

Project Outline, Database Outline, ERD, and Schema

DJ's MP3's

a. Overview

We operate an online MP3 store that allows customers to purchase music by the song or by the album. We sell 2,000,000 tracks per year for an average of 5,500 tracks per day. A database driven website will allow us to keep track of unique **customers** and record their **orders** (a list of downloads) and which **download_items** were on their orders. **customers** will have the ability to purchase individual **tracks** for .99 each or purchase an entire **album** for 9.99. **customers** will be able to select multiple tracks for purchase or multiple albums, they may not purchase more than one qty of each unique item.

b. Database Outline

customers: records the details of customers we do business with

- customer_id: int, auto_increment, unique, not NULL, Primary Key
- customer_first_name: varchar, not NULL
- customer_last_name: varchar, not NULL
- customer_phone: char(11), not NULL
- customer_street: varchar, not NULL
- customer_apartment: varchar
- customer_city: varchar, not NULL
- customer_state: char(2), not NULL
- customer_zip: char(5), not NULL
- customer_email: varchar, not NULL
- credit_card_number: char(16), not NULL
- credit_card_exp: char(4), not NULL
- Relationship: A 1:M relationship between customers and orders is implemented with customer_id as a Foreign Key inside of orders.

orders: records the details of orders placed by customers.

- order_number: int, auto_increment, unique, not NULL, Primary Key
- customer_id: int, not NULL, Foreign Key
- order_date: date, not NULL
- credit_card_number: char(16), not NULL
- credit_card_exp: char(4), not NULL
- total_cost: money, not NULL
- Relationship: A M:M relationship between orders and tracks is implemented with the creation of a download_item composite entity that splits the M:M relationship into two 1:M relationships (one track to download can belong to many orders and one order can contain many tracks) .

download_items: Is one track that can belong to either orders of full albums or orders for individual tracks. When an album is selected for download, then all individual tracks with that album as attribute are downloaded by querying the DB for all tracks with the unique album_id.

- order_number: int, not NULL, part of Concatenated Primary Key, Foreign Key
- track_id: int, not NULL, part of Concatenated Primary Key, Foreign Key
- single: bool, not NULL (indicates if item being downloaded is individually downloaded track or track downloaded as part of full album, if True, then higher price is added to subtotal. If False, then track is part of album download and lower price is used for subtotal)
- Relationship: A M:M relationship between tracks and orders is handled by creating a download_item composite entity that allows only one song to be on one download_item and many unique download_items to appear on one unique order. Takes order_number and track_id as Foreign Keys to handle M:M relationship between orders and tracks.

tracks: individual tracks to be ordered, tracks have one and only one artist as do albums.

(album_id is now Nullable to reflect fact that a track can be a single release not belonging to an album)

- track_id: int, auto_increment, unique, not NULL, Primary Key
- title: varchar, not NULL
- artist_id: int, not NULL, Foreign Key
- album_id: int, Foreign Key
- ind_price: int, precision (hundredths place), not NULL
- album_price : int, precision (hundredths), not NULL (album price is lower than price of individual download)
- Relationship: 1:M relationship between artist and track where one artist produces many tracks. Each track corresponds to one and only one artist. artist_id is a Foreign Key linking tracks to artists. A 1:M relationship exists between albums and tracks, a track may have 0 or 1 album and an album may have 1 or many tracks.

artists: Identifies unique artists and allows tracks to be queried by artists.

