Sierra Rittue

April 22nd, 2020

LIS458

Bruce Tis

Final Database Project R&C Library

Conceptual Design

Mission

The purpose of this database is to allow R&C Library to efficiently manage their personal library collection, track lending transactions, identify available and unavailable items within the collection, and prevent the loss of items. Patrons should be able to easily use the R&C website to access the database for search and registration purposes.

Objectives

- Catalog each item within the library to prevent any future losses.
- Manage information about each book or music item within the collection. This includes author/composer, title, genre, and publication date.
- Provide patrons with a search feature for easy access to the collection
- Create a table to track lending transactions. This must include the items being checked out, the patron's name, and eventually the date the items were returned.
- Allow books and music to be involved in multiple lending transactions
- Generate reports as necessary on:
 - Lending transactions
 - o Currently available vs. currently unavailable collection items.
 - o Frequency of items being lent out

Business Rules

• One and only one book OR one and only one music item may be associated with a single Collection ID. A Collection ID may not be associated with both a book and music.

- Any item may be associated with one and only one transaction at any one time.
- Patrons may check out a maximum of three (3) items of any type at any one time.
- For any non-specific dates, the default will be the first of the month. Ex. March 1st, 1936 for something published in March 1936 without a listed date. If only the year is available, the default will be January 1st of that year.
- For books or music with multiple authors or composers, the only the first listed will be recorded for the item's database record.

Data Entry Form Examples

1. Collection Identifier Entry Form

Condition (circle one):

New

COLLECTION IDENTIFIER ENTRY FORM Collection ID:____ Entry Date (MM/DD/YYYY):_____ Type: Book Music Format: Music **Books** Hardcover Sheet Music Softcover Full Score Owner: Sierra Matt ITEM DETAILS Author/Composer (circle one):_____ Publication Date (MM/DD/YYYY):_____

Used

2. Item Checkout Form

- "	
Collection ID:	Check-Out Date (MM/DD/YYYY):
Title:	
Author/Composer (circle one):_	
Collection ID:	
Title:	
Author/Composer (circle one):_	
Collection ID:	
Title:	
Author/Composer (circle one):	
	CONTACT DETAILS
	CONTACT DETAILS
Phone:	-
By signing this form, I agree to re	espectfully care for the item(s) in my possession. I will return the
item(s) within 30 days of the chec	ck-out date.
Signature:	Date:

Output Report Examples

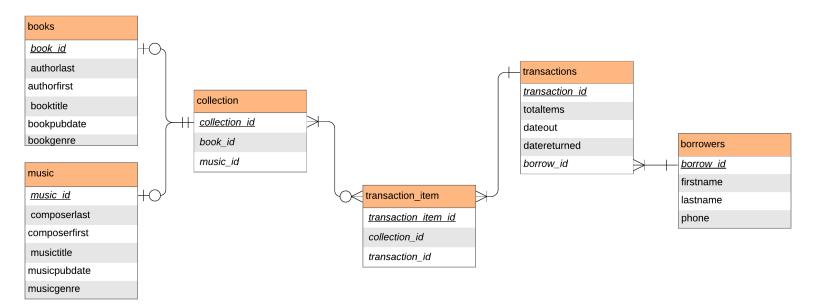
1. List of Books in the Collection

book_id	authorlast	authorfirst	booktitle	bookpubdate	bookgenre
1000	Evenson	Brian	Immobility	04/10/2012	fiction
1001	Gill	Nikita	Wild Embers	11/14/2017	poetry
1002	Morrison	Toni	Beloved	08/12/1987	fiction
1003	Murray	Sabina	A Carnivore's Inquiry	06/04/2004	fiction
1004	Myles	Eileen	Cool for You	11/01/2000	fiction

2. List of Lending Transactions

transactions_id	totalitems	firstname	lastname	dateout	datereturned	collection_id
1000	1	Elliot	Stabler	01/20/2019	02/01/2019	103
1001	1	Olivia	Benson	02/01/2019	02/11/2019	165
1002	3	John	Munch	03/15/2019	04/20/2019	100, 101, 120
1003	2	Finn	Tutuola	05/06/2019	05/29/2019	104, 150
1004	1	Aaron	Hotchner	05/13/2019	06/12/2019	130

Entity-Relationship Diagram

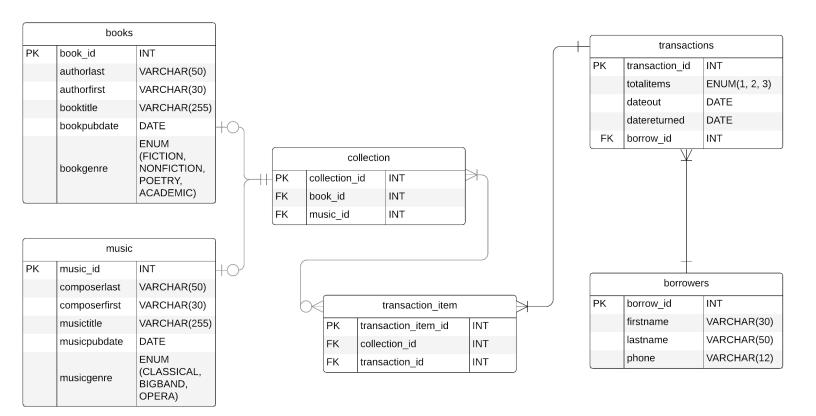


Logical Design

Table Schema

books (<u>book_id</u>, authorlast, authorfirst, booktitle, bookpubdate, bookgenre)
music (<u>music_id</u>, composerlast, composerfirst, musictitle, musicpubdate, musicgenre)
collection (<u>collection_id</u>, <u>book_id</u>, <u>music_id</u>)
borrowers (<u>borrow_id</u>, firstname, lastname, phone)
transactions (<u>transaction_id</u>, totalitems, dateout, datereturned, <u>borrow_id</u>)
transaction item (transaction item id, collection id, transaction id)

Database Design Diagram



Normalization Statements

The books table is normalized to BCNF because it is in 3NF and the determinants are also candidate keys.

The music table is normalized to BCNF because it is in 3NF and the determinants are also candidate keys.

