Project Step 6
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URL: http://flip3.engr.oregonstate.edu:3247/

DDL/DML in 'project/database' folder

Please test using **Chrome.**

Project Summary

The database for this project was created by establishing 5 entities: **Customers**, **Orders**, **Records**, **Genres**, **RecordOrders** and **GenreRecords**. Customers represent customers buying records. **Customers** encapsulate information such as first name, last name, email, and phone number. Customer unique identifier is email. **Orders** represent the orders placed by customers. Orders encapsulates information such as the customer who placed the order and the order date in date format YYYYMMDD. **Records** represent the records sold by Vintage Records. Records encapsulates information such as title, artist, quantity in stock, and price. **Genres** represent the genres of records sold by Vintage Records. Genres encapsulates information such as genre name and genre description. **GenreRecords** represent the relationship between genre and record that belongs to that genre and take foreign keys genreID and recordID. **RecordOrders** represent the relationship between order and quantity of records bought by a customer in one order and take foreign keys recordID and customerID. Initially, quantity in stock was not an attribute that was considered but was added in due to feedback.

For the website, CRUD functionality was added in each page for each entity: ADD/UPDATE/DELETE functionality for Customers Page; ADD/UPDATE/DELETE functionality for Orders Page; ADD/UPDATE/DELETE functionality for Records Page; ADD/UPDATE/DELETE functionality for Genres Page; ADD functionality for RecordOrders Page and ADD/DELETE functionality for GenreRecords Page. Relevant views are created in the RecordOrders page to show meaningful data such as Total Spent per Customer in the database. Relevant views are created in the GenreRecords Page to show the quantity of records in stock and the Total Inventory Value. Technologies used for the site include NodeJS, HandlebarJS templates and Bootstrap for Styling. Credit is given to OSU CS340 NODEJS STARTER GUIDE for the starter code. Site functions with Asynchronous Javascript and XML (AJAX) instead of HTML Form. Since it may not be best practice to reload the site on each form submission, our team opted to use AJAX.

Summary of changes based on feedback:
1. Changed attribute names from snake_case to camelCase
2. Pluralized entity names
3. Added ON DELETE CASCADE to the foreign key constraints
4. Made 'phoneNumber' in Customers table nullable
5. Make UI more user friendly
6. Changed varchar length for attributes in Genres, Customers, and Records
7. Added 'qtyStock' to Records to represent the total inventory stock of a Record
8. Added price to Records
9. Added phoneNumber, broke up 'Name' to 'firstName' and 'lastName' to Customers
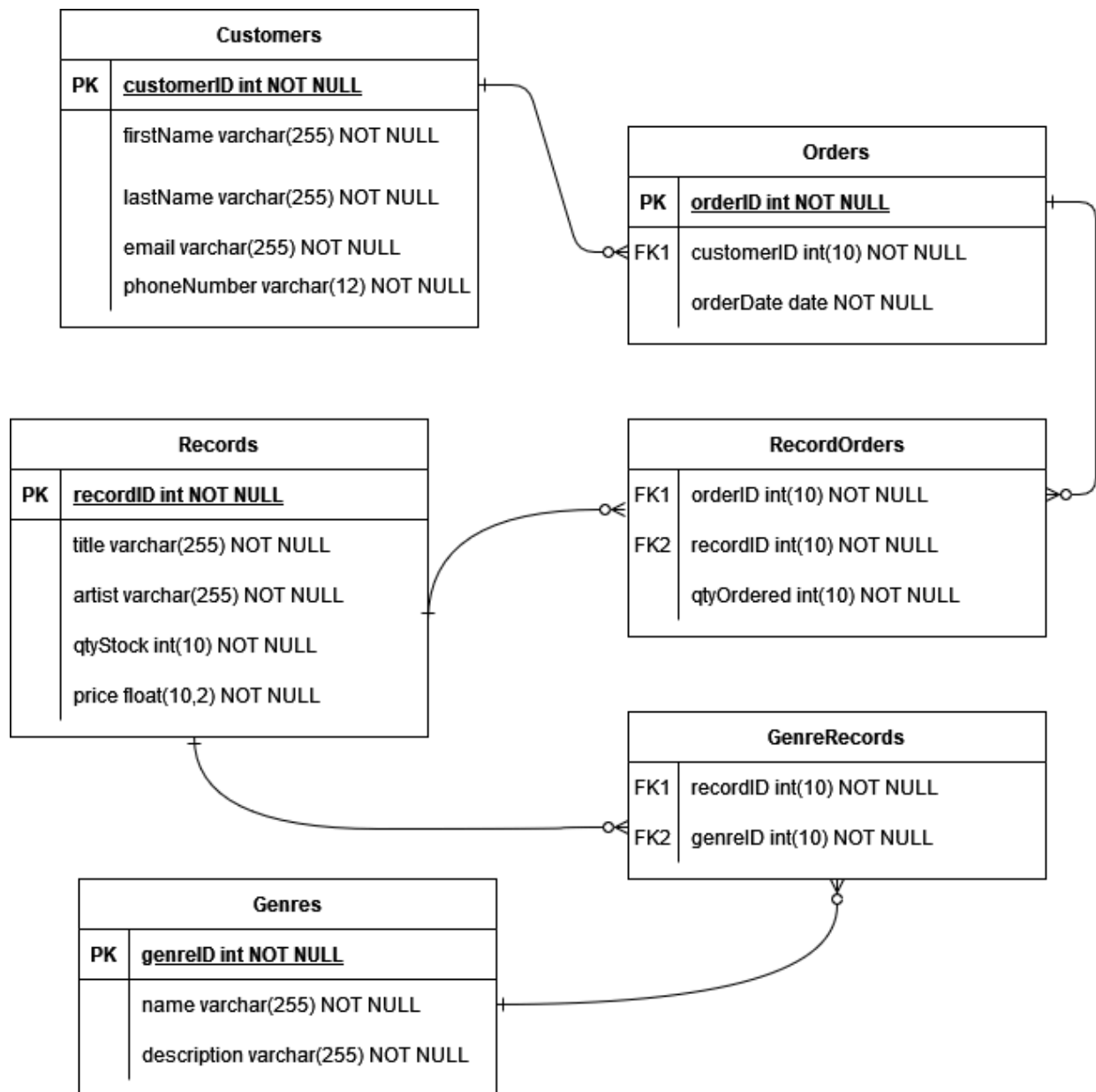10. Added 'qtyOrdered' to RecordOrders

