38 Cupcakes

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Website URL: http://classwork.engr.oregonstate.edu:35117/index

Executive Summary

- We fixed our naming conventions for it to be more consistent after getting feedback on step 1 that singular/plural as well as capitalization inconsistencies were present.
- Throughout the project, we changed some incorrect data types from our initial draft as well as replacing some data types for it to match better with our database.
- The reviews left suggestions for changing certain relationships between entities such as customers to orders or workers to orders. We decided to follow these suggestions as they fit our project and goals better.In the relationship between customers and orders, participation of orders changed from mandatory to optional. Then, the relationship between workers to orders changed from M:M to 1:M
- Removing the Ingredients table; unnecessary table that adds confusion. Removing it completely would not affect other entities that much and helps make the database cleaner.
- We changed a few things to include cupcakeID and ordersID as a foreign key. Having cupcakeId as a FK in orders means an order would only be able to contain one kind of cupcake. We didn’t want that and wanted to consider the case where a customer can order multiple types of cupcakes in a single order.
- We edited our old ERD, which contained all attributes and intersection tables, and used that as our schema. Then we created a much more simplified ERD that only contained entities and primary keys.
- Removed numMade and numSold on our Cupcakes table entirely after a review pointed out that it does not belong in this entity because it depended on orders and would change more frequently than other attributes in this entity.
- Although the primary keys were already automatically incrementing, we decided to include the “NOT NULL” flag to ensure that NULL would not be a valid primary key.
- Instead of displaying the table for all of CRUD, we only did it when creating a new entry. When creating a new entry the user will be able to look at previous entries to follow any naming patterns, styles, etc. The user only needs to see this when creating a new entry, not updating or deleting.
- Changing cupcakes to orders relationship from M:1 to M:M and adding intersecting table CupcakesOrdered
- Modified the sample data to include NULL attributes to show what is NULLable
- The form for INSERT was moved to the top of the UI (above the table) to take larger tables into consideration
- Drop down menus for Orders FKs customerID and workerID changed to display the ID and last name, instead of first and last name
- We decided to switch from using public.html to using app.js and node.js to be able to CRUD dynamically, which affected parts of the UI

Project and Database Outline

Overview:

38 Cupcakes is a relatively new business that sells cupcakes in various different flavors and colors. Previously, we were tracking orders using pen and paper. As sales are increasing, our current system is unable to keep up, and we needed to move to a digital database to keep track of logistics. After the changes, 38 Cupcakes is projected to sell $500,000 in cupcakes annually. The database website will keep customer information and tie it with individual orders. It would also contain a master table of cupcakes which lists availability and the various kinds of cupcakes ready to sell based on the flavor, color, and frosting. This master table would also contain the stock amounts, so each order would decrease the availability. Furthermore, it would also keep track of the employees/workers in the shop, directly tied into each order made.

Outline:

- Customers - Entity: Records customers' information
    - customerID: int PK not null auto_inc
    - firstName: varchar(20) not null
    - lastName: varchar(20) not null
    - email: varchar(45)
    - phoneNum: varchar(20)

    - Relationships
        - Orders (1:M): a customer can have many orders, but can exist without an order

- Orders - Entity: Records incoming orders' information
    - orderID: int PK not null auto_inc
    - customerID: int FK not null
    - workerID: int FK
    - datePlaced: date not null
    - datePickedup: date
    - totalPrice: decimal(19,2) not null

    - Relationships
        - Customers (M:1): the orders taken from a customer
        - Workers (M:1): orders assigned to a worker
        - Cupcakes (M:M): an order can contain many cupcakes, shown through the CupcakesOrdered table

- Workers - Entity: Records workers' information
    - workerID: int PK not null auto_inc
    - firstName: varchar(20) not null
    - lastName: varchar(20) not null
    - email: varchar(45)

- phoneNum: varchar(20)

- Relationships
  - Orders (1:M): a worker is responsible for completing order(s), but can exist without an order

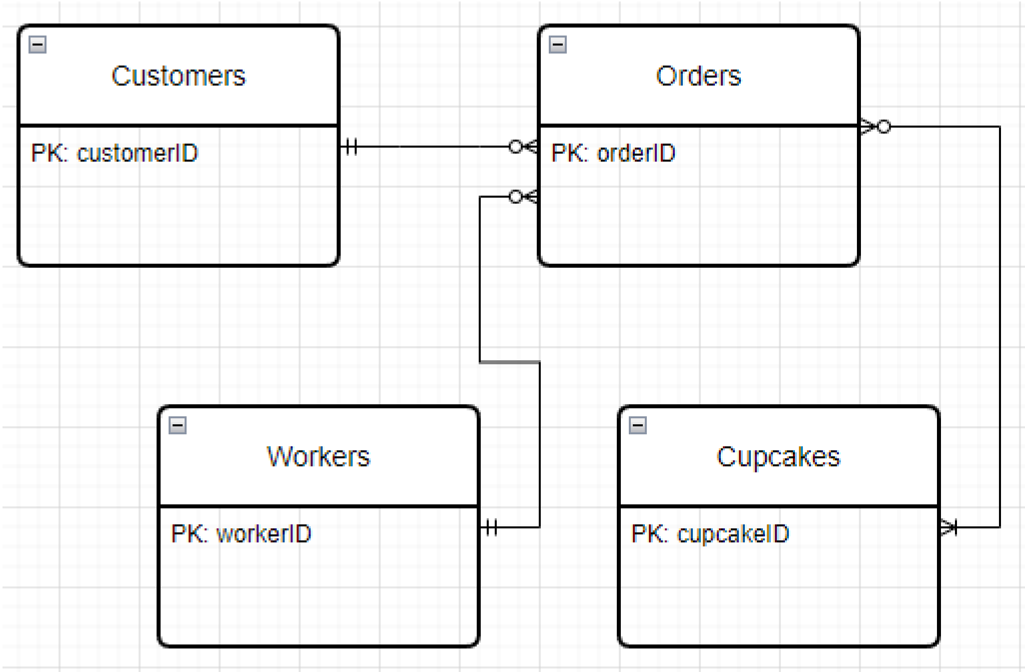
- Cupcakes - Entity: Records information of cupcakes on sale
  - cupcakeID: int PK not null auto_inc
  - cakeFlavor: varchar(25) not null
  - frostingFlavor: varchar(25) not null
  - cakeColor: varchar(20)
  - frostingColor: varchar(20)
  - price: decimal(19,2) not null