The collection table is normalized to BCNF because it is in 3NF and the determinants are also candidate keys.

The transactions table is normalized to BCNF because it is in 3NF and the determinants are also candidate keys.

The borrowers table is normalized to BCNF because it is in 3NF and the determinants are also candidate keys.

The transaction-item table is normalized to BCNF because it is in 3NF and the determinants are also candidate keys.

FIELD SPECIFICATIONS CAN BE FOUND AT THE END OF THE DOCUMENT

SQL Queries

1. This query returns the collection_id and relevant item-specific information of all those that are currently available and not on loan at the moment. This query uses 5 tables.

b.authorfirst, b.bookgenre, m.musictitle,
m.composerlast, m.composerfirst, m.musicgenre
FROM collection AS c

LEFT OUTER JOIN books AS b ON b.book_id = c.book_id

LEFT OUTER JOIN music AS m ON m.music_id = c.music_id

WHERE c.collection_id IN (SELECT i.collection_id AS collection_id

FROM transaction_item AS i

RIGHT JOIN transactions AS t ON t.transaction_id = i.transaction_id

WHERE t.datereturned IS NOT NULL)

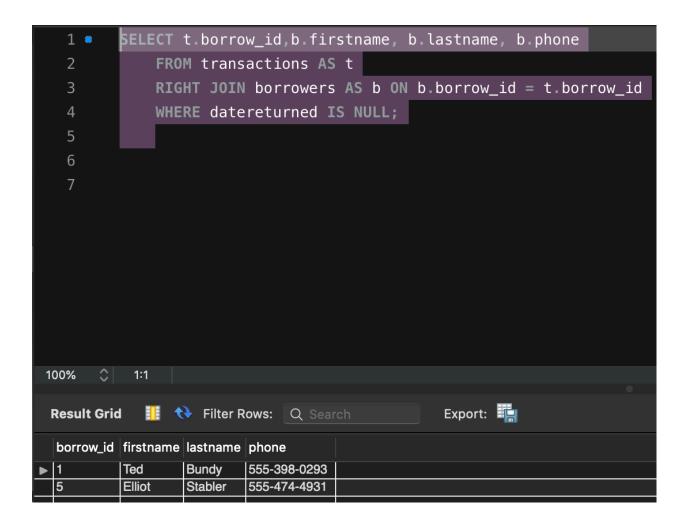
GROUP BY c.collection id;

SELECT c.collection_id, b.booktitle, b.authorlast,

		- '	ce, braucii	UI Last,					
	2 b		ELECT c.collection_id, b.booktitle, b.authorlast,						
		authorfirst, b.bookgenre, m.musictitle,							
	3 m	composerlast, m.composerfirst, m.musicgenre							
	4 F	ROM collection AS c							
	5 L	EFT OUTER JOIN books AS b ON b.bo	$pok_id = c$	book_i	d				
	6 L	EFT OUTER JOIN music AS m ON m.m.	usic_id =	c.music	_id				
	7 ⊝ W	HERE c.collection_id IN (SELECT :	i collecti	on id A	- S collect	ion id			
		FROM transaction item		.oii_tu A	Correct	1011_14			
10	0% 🗘	1:12	AC -						
R	esult Grid	III 💎 Filter Rows: Q Search	Export:	ā					
	collection_i	booktitle	authorlast	authorfi	bookgenre	musictit	composerlast	composerfi	musicgenre
▶ 1	1000	Twelfth Night	Shakespeare	William	FICTION	NULL	NULL	NULL	NULL
	1001	Titus Andronicus	Shakespeare		FICTION	NULL	NULL	NULL	NULL
	1003	Erasure	Everett	Percival	FICTION	NULL	NULL	NULL	NULL
	1004	The Art of the Short Story	Gioia	Dana	ACADEMIC	NULL	NULL	NULL	NULL
	1005	Cool For You	Myles		FICTION	NULL	NULL	NULL	NULL
	1007	Immobility	Evenson		FICTION	NULL	NULL	NULL	NULL
	1008	Wild Embers	Gill		POETRY	NULL	NULL	NULL	NULL
	1009	Beloved	Morrison	Toni	FICTION	NULL	NULL	NULL	NULL
	1010	Forensic Anthropology: Current Methods and Pr			ACADEMIC	NULL	NULL	NULL	NULL
	1011	Astronomy: A Physical Perspective	Kutner	Marc L.	ACADEMIC	NULL	NULL	NULL	NULL
	1013	NULL	NULL	NULL	NULL			J.S.	CLASSICAL
	1014	NULL	NULL	NULL	NULL		Bach	J.S.	CLASSICAL
	1015	NULL	NULL	NULL	NULL		Bach	J.S.	CLASSICAL
	1017	NULL	NULL	NULL	NULL		Puccini	Giacomo	OPERA
	1018	NULL	NULL	NULL	NULL	La Boh	Puccini	Giacomo	OPERA

2. This query returns the borrower ID, name, and phone number of any patrons with books currently out on loan. This is useful in cases where follow up is needed. This query uses 2 tables.

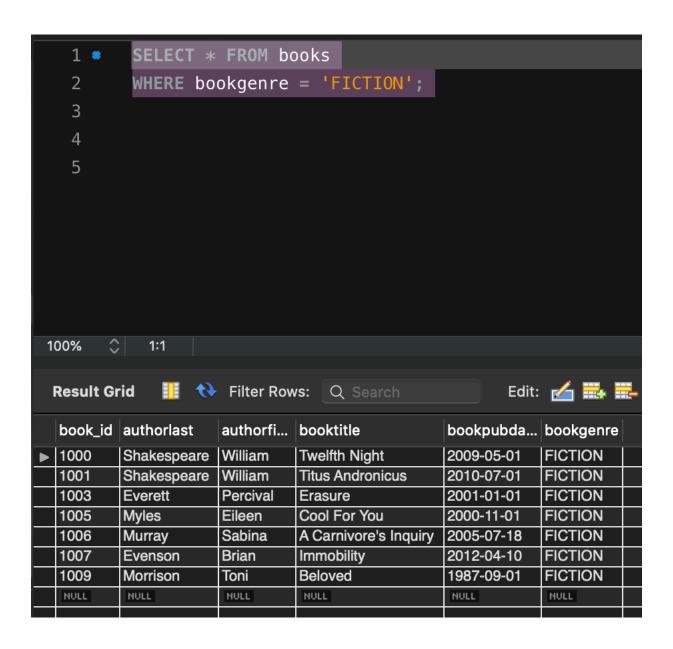
SELECT t.borrow_id,b.firstname, b.lastname, b.phone
FROM transactions AS t
RIGHT JOIN borrowers AS b ON b.borrow_id = t.borrow_id
WHERE datereturned IS NULL;



3. This query returns all books in the collection that are marked as belonging to the Fiction genre. This is useful as it can be easily adjusted to search for and return any requested genres from either collection by patrons.