Project Outline

Overview

Vintage Records is a small family business that sells vinyl records. Typically, they do $100,000in sales annually, and keep track of transactions by hand. However, interest has grown in Vintage Records as vinyl record sales have increased in the United States. In 2023, sales exceeded $750,000 in records sold. They no longer could rely on keeping track of transactions by hand, as sales were projected to exceed $1M in 2024. The customer base has grown to be more than 900,000 customers. In order to organize their collection of records and handle the growth of the business, Vinyl Records is interested in developing a database driven website that will record Orders of Vinyl Records to Customers. Customers can place orders to be picked up at the store. Records at the store will be organized by Genre.
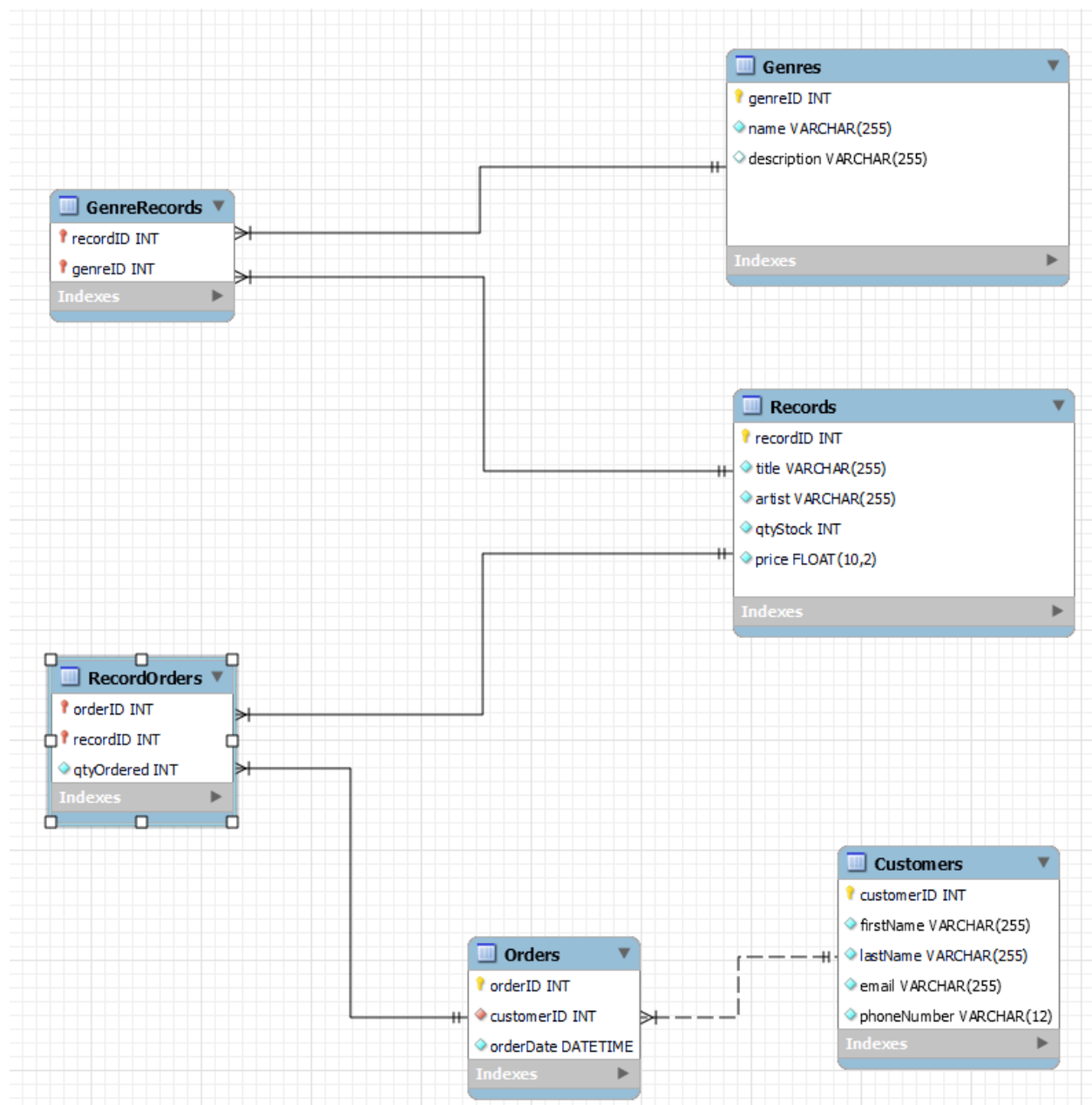
Database Outline