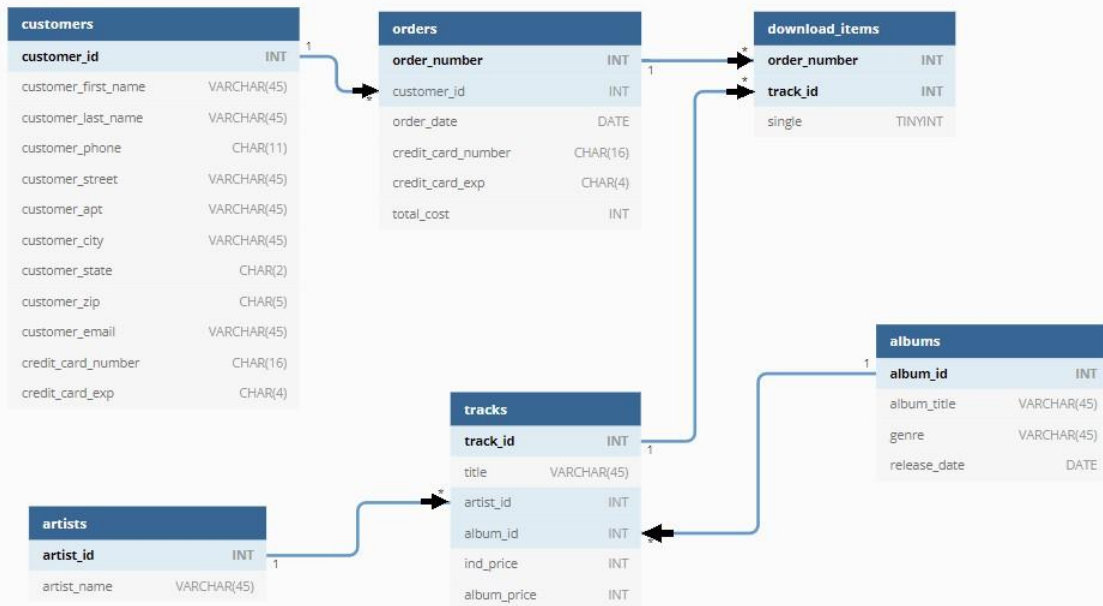
- artist_id: int, auto_increment, unique, not NULL, Primary Key
- artist_name: varchar, not NULL
- Relationship: A 1:M relationship exists between artists and tracks. artist_id is a Foreign Key inside tracks.

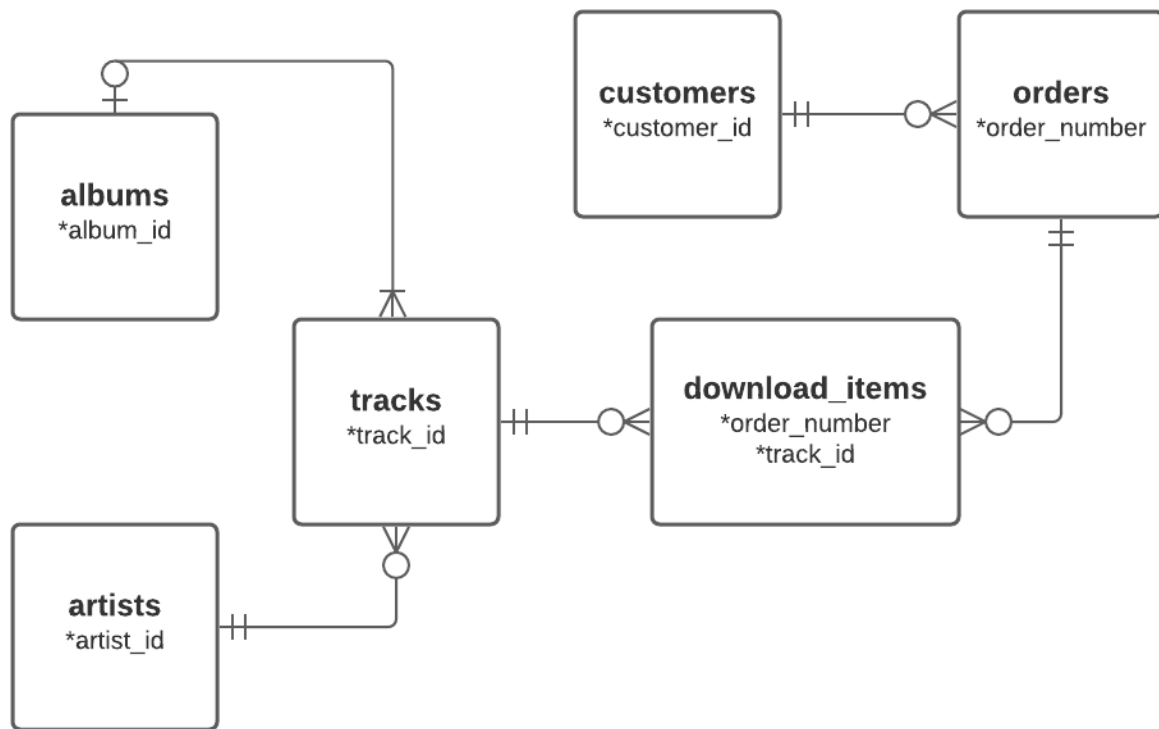
albums: Identifies unique albums and relates albums to artists, allows tracks to be queried by album_id for when purchasing a whole album.