SELECT * FROM books

WHERE bookgenre = 'FICTION';



4. This query can be used in generating reports on item popularity within the collection. It should be taken with a grain of salt, however, since the number of times an item has been checked out does not necessarily mean that patrons are not using it.

```
SELECT collection_id,

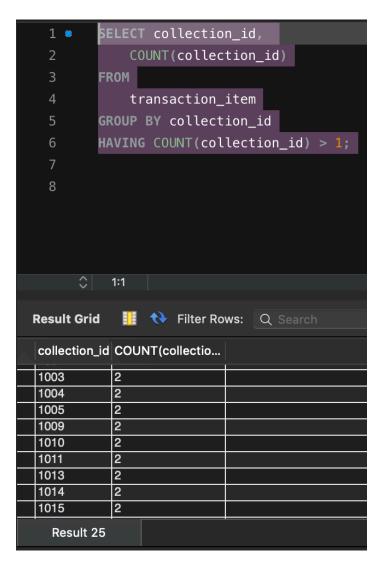
COUNT(collection_id)

FROM

transaction_item

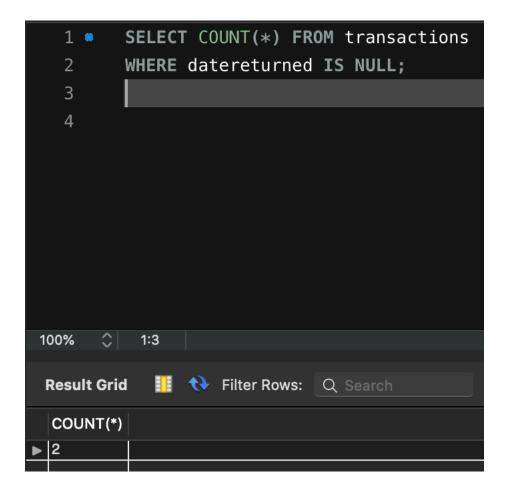
GROUP BY collection_id

HAVING COUNT(collection_id) > 1;
```



5. This query returns the number of currently open lending transactions (aka those without a return date).

SELECT COUNT(*) FROM transactions WHERE datereturned IS NULL;



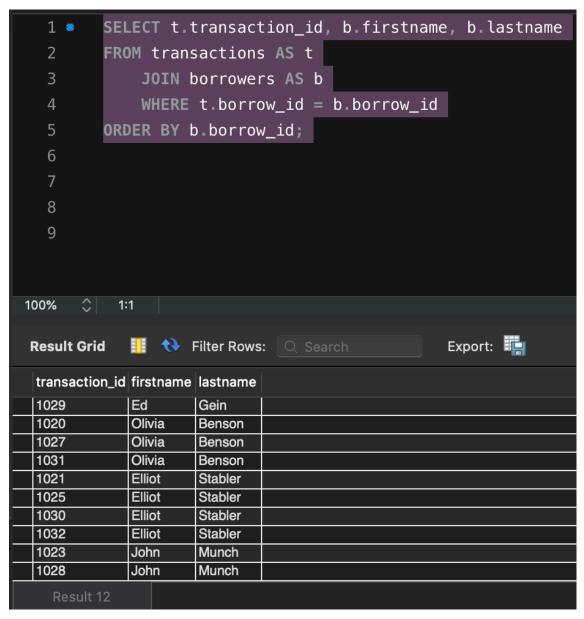
6. This query returns all of the transaction IDs for a specific patron. This can be useful if a patron is looking for an item they've previously checked out, or if we are trying to determine who our regular patrons are.

FROM transactions AS t

JOIN borrowers AS b

WHERE t.borrow_id = b.borrow_id

ORDER BY b.borrow_id;



7. This is the SQL query for my search page. The user is required to select either the book or music collection, but either way the input is searched against the title, genre, first name, or last name of items in the collection. This code can be found in the relsearch.php file. In this example, I searched the music collection for "Bach"

SELECT c.collection_id, b.booktitle, b.authorlast, b.authorfirst, b.bookgenre, m.musictitle, m.composerlast, m.composerfirst, m.musicgenre

FROM collection AS c

LEFT OUTER JOIN books AS b ON b.book id = c.book id

LEFT OUTER JOIN music AS m ON m.music id = c.music id

WHERE b.booktitle LIKE '%\$search%'

OR b.authorlast LIKE '%\$search%'

OR b.authorfirst LIKE '%\$search%'

OR b.bookgenre LIKE '%\$search%'

OR m.musictitle LIKE '%\$search%'

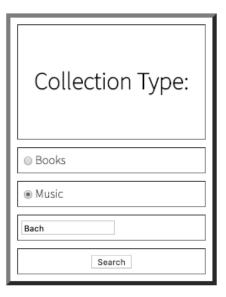
OR m.composerlast LIKE '%\$search%'

OR m.composerfirst LIKE '%\$search%'

OR m.musicgenre LIKE '%\$search%'

GROUP BY c.collection_id;

YOU MAY SEARCH OUR COLLECTION OF BOOKS AND MUSIC THROUGH THIS FORM



FIND YOUR RESULTS BELOW!

Mass in B Minor

J.S. Bach

CLASSICAL

St. Matthew Passion

J.S. Bach

CLASSICAL

St. John Passion

J.S. Bach

CLASSICAL

8. This query shows the partial match functionality I've included to assist in search queries. I searched the book collection for "snow".