  - Relationships
    - Orders (M:M): many types of cupcakes can be in multiple orders, shown through CupcakesOrdered table

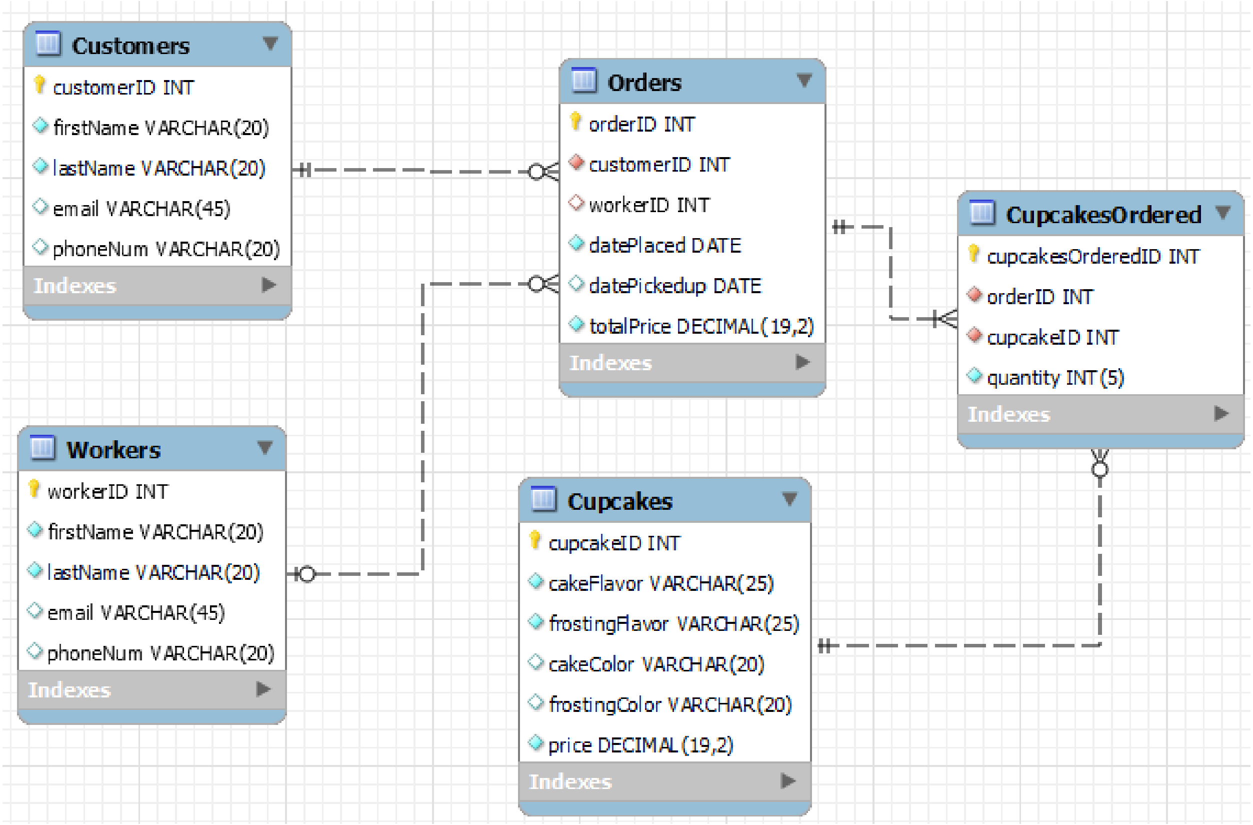
- CupcakesOrdered - Intersection Table: supports M:M relationship between cupcakes and orders
  - cupcakesOrderedID: int PK not null auto_inc
  - orderID: int FK not null
  - cupcakeID: FK not null
  - quantity: int(5) not null

  - Relationships
    - Cupcakes (M:1): how much of each cupcake is ordered
    - Orders (M:1): an order can contain multiple different types of cupcakes

Entity-Relationship Diagram:



Schema:



Customers
customerID INT
firstName VARCHAR(20)
lastName VARCHAR(20)
email VARCHAR(45)
phoneNum VARCHAR(20)
Indexes