(* updated so that artist_id is no longer an attribute)

- album_id: int, auto_increment, unique, not NULL, Primary Key
- album_title: varchar, not NULL
- genre: varchar
- release_date: date
- Relationship: A 1:M relationship exists between albums and tracks. There is no longer a direct relationship between albums and artists as albums and artists are joined by the artist_id FK attribute under 'tracks'. A 1:M relationship exists

between albums and tracks, a track may have 0 or 1 album and an album may have 1 or many tracks.

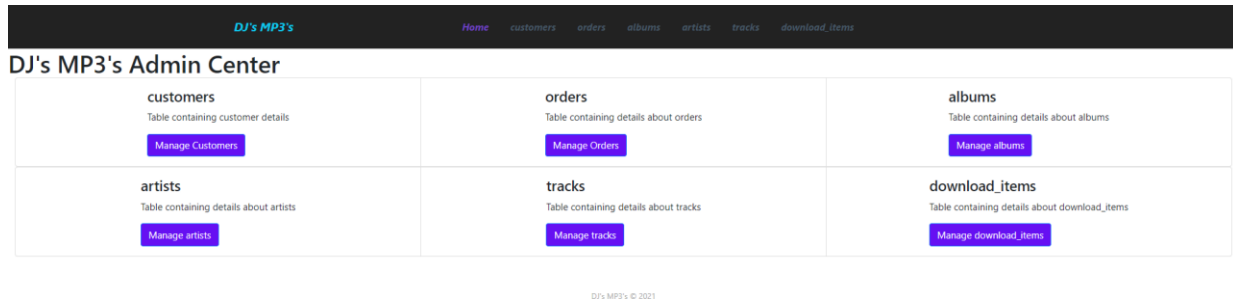




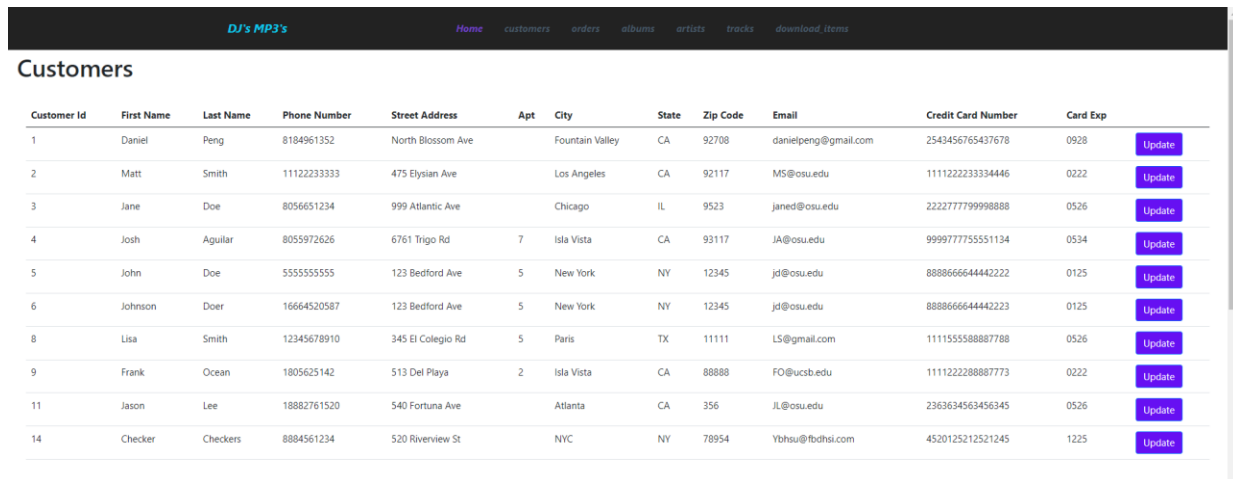
*UI screen captures below

UI Screen Captures

Home page: No CRUD functionality. Allows for convenient navigation across other pages



READ/BROWSE/DISPLAY Customers page; also UPDATE/EDIT Customers details page (top half of page)