SELECT c.collection_id, b.booktitle, b.authorlast, b.authorfirst, b.bookgenre, m.musictitle, m.composerlast, m.composerfirst, m.musicgenre

FROM collection AS c

LEFT OUTER JOIN books AS b ON b.book id = c.book id

LEFT OUTER JOIN music AS m ON m.music_id = c.music_id

WHERE b.booktitle LIKE '%\$search%'

OR b.authorlast LIKE '%\$search%'

OR b.authorfirst LIKE '%\$search%'

OR b.bookgenre LIKE '%\$search%'

OR m.musictitle LIKE '%\$search%'

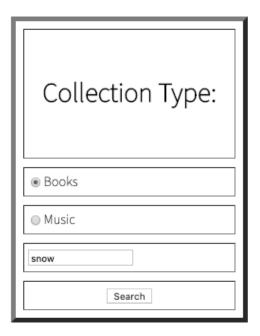
OR m.composerlast LIKE '%\$search%'

OR m.composerfirst LIKE '%\$search%'

OR m.musicgenre LIKE '%\$search%'

GROUP BY c.collection_id;

YOU MAY SEARCH OUR COLLECTION OF BOOKS AND MUSIC THROUGH THIS FORM.



FIND YOUR RESULTS BELOW!

Snowflake / Different Streets

Eileen Myles

POETRY

9. This query searches our book collection by genre. The search field is not case-sensitive, so end users don't need to have an exact match to the record to get results.

SELECT c.collection_id, b.booktitle, b.authorlast, b.authorfirst, b.bookgenre, m.musictitle, m.composerlast, m.composerfirst, m.musicgenre

FROM collection AS c

LEFT OUTER JOIN books AS b ON b.book_id = c.book_id

LEFT OUTER JOIN music AS m ON m.music_id = c.music_id

WHERE b.booktitle LIKE '%\$search%'

OR b.authorlast LIKE '%\$search%'

OR b.authorfirst LIKE '%\$search%'

OR b.bookgenre LIKE '%\$search%'

OR m.musictitle LIKE '%\$search%'

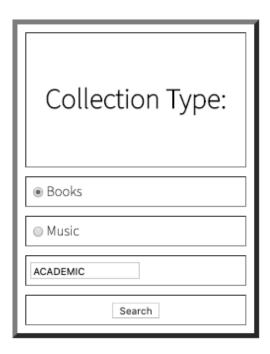
OR m.composerlast LIKE '%\$search%'

OR m.composerfirst LIKE '%\$search%'

OR m.musicgenre LIKE '%\$search%'

GROUP BY c.collection id;

YOU MAY SEARCH OUR COLLECTION OF BOOKS AND MUSIC THROUGH THIS FORM.



FIND YOUR RESULTS BELOW!

The Art of the Short Story

Dana Gioia

ACADEMIC

Forensic Anthropology: Current Methods and Practices

Angi M. Christensen

ACADEMIC

Astronomy: A Physical Perspective

Marc L. Kutner

ACADEMIC

10. This query uses another partial search term to identify books in our collection that may be what the patron is looking for. In this case, the books collection was searched for "wi"

SELECT c.collection_id, b.booktitle, b.authorlast, b.authorfirst, b.bookgenre, m.musictitle, m.composerlast, m.composerfirst, m.musicgenre

FROM collection AS c

LEFT OUTER JOIN books AS b ON b.book id = c.book id

LEFT OUTER JOIN music AS m ON m.music_id = c.music_id

WHERE b.booktitle LIKE '%\$search%'

OR b.authorlast LIKE '%\$search%'

OR b.authorfirst LIKE '%\$search%'

OR b.bookgenre LIKE '%\$search%'

OR m.musictitle LIKE '%\$search%'

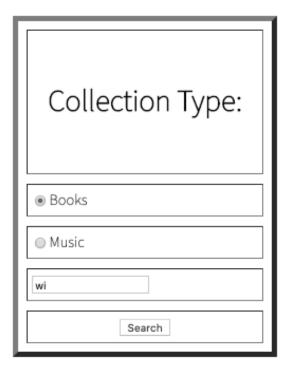
OR m.composerlast LIKE '%\$search%'

OR m.composerfirst LIKE '%\$search%'

OR m.musicgenre LIKE '%\$search%'

GROUP BY c.collection_id;

YOU MAY SEARCH OUR COLLECTION OF BOOKS AND MUSIC THROUGH THIS FORM.



FIND YOUR RESULTS BELOW!

Twelfth Night

William Shakespeare

FICTION

Titus Andronicus

William Shakespeare

FICTION

Wild Embers

Nikita Gill

POETRY

HTML Forms

1. Form to INSERT data

A patron registration form was a fitting way to insert data into my borrowers table. I considered creating a check out form to insert data into the transactions and transaction_item tables, but that proved to be much more difficult than I anticipated.

http://web.simmons.edu/~rittue/lis467/final2/rclregister.php

This is the form patron's first encounter.

SERVICES

THE R&C LIBRARY WELCOMES PATRONS FROM ALL AROUND THE PIONEER VALLEY.
REGISTER TODAY!

Registration

First Name:	Last Name:	Phone Number:
	Register	

http://web.simmons.edu/~rittue/lis467/final2/registersuccess.php

After the patron submits their information, they will be brought to this page.

SERVICES

THE R&C LIBRARY LENDS OUT A MAXIMUM OF THREE ITEMS AT ONE TIME.

Thank you for registering! Your information has been added to our patron list

Your Borrower ID is 1005.

2. Form to DELETE data

Since I did not want to delete any items from the collection through this website, I decided the best way to implement this would be through an unsubscribe/unregister option for patrons to remove their information from our database.

http://web.simmons.edu/~rittue/lis467/final2/rclregister.php

Unsubscribe
We're sorry to see you go, but hope you find a home in another library in your community! To be sure we are unsubscribing the right patron, we only allow unsubscription through Borrower ID number. Give us a call if you don't know yours!
Borrower ID:
Unsubscribe

http://web.simmons.edu/~rittue/lis467/final2/rclremove.php

Upon submission, the patron will see this:

SERVICES

THE R&C LIBRARY LENDS OUT A MAXIMUM OF THREE ITEMS AT ONE TIME.