Orders
orderID INT
customerID INT
workerID INT
datePlaced DATE
datePickedup DATE
totalPrice DECIMAL(19,2)
Indexes

CupcakesOrdered
cupcakesOrderedID INT
orderID INT
cupcakeID INT
quantity INT(5)
Indexes

Workers
workerID INT
firstName VARCHAR(20)
lastName VARCHAR(20)
email VARCHAR(45)
phoneNum VARCHAR(20)
Indexes

Cupcakes
cupcakeID INT
cakeFlavor VARCHAR(25)
frostingFlavor VARCHAR(25)
cakeColor VARCHAR(20)
frostingColor VARCHAR(20)
price DECIMAL(19,2)
Indexes

Sample Data:

Customers:

customerID	firstName	lastName	email	phoneNum
1	Steven	Lee	lsteven@hello.com	505-584-192
2	John	Smith	sjohn@hello.com	555-730-183
3	Brenda	Gates	gbrenda@hello.com	564-104-769

Orders:

orderID	customerID	workerID	datePlaced	datePickedup	totalPrice
1	3	2	2024-01-30	2024-02-07	50.00
2	1	1	2023-12-04	2023-12-11	35.00
3	2	NULL	2023-12-20	2023-12-27	45.00

Workers:

workerID	firstName	lastName	email	phoneNum
1	Kevin	Juanda	jkevin@hello.com	521-759-318
2	Skyler	Ucol	uskyler@hello.com	531-872-375
3	Jenny	Kim	kjenny@hello.com	543-982-736

Cupcakes:

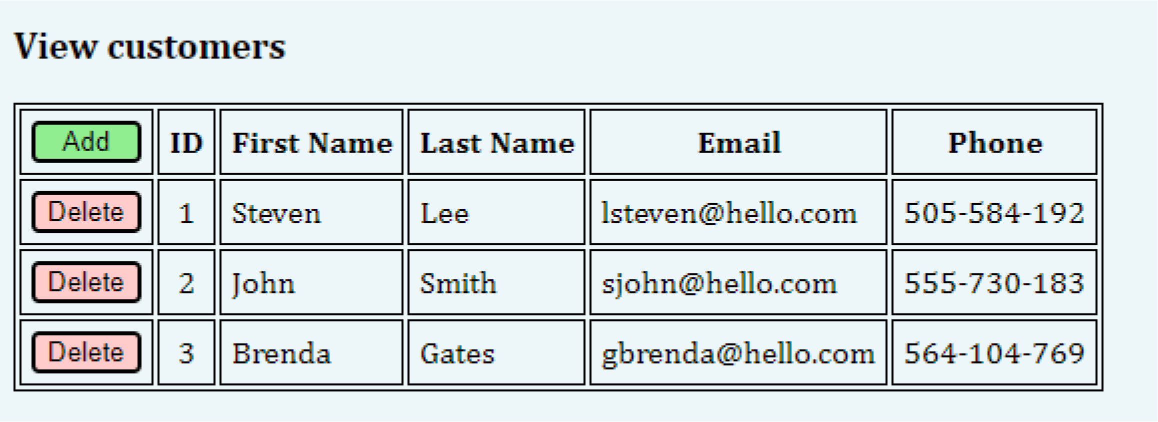
cupcakeID	cakeFlavor	frostingFlavor	cakeColor	frostingColor	price
1	Vanilla	Strawberry	White	Red	5.00
2	Mint Oreo	Peanut Butter	Black	Brown	10.00
3	Mocha	Red Velvet	Brown	Red	15.00
4	Chocolate	Oreo	NULL	NULL	25.00

CupcakesOrdered:

cupcakesOrderedID	orderID	cupcakeID	quantity
1	1	2	5
2	2	2	7
3	3	1	9

UI Screenshots

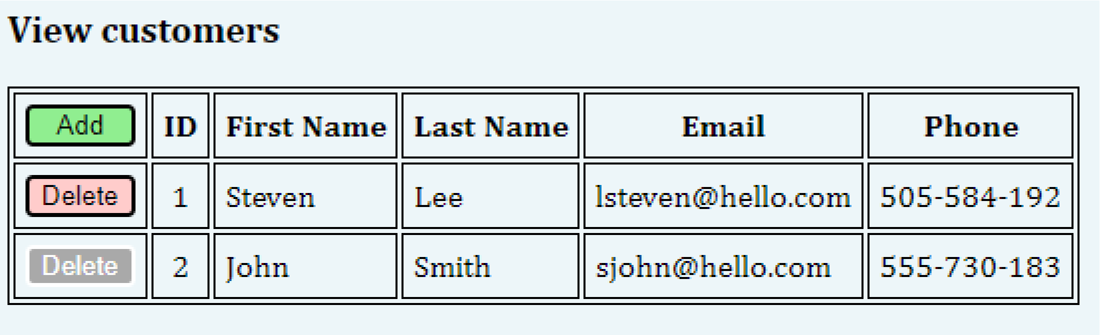
READ/DISPLAY Customers page:



View customers

Add	ID	First Name	Last Name	Email	Phone
Delete	1	Steven	Lee	lsteven@hello.com	505-584-192
Delete	2	John	Smith	sjohn@hello.com	555-730-183
Delete	3	Brenda	Gates	gbrenda@hello.com	564-104-769