- Customers: records the details of Customers we do business with
    - customerID: INT NOT NULL AUTOINCREMENT PK
    - firstName: varchar(255), not NULL
    - lastName: varchar(255) NOT NULL
    - email: varchar(255) NOT NULL
    - phoneNumber: varchar(12)
    - Relationship: a 1:M relationship between Customers and Orders is implemented
      with customerID as a FK inside of Orders
- Orders: records order date and total price of order
    - orderID: int, auto_increment, unique, not NULL, PK
    - customerID: int, auto_increment, unique, not NULL, FK
    - orderDate: datetime, not NULL
    - Relationship: a 1:M relationship between Orders and RecordOrders is implemented with orderID and recordID as a FK inside of RecordOrders
- Records: instance of record available for sale at record store
    - recordID: int, auto_increment, unique, not NULL, PK
    - title: varchar(50), not NULL
    - artist: varchar(50), not NULL
    - qtyStock: int, not NULL
    - price: float(10,2), not NULL
    - Relationship: a 1:M relationship between Record and Genre Record is implemented with recordID and genreID as a FK inside of Genre Record
- Genres:

- ○ name: varchar(50), not NULL
- ○ description: varchar(255), not NULL
- ○ Relationship: a 1:M relationship between Genre and Genre Record is implemented with recordID and genreID as a FK inside of Genre Record
- ● RecordOrders: unique order made by customer
  - ○ customerID: int, auto_increment, unique, not NULL, FK
  - ○ recordID: int, auto_increment, unique, not NULL, FK
  - ○ qtyOrdered: INT NOT NULL
  - ○ PRIMARY KEY (customerID, recordID)
  - ○ Relationship: a M:1 relationship between Record Order and Orders and M:1
    relationship between Record Order and Record is implemented with recordID
    and orderID as a FK inside of RecordOrders. A Record can be a part of many
    Orders, and an Order can have many Records. This table represents the M:N relationship between Records and Orders.
- ● GenreRecords: record and genre it belongs to
  - ○ genreID: int, auto_increment, unique, not NULL, FK
  - ○ recordID: int, auto_increment, unique, not NULL, FK
  - ○ PRIMARY KEY (genreID, recordID)
  - ○ Relationship: a M:1 relationship between Genre Record and Records and M:1
    relationship between Genre Record and Genre is implemented with recordID and
    genreID as a FK inside of GenreRecords. A Genre can be associated with many
    Records, and a Record can have multiple Genres. This table represents the M:N
    relationship between Genres and Records.