You have successfully been removed from our patron list. Best wishes!

3. Form to MODIFY data

This form allows patrons to update their phone number on file with the library. They can do so by inputting their Borrower ID and their new phone number, OR by inputting their current borrower information that results in an exact match to an existing record and their new phone number.

http://web.simmons.edu/~rittue/lis467/final2/rclregister.php

Update Your Phone Number

		-	ID I			1.1	*11 11	1 1		
PIDSCD	nrovidav	JOHR BORROWAR	III) number or v	OUR PAGISTARAGE	natron intor	mation alon	a with the new	nnana niimnar	to lindata	Valir racard
LICASE	DIOVIGE	voui bollovel		Oui legistered	Dali Oli IIIIOI	mation, atom	E MILLI LIE LIEW	phone number.	. LO UDUALE	voui iecolu

Borrower ID: First Name: Last Name: Phone Number: NEW Phone Number:
Update

http://web.simmons.edu/~rittue/lis467/final2/rclupdate.php

When the user enters their information and successfully updates their phone number, they will see this screen:

SERVICES

THE R&C LIBRARY LENDS OUT A MAXIMUM OF THREE ITEMS AT ONE TIME.

Thank you for updating your phone number! Your patron information has been updated.

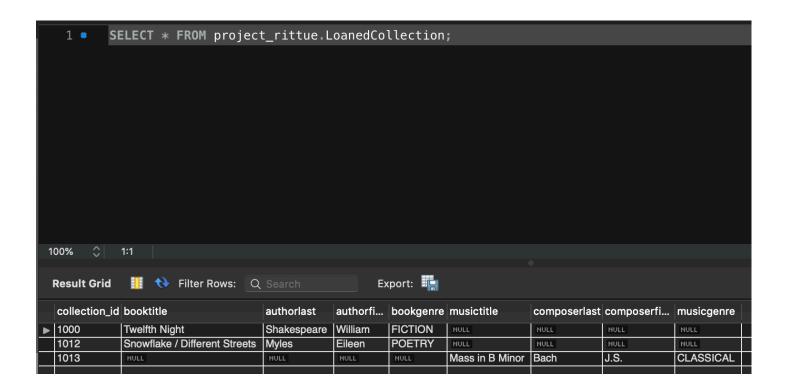
MySQL Views

View 1 – LoanedCollection

This view shows all collection items that are currently unavailable as they are out on loan. This is helpful for collection management, as well as a quick way to check if an item is available or not.

CREATE VIEW LoanedCollection AS
SELECT c.collection_id, b.booktitle, b.authorlast,
b.authorfirst, b.bookgenre, m.musictitle,
m.composerlast, m.composerfirst, m.musicgenre
FROM collection AS c
LEFT OUTER JOIN books AS b ON b.book_id = c.book_id
LEFT OUTER JOIN music AS m ON m.music_id = c.music_id
WHERE c.collection_id IN (SELECT i.collection_id AS collection_id
FROM transaction_item AS i
RIGHT JOIN transactions AS t ON t.transaction_id = i.transaction_id
WHERE t.datereturned IS NULL)

GROUP BY c.collection id;



View 2 – PatronItems

This view shows every item in the collection a patron has checked out. The retrieved data includes their borrower ID, name, and the genre, title, and creator of the item.

CREATE VIEW PatronItems AS

SELECT who.borrow_id, who.firstname, who.lastname, what.bookgenre, what.booktitle, what.authorfirst, what.authorlast, what.musicgenre, what.musictitle, what.composerfirst, what.composerlast

FROM

(SELECT t.borrow_id, b.firstname, b.lastname, i.transaction_item_id, i.collection_id FROM transaction_item AS i

INNER JOIN transactions AS t ON t.transaction_id = i.transaction_id INNER JOIN borrowers AS b ON t.borrow_id = b.borrow_id) AS who

INNER JOIN

(SELECT c.collection_id, b.booktitle, b.authorfirst, b.authorlast, b.bookgenre, m.musictitle, m.composerfirst, m.composerlast, m.musicgenre

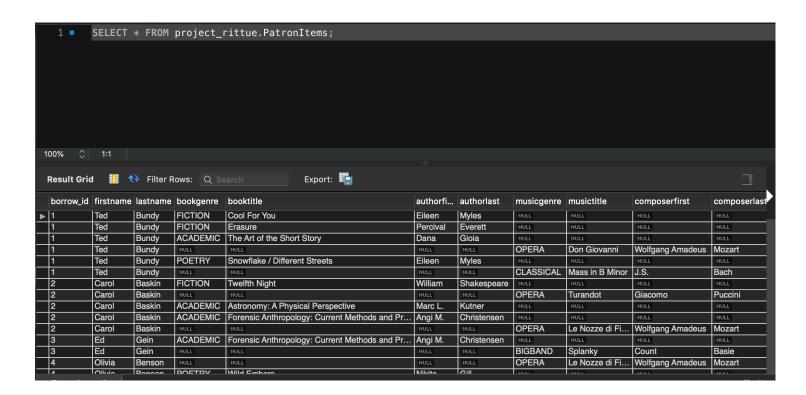
FROM collection AS c

LEFT OUTER JOIN books AS b ON b.book_id = c.book_id

LEFT OUTER JOIN music AS m ON m.music_id = c.music_id

GROUP BY c.collection_id) AS what

ON who.collection_id = what.collection_id;