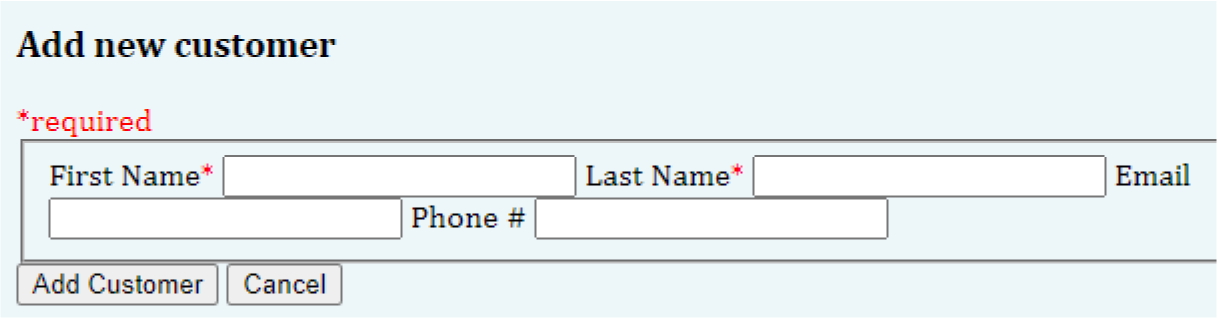
DELETE Customers page:



View customers

Add	ID	First Name	Last Name	Email	Phone
Delete	1	Steven	Lee	lsteven@hello.com	505-584-192
Delete	2	John	Smith	sjohn@hello.com	555-730-183

ADD/CREATE Customers page:

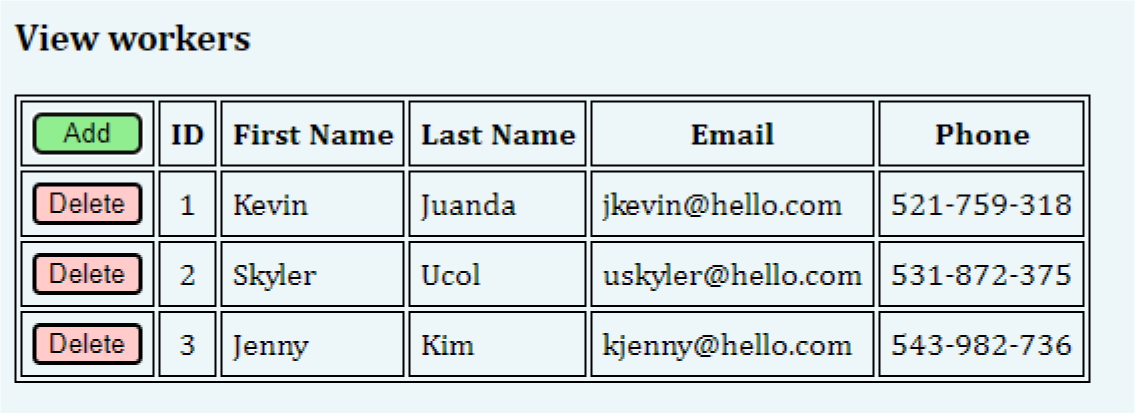


Add new customer

*required

First Name* ______ Last Name* ______ Email ______ Phone # ______

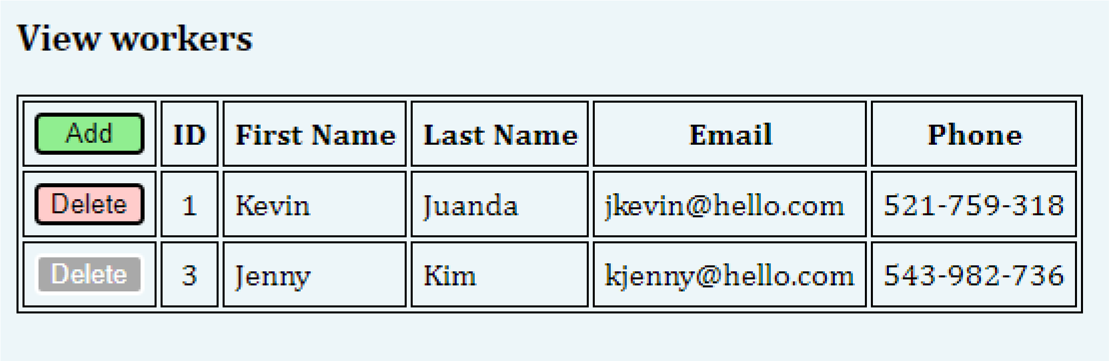
READ/DISPLAY Workers page:



View workers

Add	ID	First Name	Last Name	Email	Phone
Delete	1	Kevin	Juanda	jkevin@hello.com	521-759-318
Delete	2	Skyler	Ucol	uskyler@hello.com	531-872-375
Delete	3	Jenny	Kim	kjenny@hello.com	543-982-736

