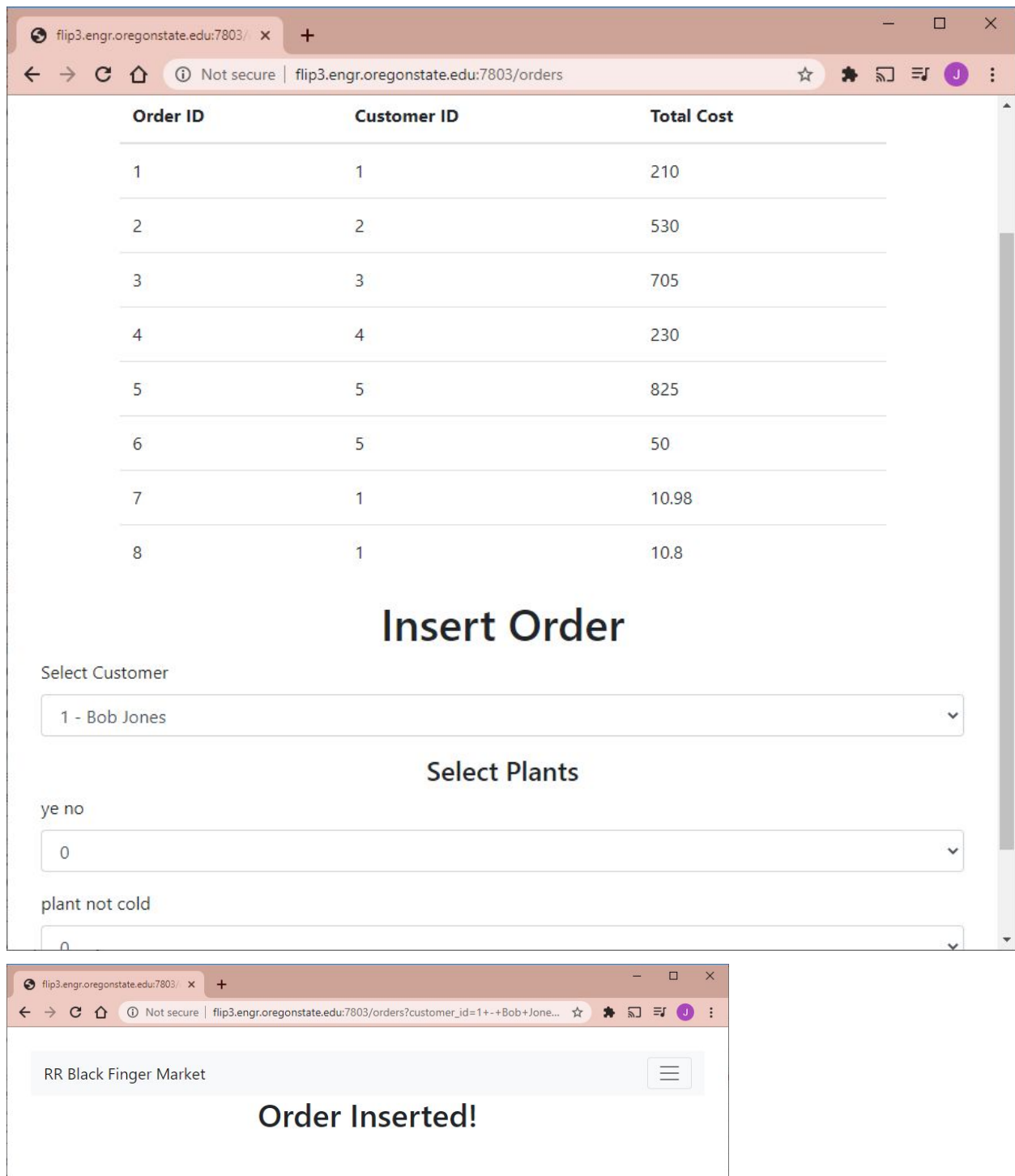


Image 10: INSERT/DISPLAY Orders -- the page shows the records in the orders table. Also on this page is an insert option for creating a new record in the orders table. Upon submission, the user is directed to a confirmation page indicating insertion completion.