Date Created: 2/8	/2020		Da	ate Modified:	Click here to	enter a dat	e.
Created By: Sierra	Rittue	Modified By: Click here to enter text.					
General Elemei	nts						
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Parent Table: colle	ection		Source Spe	cification: N	/A		
Label: Collection I	tem ID						
Shared By: transaction	ction_item						
Alias(es): N/A							
Description: This	field contains a	n items s	pecific collec	tion identifyir	ng number.		
Physical Elemen	nts						
Data Type: intege	er			r Support:			
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Operations Allow					<u> </u>		
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☐ Other Fields	□ AII	_ +		□ x	□ ÷		atenation
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Date Created: 2/8/202	20	Date Modified: Click here to enter a date.				
Created By: Sierra Ritt	ue	Modified By: Click here to enter text.				
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General Elements	1					
General Elements						
Field Name: book_id		Specification	on Type: 🗆 Ur	ique 🛚 Generi	c ⊠ Replica	
Parent Table: collection	n	Source Spe	cification: N/A			
Label: Book ID						
Shared By: books						
Alias(es): N/A						
Description: This field	will contain a book	's specific iden	ntification num	ber		
Physical Elements	<u> </u>					
Physical Elements	J					
Data Type: integer	_	Characte	r Support:			
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Key Type:	☐ Non ☐	Primary	Edit Rule:			
<u> </u>	Foreign \square	Alternate	☐ Enter N	Now, Edits Allowe	ed	
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Null Support : ⊠			·			
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Required Value:	₫ User □	System		•	llowed	
Required Value: E	d User □ d No □ 0 to 9999	System		•	llowed	
Required Value: MA Default Value: N/A Range of Values: 1000 Comparisons Allowed Same Field	d User □ d No □ 0 to 9999	System		termined At This	llowed	
Required Value: Example Default Value: N/A Range of Values: 1000 Comparisons Allowed Same Field Other Fields	d User	System Yes	□ Not De	termined At This	llowed s Time	
Required Value: Expression Required Value: N/A Range of Values: 1000 Comparisons Allowed Same Field Other Fields Value Expression	₫ User	System Yes	□ Not De	termined At This	Illowed s Time	
Required Value: Expension Range of Values: 1000 Comparisons Allowed Same Field Other Fields Value Expression Operations Allowed:	d User	System Yes	☐ Not De	termined At This	Illowed	
Required Value: Expression Required Value: N/A Range of Values: 1000 Comparisons Allowed Same Field Other Fields Value Expression	d User	System Yes	□ Not De	termined At This	Illowed 5 Time 5	
Required Value: Expension Properties of Values: 1000 Comparisons Allowed Same Field Other Fields Value Expression Operations Allowed:	d User	System Yes	☐ Not De	termined At This	Illowed	

Date Created: 2/8/20	20	Date Modified: Click here to enter a date.				
Created By: Sierra Riti	tue	Modified By: Click here to enter text.				
			-			
General Elements						
Field Name: music_id		Specification	n Type: 🗆 Un	ique 🗌 Gener	ric 🔀 Replica	
Parent Table: collection	on	Source Spe	cification: N/A			
Label: Music ID						
Shared By: music						
Alias(es): N/A						
Description: This field	l will contain a piece	of music's spe	ecific identifica	tion number		
Physical Elements						
Data Type: integer		Characte	r Support:			
Length: 4		☐ Lett	ters (A-Z)	☐ Keybo	• • • • • • • • • • • • • • • • • • • •	
Decimal Places: 0		⊠ Nur	mbers (0-9)	☐ Specia	al (© [®] ™£π)	
Input Mask: ####						
Display Format: 0000)					
Logical Elements			ı			
, ,,		Primary	Edit Rule:			
		Alternate		low, Edits Allov		
-	· · · · · · · · · · · · · · · · · · ·	Composite		low, Edits Not A		
-	<u> </u>	Jnique		ater, Edits Allov		
		No Nulls	=	ater, Edits Not		
Values Entered By: 2		System	☐ Not De	termined At Th	is Time	
<u> </u>	⊠ No □'	Yes	-			
Default Value: N/A						
Range of Values: 100						
Comparisons Allowe ☐ Same Field ☐ Other Fields ☐ Value Expression	d: □ AII □ = □ AII □ = □ AII □ =	□ > □ > □ >	>= >= >=	□ ≠ □ ≠ □ ≠	<	
Operations Allowed: ☐ Same Field ☐ Other Fields ☐ Value Expression	☐ AII ☐ + ☐ AII ☐ + ☐ AII ☐ +	 	□ x □ x □ x	□ ÷ □ ÷ □ ÷	☐ Concatenation☐ Concatenation☐ Concatenation	

Date Modified: Click here to enter a date.

Created By: Sierra Rittue	Mod	dified By: Click h	ere to enter text	
General Elements				
Field Name: book_id	Specification	Type: ⊠ Uniqu	e 🗆 Generic 🏻	☐ Replica
Parent Table: books	Source Speci	ification: N/A		
Label: Book ID				
Shared By: collection				
Alias(es): N/A				
Description: This field will contain a book's	specific ident	ification number		
Physical Elements				
Data Type: integer	Character	Support:		
Length: 4	☐ Lette	ers (A-Z)	\square Keyboard	(.,/\$#%)
Decimal Places: 0	⊠ Num	bers (0-9)	☐ Special	(© [®] ™£ π)
Input Mask: ####				
Display Format: 0000				
Logical Elements				
Key Type: ☐ Non	rimary	Edit Rule:		
☐ Foreign ☐ A	Iternate	☐ Enter Now	, Edits Allowed	
Key Structure: ⊠ Simple □ C	omposite	⊠ Enter Now	, Edits Not Allow	red
Uniqueness: ☐ Non-Unique 🗷 U	nique	☐ Enter Late	r, Edits Allowed	
Null Support : □ Nulls Allowed ⊠ N	o Nulls	☐ Enter Late	r, Edits Not Allow	ved
Values Entered By: ☐ User So	ystem	☐ Not Deter	mined At This Tin	ne
Required Value: ☐ No 🖂 Y	es			
Default Value: N/A				
Range of Values: 1000 to 9999	· 			
Comparisons Allowed:				
☐ Same Field ☐ All ☐ =	□ >	□ >=	□ ≠ □ <	□ <=
☐ Other Fields ☐ All ☐ = ☐ Value Expression ☐ All ☐ =	□ > □ >	□ >= □ >=	□≠□<	□ <= □ <=
Operations Allowed:			<u></u>	
□ Same Field □ All □ +	□ <i>-</i>	□x	□ ÷ □ Co	oncatenation
☐ Other Fields ☐ All ☐ +	_ 	□ x		oncatenation
☐ Value Expression ☐ All ☐ +	□ -	□ x	□ ÷ □ Co	oncatenation

Date Modified: Click here to enter a date.