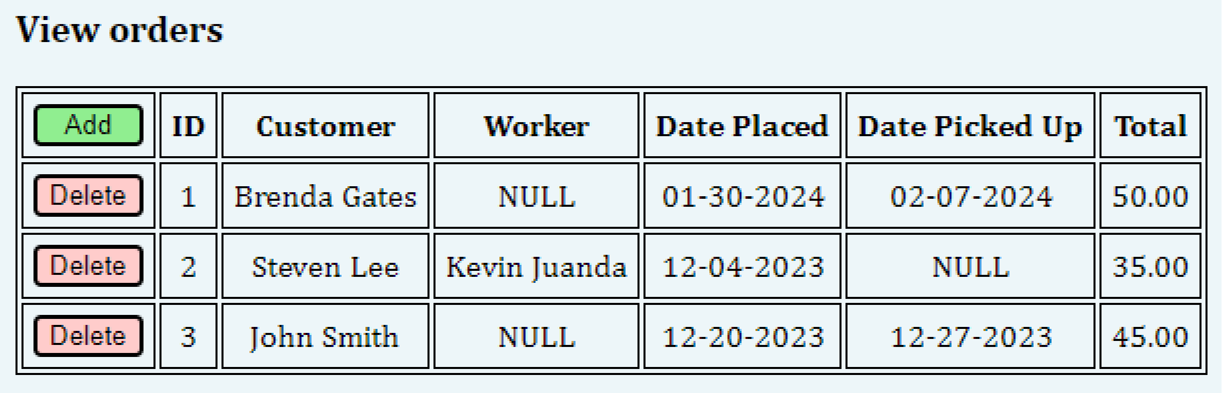
DELETE Workers page:



View workers

Add	ID	First Name	Last Name	Email	Phone
Delete	1	Kevin	Juanda	jkevin@hello.com	521-759-318
Delete	3	Jenny	Kim	kjenny@hello.com	543-982-736

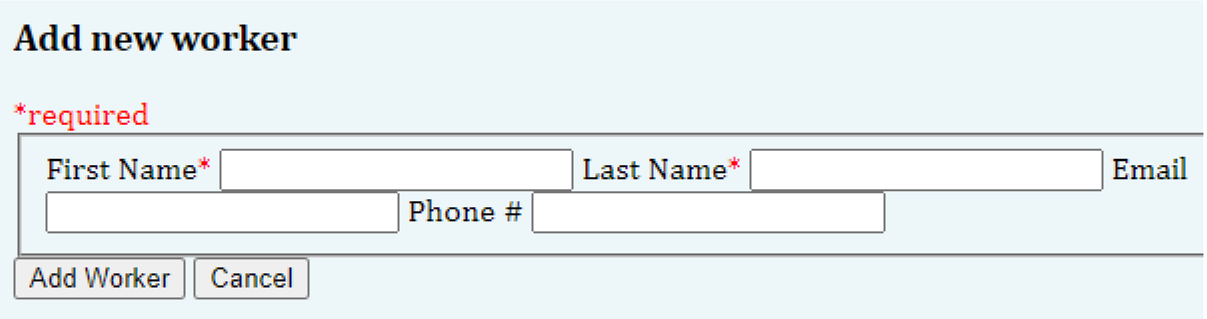
NULLable Relationship (when worker is deleted, FK becomes NULL):



View orders

Add	ID	Customer	Worker	Date Placed	Date Picked Up	Total
Delete	1	Brenda Gates	NULL	01-30-2024	02-07-2024	50.00
Delete	2	Steven Lee	Kevin Juanda	12-04-2023	NULL	35.00
Delete	3	John Smith	NULL	12-20-2023	12-27-2023	45.00

ADD/CREATE Workers page:

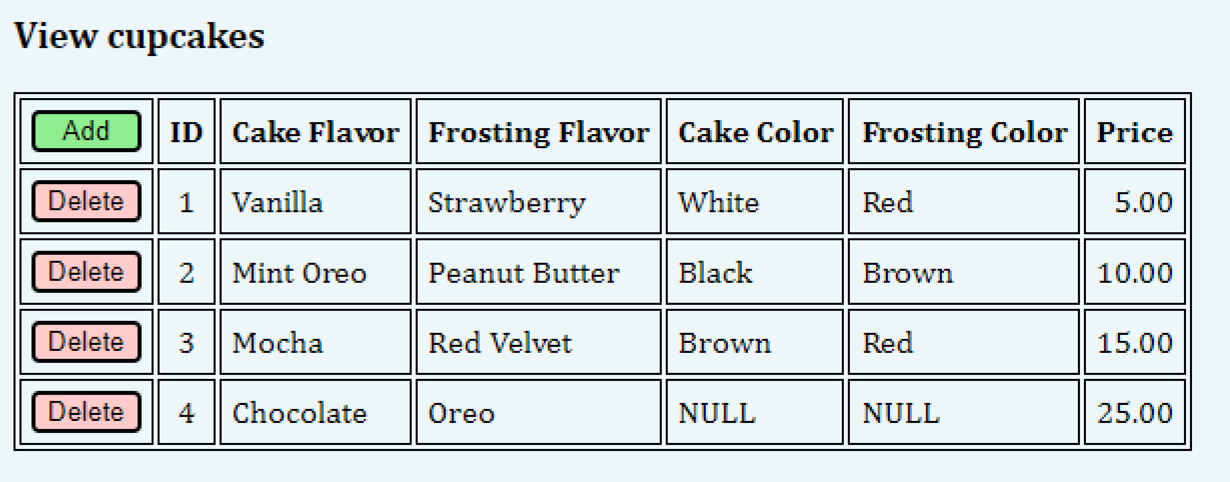


Add new worker

*required

First Name*		Last Name*		Email	
Phone #					

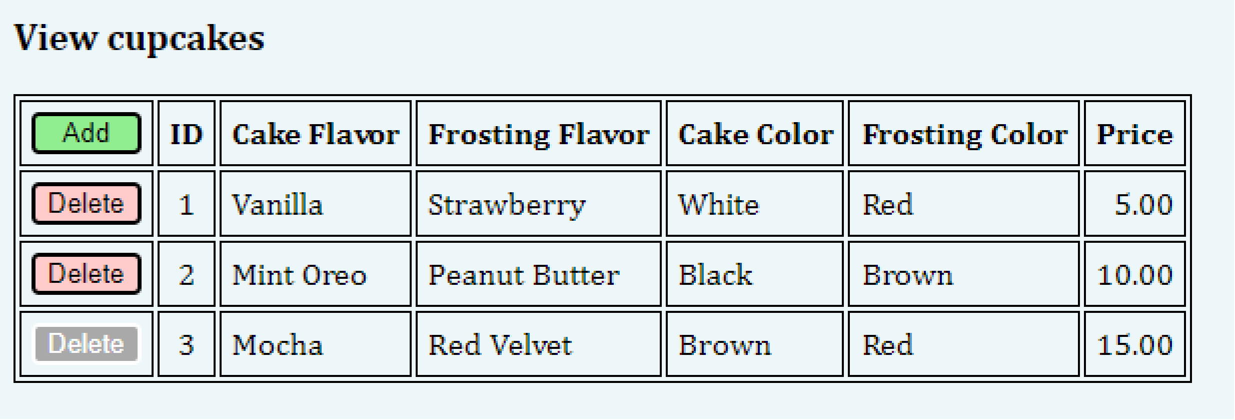
READ/DISPLAY Cupcakes page:



View cupcakes

Add	ID	Cake Flavor	Frosting Flavor	Cake Color	Frosting Color	Price
Delete	1	Vanilla	Strawberry	White	Red	5.00
Delete	2	Mint Oreo	Peanut Butter	Black	Brown	10.00
Delete	3	Mocha	Red Velvet	Brown	Red	15.00
Delete	4	Chocolate	Oreo	NULL	NULL	25.00

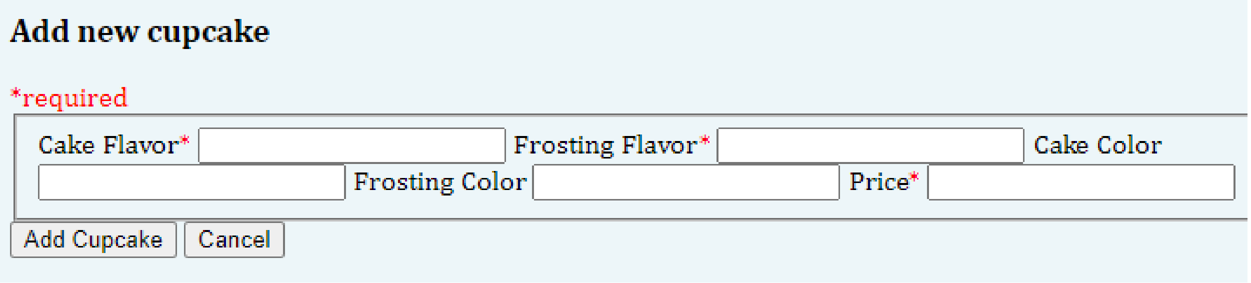
DELETE Cupcakes page:



View cupcakes

Add	ID	Cake Flavor	Frosting Flavor	Cake Color	Frosting Color	Price
Delete	1	Vanilla	Strawberry	White	Red	5.00
Delete	2	Mint Oreo	Peanut Butter	Black	Brown	10.00
Delete	3	Mocha	Red Velvet	Brown	Red	15.00

ADD/CREATE Cupcakes page:

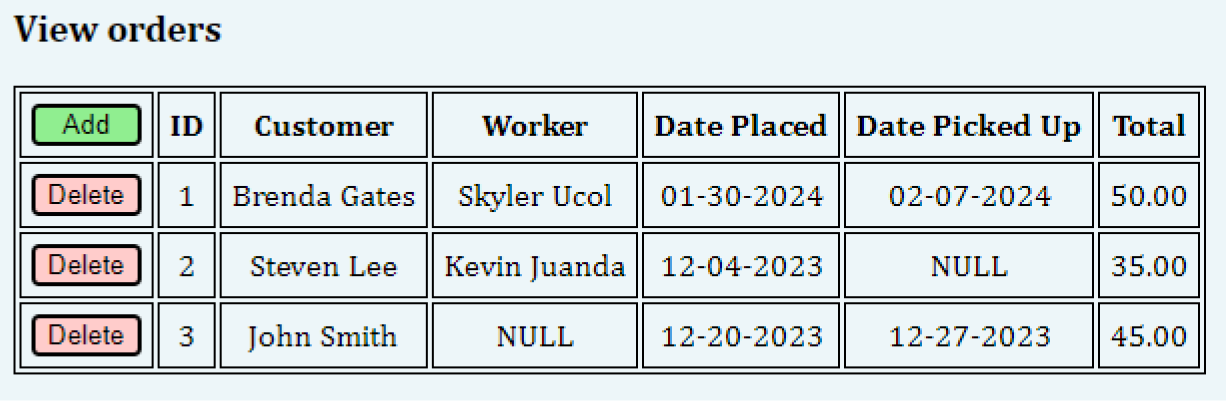


Add new cupcake

*required

Cake Flavor* ______ Frosting Flavor* ______ Cake Color ______ Frosting Color ______ Price* ______