Entity-Relationship Diagram

Customers

PK	<u>customerID int NOT NULL</u>
	firstName varchar(255) NOT NULL
	lastName varchar(255) NOT NULL
	email varchar(255) NOT NULL
	phoneNumber varchar(12) NOT NULL

Orders

PK	<u>orderID int NOT NULL</u>
FK1	customerID int(10) NOT NULL
	orderDate date NOT NULL

Records

PK	<u>recordID int NOT NULL</u>
	title varchar(255) NOT NULL
	artist varchar(255) NOT NULL
	qtyStock int(10) NOT NULL
	price float(10,2) NOT NULL

RecordOrders

FK1	orderID int(10) NOT NULL
FK2	recordID int(10) NOT NULL
	qtyOrdered int(10) NOT NULL

GenreRecords

FK1	recordID int(10) NOT NULL
FK2	genreID int(10) NOT NULL

Genres

PK	<u>genreID int NOT NULL</u>
	name varchar(255) NOT NULL
	description varchar(255) NOT NULL

SCHEMA

Genres
- 🔑 genreID INT
- ◇ name VARCHAR(255)
- ◇ description VARCHAR(255)
- Indexes

GenreRecords
- 🔑 recordID INT
- 🔑 genreID INT
- Indexes

Records
- 🔑 recordID INT
- ◇ title VARCHAR(255)
- ◇ artist VARCHAR(255)
- ◇ qtyStock INT
- ◇ price FLOAT(10,2)
- Indexes

RecordOrders
- 🔑 orderID INT
- 🔑 recordID INT
- ◇ qtyOrdered INT
- Indexes

Customers
- 🔑 customerID INT
- ◇ firstName VARCHAR(255)
- ◇ lastName VARCHAR(255)
- ◇ email VARCHAR(255)
- ◇ phoneNumber VARCHAR(12)
- Indexes

Orders
- 🔑 orderID INT
- ◆ customerID INT
- ◇ orderDate DATETIME
- Indexes

EXAMPLE DATA

Record Titles and Emails must be UNIQUE

Customers Table

firstName	lastName	email	phoneNumber
Jane	Smith	jsmith@gmail.com	856-555-2230
Michael Jones	Jones	mjones@gmail.com	609-555-2251

Corey	Rodriguez	crodriguez@gmail.com	215-555-7326

Orders Table

customerID	orderDate
(SELECT customerID FROM Customers WHERE name = 'Jane Smith')	'20240208'
(SELECT customerID FROM Customers WHERE name = 'Corey Rodriguez')	'20240206'
(SELECT customerID FROM Customers WHERE name = 'Michael Jones')	'20240207'

Records Table

title	artist	qtyStock	price
Be the Cowboy	Mitski	100	30.00
Rumors	Fleetwood Mac	100	50.00
Over The Garden Wall Original Soundtrack LP	Sam Wolfe Connelly	25	100.00

Genres Table

name	description
Indie	Alternative Music
Soundtrack	Original Soundtrack for TV/Film
Classic Rock	Rock music from the 1960s - 1990s

RecordOrders Table

orderID	recordID
(SELECT orderID FROM Orders WHERE cid = (SELECT customerID FROM Customers WHERE email = 'crodriguez@gmail.com))	(SELECT recordID FROM Records where title = `Be the Cowboy`)
(SELECT orderID FROM Orders WHERE cid = (SELECT customerID FROM Customers WHERE email = 'mjones@gmail.com'))	(SELECT recordID FROM Records WHERE title = 'Over The Garden Wall Original Soundtrack LP')
(SELECT orderID FROM Orders WHERE cid = (SELECT customerID FROM Customers WHERE email = 'jsmith@gmail.com'))	(SELECT recordID FROM Records WHERE title = 'Rumors')

GenreRecords Table

recordID	genreID
(SELECT recordID FROM Records WHERE title = `Be the Cowboy`)	(SELECT genreID FROM Genres WHERE name = `Indie`)
(SELECT recordID FROM Records WHERE title = `Rumors`)	(SELECT genreID FROM Genres WHERE name = `Classic Rock`)
(SELECT recordID FROM Records WHERE title = `Over The Garden Wall Original Soundtrack LP`)	(SELECT genreID FROM genres WHERE name = `Soundtrack`)

UI Page Screenshots

ADD/UPDATE/DELETE Customers Page

Navbar   Home   Customers   Orders   Records   Genres   RecordOrders   GenreRecords

Customers

New		customerID	firstName	lastName	email	phoneNumber
Edit	Delete	1	Jane	Smith	jsmith@gmail.com	856-555-2230
Edit	Delete	2	Michael	Jones	mjones@gmail.com	609-555-2251
Edit	Delete	3	Corey	Rodriguez	crodriguez@gmail.com	215-555-7326

List of all Customers currently in the database

Add a New Customer to the Database

First Name:

Customer's first name

Last Name:

Customer's last name

Email Address:

example@domain.com

Phone Number:

XXX-XXX-XXXX

Add New Customer   Cancel

Update an Existing Customer's Information

Customer: Select Customer By Email

Jane

Smith

jsmith@gmail.com

Phone Number:

XXX-XXX-XXXX

Update Customer   Cancel

ADD/UPDATE/DELETE Orders Page

Orders

New	orderID	email	orderDate
Edit Delete	1	jsmith@gmail.com	Thu Feb 08 2024 00:00:00 GMT-0800 (Pacific Standard Time)
Edit Delete	2	crodriguez@gmail.com	Tue Feb 06 2024 00:00:00 GMT-0800 (Pacific Standard Time)
Edit Delete	3	mjones@gmail.com	Wed Feb 07 2024 00:00:00 GMT-0800 (Pacific Standard Time)
Edit Delete	4	mjones@gmail.com	Fri Mar 08 2024 00:00:00 GMT-0800 (Pacific Standard Time)

List of all Orders currently in the database

Add a New Order to the Database

Customer: [Select Customer by Email ▾] Order Date:

[YYYYMMDD]

[Add Order] [Cancel]

Update an Existing Order's Information

Order: [Select Order By Email ▾]

[example@domain.com]

Order Date:

[YYYYMMDD]

[Update Order]
[Cancel]

ADD/UPDATE/DELETE Records Page

Records

New		recordID	title	artist	qtyStock	price
Edit	Delete	1	Be the Cowboy	Mitski	100	30
Edit	Delete	2	Rumors	Fleetwod Mac	100	50
Edit	Delete	3	Over The Garden Wall Original Soundtrack LP	Sam Wolfe Connelly	25	100
Edit	Delete	6	Scorpion	Drake	50	30
Edit	Delete	8	Life of Pablo	Kanye West	1	9.99
Edit	Delete	10	The Atomic Mr. Basie	Count Basie Orchestra	10	200

List of all Records currently in the database

Add a New Record to the Database

Title:

[Title of the Record]

Artist:

[Artist of the Record]

Quantity in Stock:

[Total Purchased Units of the Record]

Price:

[Price of the Record]

[Add New Record] [Cancel]

Update an Existing Record's Information

Record: [Select Record by Title ▾] Title:

[   ]

Arist:

[   ]

Stock:

[   ]

Price:

[   ]

[Update Record] [Cancel]

ADD/UPDATE/DELETE Genres Page

Genres

New		genreID	name	description
Edit	Delete	1	Indie	Alternative Music
Edit	Delete	2	Soundtrack	Original Soundtrack for TV/Film
Edit	Delete	3	Classic Rock	Rock music from the 1960s - 1990s
Edit	Delete	8	Pop	Pop music
Edit	Delete	10	Hip-Hop	Test
Edit	Delete	12	Country	From rural America
Edit	Delete	13	benny hill saxophone remixes	Any form of music that takes root in the benny hill saxophone theme
Edit	Delete	14	Jazz	American Roots Music
Edit	Delete	16	EDM	electron mus

List of all Genres currently in the database

Add a New Genre to the Database

Name of Genre:

Description of Genre:

[Add New Genre] [Cancel]

Update an Existing Genre's Information

Genre: [Select Genre By Name ▾]

Genre Desciption

[Update Genre]

[Cancel]

ADD RecordOrders Page

RecordOrders

customerID	firstName	lastName	email	totalSpent	title
2	Michael	Jones	mjones@gmail.com	$100	
1	Jane	Smith	jsmith@gmail.com	$80	
3	Corey	Rodriguez	crodriguez@gmail.com	$30	

Total Dollar Amount Spent for Each Customer

Add a New Record Order to the Database

Customer: [Select Customer By Email ▼] Order Date: [mm/dd/yyyy 📅] Record Purchased: [Select Record by Title ▼] Quantity Purchased
[   ]

[Add New RecordOrder] [Cancel]

ADD/DELETE GenreRecords Page

GenreRecords

	recordID	title	artist	Stock	InventoryValue	genre	description
Delete	1	Be the Cowboy	Mitski	100	$3000	Indie	Alternative Music
Delete	2	Rumors	Fleetwod Mac	100	$5000	Classic Rock	Rock music from the 1960s - 1990s
Delete	3	Over The Garden Wall Original Soundtrack LP	Sam Wolfe Connelly	25	$2500	Soundtrack	Original Soundtrack for TV/Film

List of all Records and their associated Genre

Add a Genre Record

Title of Record: [Be the Cowboy ▼] Genre Name: [Indie ▼]

[Add New GenreRecord] [Cancel]