Created By: Sierra	Rittue	Mo	odified By:	Click here to	o enter text.	
General Elemen	nts					
Field Name: author	rlast	Specificatio	n Type: 🗵	Unique 🗆	Generic [☐ Replica
Parent Table: book	CS .	Source Spec	cification:	Click here to	enter text.	
Label: Author Last	Name					
Shared By: N/A						
Alias(es): N/A						
Description: The la	st name of the author o	of the book.				
Physical Elemen	ots					
Data Type: varcha	nr	Characte	Support:			
Length: 50		⊠ Lett	ers (A	-Z) ⊠	Keyboard	(.,/\$#%)
Decimal Places: 0		☐ Nur	nbers (0-	.9) ⊠	Special	(© [®] ™£ π)
Input Mask: XXXX	X					
Display Format: A	s entered.					
Logical Elemen	ts					
Key Type:		Primary	Edit Rule	•		
		Alternate	⊠ Ent	er Now, Edit	ts Allowed	
Key Structure:	☐ Simple ☐	Composite	☐ Ent	er Now, Edit	ts Not Allow	ed
Uniqueness:	⋈ Non-Unique □	Unique	☐ Ent	er Later, Edi	ts Allowed	
Null Support :	⊠ Nulls Allowed □	No Nulls	☐ Ent	er Later, Edi	ts Not Allow	red .
Values Entered By	y: ⊠ User □	System	☐ Not	Determine	d At This Tin	ne
Required Value:	⊠ No □	Yes				
Default Value: N/	A					
Range of Values:	N/A					
Comparisons Allo	wed:					
	□ AII □ =	□ >	□ >= -	□ ≠ —	□ <	□ <= -
		-	□ >=	□ ≠		□ <=
		>	□ >=	≠		□ <=
·		□ _	\sqcap v	□∸		ncatenation
		□ –		□÷		
☐ Value Expression			□ x	□ ÷		oncatenation
☐ Same Field ☐ Other Fields ☐ Value Expression Operations Allow ☐ Same Field ☐ Other Fields	□ AII □ = □ AII □ = □ AII □ = □ AII □ + □ AII □ +	> >	□ >= □ >= □ x □ x	□ ≠ □ ≠ □ ÷ □ ÷	□ < □ < □ Cc	□ <= □ <= oncatenation oncatenation

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Мо	dified By: Click h	ere to enter text.	
Specification	n Type: ⊠ Uniqu	e 🗌 Generic 🛭	☐ Replica
Source Spec	ification: Click he	ere to enter text.	
the book.			
Character	Support:		
⊠ Lette	ers (A-Z)	⊠ Keyboard	(.,/\$#%)
☐ Num	nbers (0-9)	⊠ Special	(© [®] ™£ π)
•	Edit Rule:		
		, Edits Allowed	
omposite	\square Enter Now	, Edits Not Allow	ed
Inique	☐ Enter Late	r, Edits Allowed	
lo Nulls	☐ Enter Late	r, Edits Not Allow	/ed
ystem	\square Not Determ	mined At This Tin	ne
es			
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			oncatenation
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	Specification Source Specification The book. Character Lette	Specification Type: Unique Source Specification: Click he f the book. Character Support:	Character Support:

Date Modified: Click here to enter a date.

Created By: Sierra Rittue	М	odified By: Click	here to enter text	
General Elements				
Field Name: booktitle	Specification	on Type: 🗵 Uniq	ue 🗌 Generic 🏻	☐ Replica
Parent Table: books	Source Spe	cification: Click	nere to enter text.	
Label: Book Title				
Shared By: N/A				
Alias(es): N/A				
Description: The title of a book in our	collection.			
Physical Elements				
Data Type: varchar	Characte	r Support:		
Length: 255	⊠ Let	ters (A-Z)	⊠ Keyboard	(.,/\$#%)
Decimal Places: 0	⊠ Nu	mbers (0-9)	⊠ Special	(© [®] ™£ π)
Input Mask: XXX				
Display Format: As entered.				
Logical Elements				
Key Type: ⊠ Non	\square Primary	Edit Rule:		
☐ Foreign	☐ Alternate	⊠ Enter No	w, Edits Allowed	
Key Structure: ☐ Simple	☐ Composite	☐ Enter No	w, Edits Not Allow	ed
Uniqueness: ⊠ Non-Unique	☐ Unique	☐ Enter Lat	er, Edits Allowed	
Null Support : □ Nulls Allowed	⊠ No Nulls	☐ Enter Lat	er, Edits Not Allow	ved
Values Entered By: ⊠ User	\square System	☐ Not Dete	rmined At This Tin	ne
Required Value: No	⊠ Yes			
Default Value: N/A				
Range of Values: N/A				
Comparisons Allowed:				
☐ Same Field ☐ All ☐ :		□ >= -	□ ≠ □ <	□ <= -
Other Fields All	_	□ >=	∐ ≠	□ <=
☐ Value Expression ☐ All ☐ :	=	□ >=	□ ≠ □ <	□ <=
Operations Allowed: ☐ Same Field ☐ All ☐ -	+ □−	□x	□÷ □ Co	oncatenation
☐ Other Fields ☐ All ☐ :		□ x □ x		oncatenation
□ Value Expression □ All		□ x		oncatenation
'				

Date Modified: Click here to enter a date.