Same page as above (bottom half); CREATE/INSERT/ADD NEW customers page

Add New Customer Information

First Name	<input type="text"/>
Last Name	<input type="text"/>
Customer Phone Number	<input type="text"/>
Street Address	<input type="text"/>
Apt #	<input type="text"/>
City	<input type="text"/>
State	<input type="text"/>
Zip Code	<input type="text"/>
Email	<input type="text"/>
Credit Card Number	<input type="text"/>
Credit Card Exp	<input type="text"/>
<input type="button" value="Submit"/>	

READ/BROWSE/DISPLAY orders page (top); CREATE/INSERT/ADD NEW orders page (middle)

SEARCH/BROWSE orders page (bottom)

DJ's MP3's

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Orders

Order Number	Customer	Order Date	Card Number	Card Exp	Total Cost
1	Daniel Peng	8/8/2021	2543456765437678	0928	6
2	Matt Smith	1/1/2021	1111222233334444	0222	1
3	Jane Doe	2/2/2022	2222777799998888	0526	0
4	John Doe	12/2/2021	8888666644442222	0125	1
5	Matt Smith	12/14/2021	1111222233334444	0222	0
6	Matt Smith	12/14/2021	1111222233334444	0222	0
7	Checker Checkers	12/24/2021	4520125212521252	1267	0

Add New Order Information

Customer ID

Order Date

Search Orders by Last Name

Search by Last Name:

Display all Orders:

READ/BROWSE/DISPLAY albums page (top);
CREATE/INSERT/ADD NEW albums (bottom)

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Albums

Album Id	Album Title	Genre	Release Date
1	A Love Supreme	jazz	
2	Giant Steps	jazz	
3	Die Frau Ohne Schatten	classical	
4	Salome	classical	
5	Gotterdammerung	classical	
7	What Separates Me From You	Rock	01/01/2010
8	Homesick	rock	01/01/2009
9	My Beautiful Dark Twisted Fantasy	Rap	
11	Red		
12	For Those Who Have Heart		
14	Common Courtesy		
15	Remember Right Now		01/01/2003

Add New Album Information

Album Title

Genre

Release Date

mm/dd/yyyy

Submit

READ/BROWSE/DISPLAY artists page (top);
CREATE/INSERT/ADD NEW artists page (bottom)

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Artists

Artist Id	Artist Name
1	John Coltrane
2	Thelonius Monk
3	Herbert von Karajan
4	Claudio Abbado
5	Fred Hersch
6	Richard Strauss
7	Richard Wagner
8	A Day To Remember
9	Kanye West
10	Linkin Park
11	The Weeknd
12	Senses Fail
13	Nirvana

Add New Artist Information

Artist Name

Submit

READ/BROWSE/DISPLAY tracks page (top);

CREATE/INSERT/ADD NEW tracks page (bottom)

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Tracks

Track Id	Title	Artist Name	Album Title	Individual Price	Album Price
1	Acknowledgement	John Coltrane	A Love Supreme	1	1
2	Vorspiel	Richard Wagner	Gotterdammerung	1	1
3	NJ Legion Iced Tea	A Day To Remember		1	13
4	Homesick	A Day To Remember		1	13
5	Better Off This Way	A Day To Remember	What Separates Me From You	1	13
6	All of the Lights	Kanye West	My Beautiful Dark Twisted Fantasy	1	13
10	love like this	Thelonus Monk	Giant Steps	4	55
12	If it Means A Lot To You			1	11
13	Dark Fantasy	Kanye West	My Beautiful Dark Twisted Fantasy	1	1
14	Smells like Teen Spirit	Nirvana	Remember Right Now	3	4

Add New Track Information

Track Title

Artist Name

Select an Artist

Album Name

Select an Album

Individual Price

Album Price

Submit

READ/BROWSE/DISPLAY/DELETE tracks page (top);

CREATE/INSERT/ADD NEW tracks page (bottom)

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Download Items

Order Number	Track Numerical ID	Track Name	Single	
1	2	Vorspiel	1	Delete
1	4	Homesick	0	Delete
1	5	Better Off This Way	1	Delete
1	10	love like this	1	Delete
2	3	NJ Legion Iced Tea	1	Delete
3	14	Smells like Teen Spirit	0	Delete
4	5	Better Off This Way	1	Delete
5	6	All of the Lights	0	Delete

Add Download Item Information

Order Number

Select an Order

Track ID

Select a Track

Single?

Complete

Submit