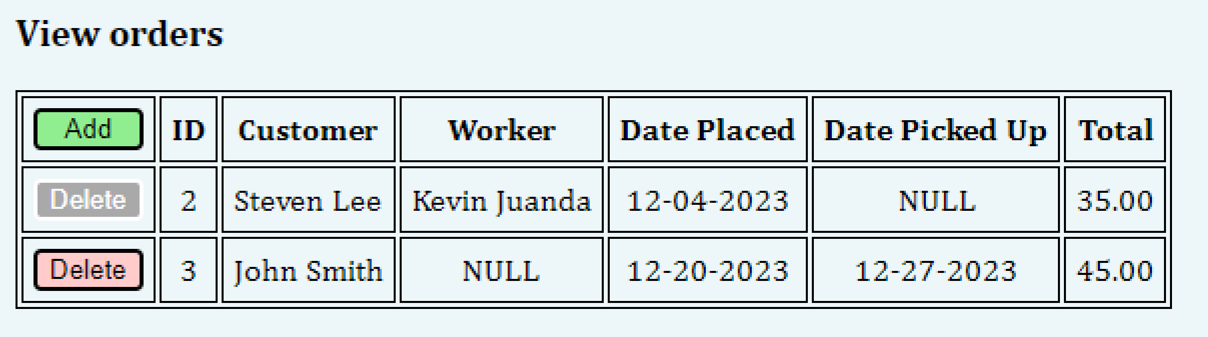
READ/DISPLAY Orders page:



View orders

Add	ID	Customer	Worker	Date Placed	Date Picked Up	Total
Delete	1	Brenda Gates	Skyler Ucol	01-30-2024	02-07-2024	50.00
Delete	2	Steven Lee	Kevin Juanda	12-04-2023	NULL	35.00
Delete	3	John Smith	NULL	12-20-2023	12-27-2023	45.00

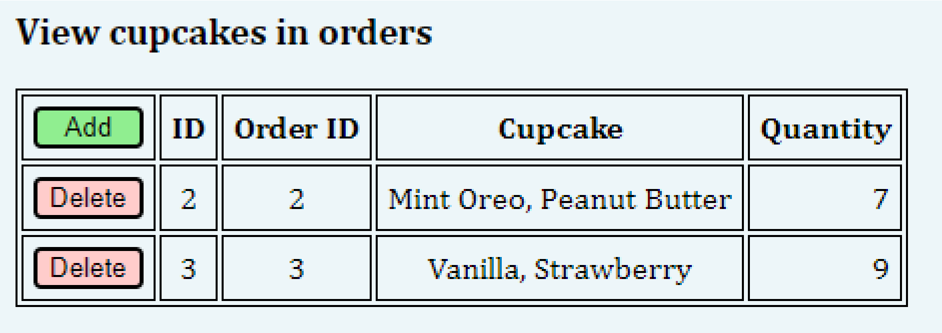
DELETE Orders page (M:N DELETE):



View orders

Add	ID	Customer	Worker	Date Placed	Date Picked Up	Total
Delete	2	Steven Lee	Kevin Juanda	12-04-2023	NULL	35.00
Delete	3	John Smith	NULL	12-20-2023	12-27-2023	45.00

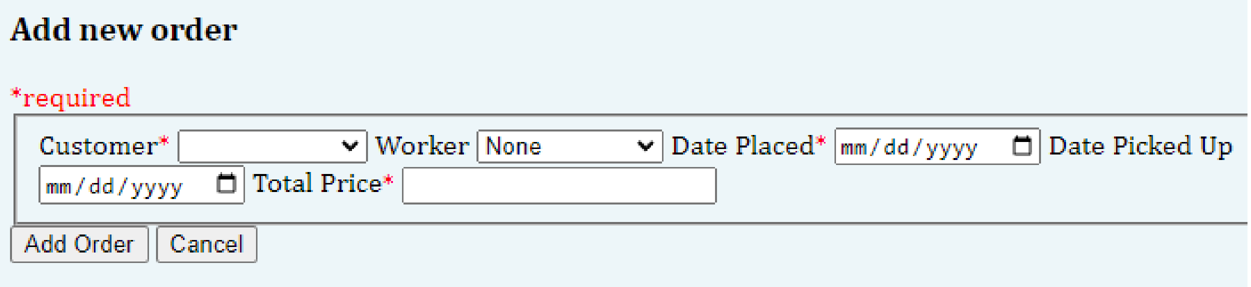
M:N DELETE (deleting order deletes corresponding cupcakesordered):



View cupcakes in orders

Add	ID	Order ID	Cupcake	Quantity
Delete	2	2	Mint Oreo, Peanut Butter	7
Delete	3	3	Vanilla, Strawberry	9

ADD/CREATE Orders page:



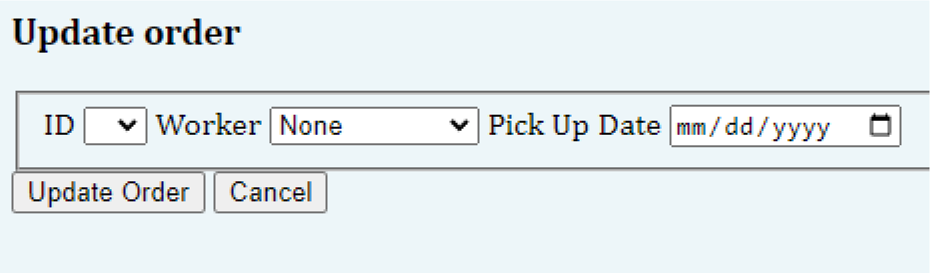
Add new order

*required

Customer* Worker None Date Placed* mm/dd/yyyy Date Picked Up mm/dd/yyyy Total Price*

Add Order Cancel

UPDATE/EDIT Orders page (NULLable Relationship and M:N UPDATE):

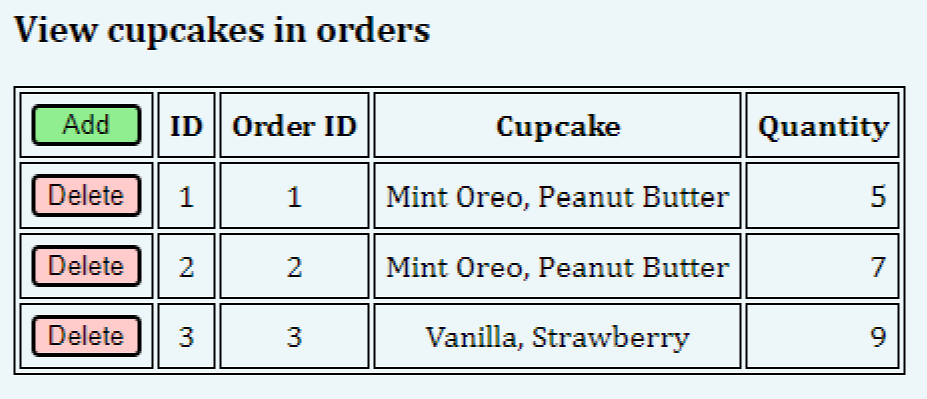


Update order

ID Worker None Pick Up Date mm/dd/yyyy

Update Order Cancel

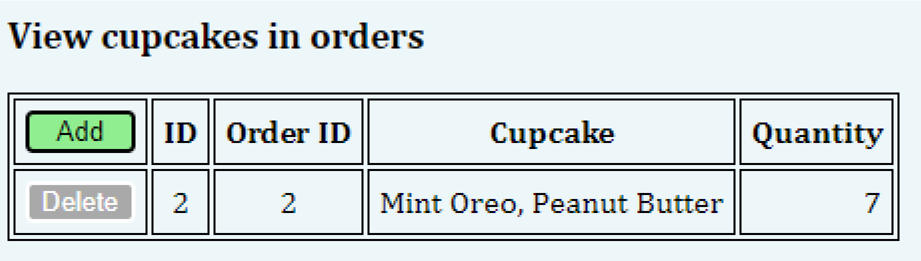
READ/DISPLAY CupcakesOrdered page (M:N Intersection Table):



View cupcakes in orders

Add	ID	Order ID	Cupcake	Quantity
Delete	1	1	Mint Oreo, Peanut Butter	5
Delete	2	2	Mint Oreo, Peanut Butter	7
Delete	3	3	Vanilla, Strawberry	9

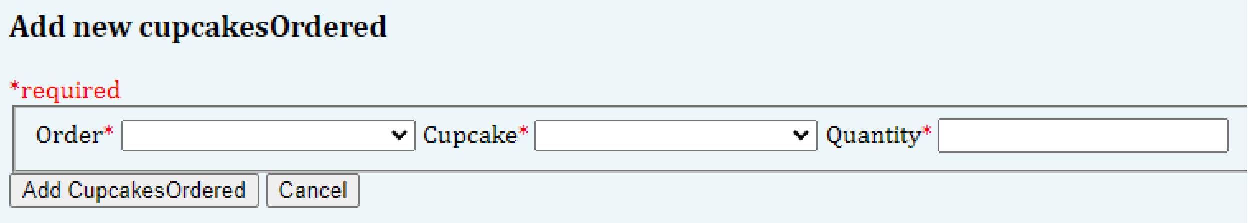
DELETE CupcakesOrdered page (M:N DELETE):



View cupcakes in orders

Add	ID	Order ID	Cupcake	Quantity
Delete	2	2	Mint Oreo, Peanut Butter	7

ADD/CREATE CupcakesOrdered page:

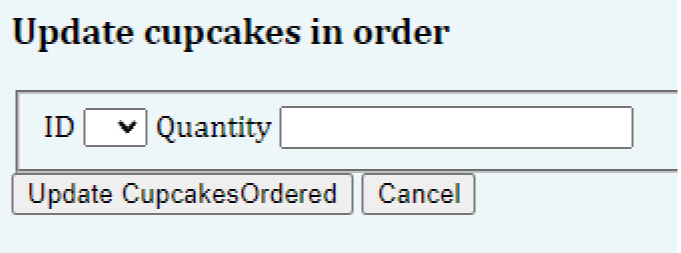


Add new cupcakesOrdered

*required

Order* Cupcake* Quantity*

UPDATE/EDIT Orders page (M:N UPDATE):



Update cupcakes in order

ID Quantity