Created By: Sierra Rittue	Мо	odified By: Click l	nere to enter text	
General Elements				
Field Name: bookpubdate	Specificatio	n Type: 🗵 Uniqı	ue 🗌 Generic 🗆	☐ Replica
Parent Table: books	Source Spec	cification: Click h	ere to enter text.	
Label: Book Publication Date				
Shared By: N/A				
Alias(es): N/A				
Description: The publication date of the b	ook.			
Physical Elements				
Data Type: DATE	Character			
Length: 10	☐ Lett	ers (A-Z)	☐ Keyboard	(.,/\$#%)
Decimal Places: 0	⊠ Nun	nbers (0-9)	☐ Special	(© [®] ™£ π)
Input Mask: N/A				
Display Format: YYYY-MM-DD				
Logical Elements				
	Primary	Edit Rule:		
	Alternate	⊠ Enter Nov	w, Edits Allowed	
	Composite	☐ Enter Nov	w, Edits Not Allow	/ed
	Unique	☐ Enter Late	er, Edits Allowed	
Null Support : □ Nulls Allowed 🗵	No Nulls	☐ Enter Late	er, Edits Not Allov	ved
•	System	☐ Not Dete	mined At This Tir	ne
Required Value: □ No	Yes			
Default Value: N/A				
Range of Values: N/A				
Comparisons Allowed:	_,			П.
\Box Same Field \Box All \Box = \Box Other Fields \Box All \Box =	□ > □ >	□ >= □ >=	□ ≠ □ < □	_
□ Value Expression □ All □ =	□>	□ >=	□ ≠ □ <	
Operations Allowed:			_	
☐ Same Field ☐ All ☐ +	\Box $-$	\square x	□ ÷ □ C	oncatenation
☐ Other Fields ☐ All ☐ +	\Box $-$	\square x	□ ÷ □ C	oncatenation
☐ Value Expression ☐ AII ☐ +		□x	□ ÷ □ C	oncatenation

Date Modified: Click here to enter a date.

Created By: Sierra	Rittue		Мо	odified E	By: Click h	nere to enter to	ext.
General Elemen	ots						
Field Name: books	genre	9	Specification	n Type:	⊠ Uniqu	ue 🗌 Generic	☐ Replica
Parent Table: book	(S	9	Source Spe	cification	1: Click h	ere to enter te	xt.
Label: Book Genre							
Shared By: N/A							
Alias(es): N/A							
Description: The g	enre of the book.						
Physical Elemen	ots						
Data Type: ENUM POETRY, ACADEM	(FICTION, NONFICTIC)	ΓΙΟΝ,	Characte: ⊠ Lett		t: (A-Z)	☐ Keyboar	rd (.,/\$#%)
Length: N/A	•		☐ Nur		(0-9)	□ Special	(© [®] ™£ π)
Decimal Places: 0					(0 0)	_ opeciai	(0 2)
Input Mask: N/A							
Display Format: A	s entered.						
Logical Elemen	ts			I			
Key Type:	⊠ Non □ Foreign		mary ernate	Edit Ru ⊠ F		v, Edits Allowe	d
Key Structure:	☐ Simple	☐ Coi	mposite			v, Edits Not All	
Uniqueness:	Non-Unique	□Un				er, Edits Allowe	
Null Support :	□ Nulls Allowed		•			er, Edits Not All	
Values Entered By	y: ⊠ User	☐ Sys	stem			mined At This	
Required Value:	□ No	⊠ Yes	5	=			
Default Value: N/	A						
Range of Values:	N/A						
Comparisons Allo	wed:						
☐ Same Field	□ AII □ :		□ >	□ >=			< □<=
☐ Other Fields	:		□ > □ >	□ >= □ >=			<
☐ Value Expression Operations Allow		_	/		-	□ <i>≠</i> □	
☐ Same Field	ea:	+	\Box $-$	□x		□÷ □	Concatenation
☐ Other Fields				□ x			Concatenation
☐ Value Expression	on 🗆 All 🗀 -	+	\Box $-$	\square x		□÷ □	

Date Modified: Click here to enter a date.

Created By: Sierra Rittue	Modified By: Click here to enter text.	
General Elements		
Field Name: music_id	Specification Type: $oxtimes$ Unique \odots Generic \odots	Replica
Parent Table: music	Source Specification: Click here to enter text.	
Label: Music ID		
Shared By: N/A		
Alias(es): N/A		
Description: This field will contain a piece	f music's specific identification number.	
Physical Elements		
Data Type: integer	Character Support:	
Length: 4		(.,/\$#%)
Decimal Places: 0	$lacktriangle$ Numbers (0-9) \Box Special (© [®] ™£ π)
Input Mask: ####		
Display Format: 0000		_
Logical Elements		
	mary Edit Rule:	
-	ernate Enter Now, Edits Allowed	
	mposite Enter Now, Edits Not Allowed	t
· · ·	ique Enter Later, Edits Allowed	
Null Support : ☐ Nulls Allowed ☒ N		
-	Stem ☐ Not Determined At This Time	, ,
Required Value: ☐ No 🔀 Y	5	
Default Value: N/A		
Range of Values: 1000 to 9999		
Comparisons Allowed: ☐ Same Field ☐ All ☐ =	□> □>= □≠ □<	□ <=
☐ Other Fields ☐ All ☐ =	□> □>= □≠ □< □> □>= □≠ □<	□ <= □ <=
☐ Value Expression ☐ All ☐ =	□> □>= □≠ □<	□ <=
Operations Allowed:		
☐ Same Field ☐ All ☐ +	□ — □ x □ ÷ □ Con	catenation
\Box Other Fields \Box All \Box +	□ — □ x □ ÷ □ Con	catenation
☐ Value Expression ☐ All ☐ +	□ — □ x □ ÷ □ Con	catenation

Date Modified: Click here to enter a date.

Created By: Sierra Rittue	M	odified By: Click	here to enter tex	t.
General Elements				
Field Name: composerlast	Specification	on Type: 🔀 Unio	jue 🗌 Generic	☐ Replica
Parent Table: music	Source Spe	cification: Click	here to enter text	i.
Label: Composer Last Name				
Shared By: N/A				
Alias(es): N/A				
Description: The last name of the compose	r of the musi	c.		
Physical Elements				
Data Type: varchar		r Support:		
Length: 50	∠	ters (A-Z)	⊠ Keyboard	
Decimal Places: 0	☐ Nur	mbers (0-9)	⊠ Special	(© [®] ™£ π)
Input Mask: XXXXX				
Display Format: As entered.				
Logical Elements				
	rimary	Edit Rule:		
<u> </u>	Alternate		w, Edits Allowed	
· · · · · · · · · · · · · · · · · · ·	Composite	☐ Enter No	w, Edits Not Allo	wed
	Jnique	☐ Enter Lat	er, Edits Allowed	
Null Support : ⊠ Nulls Allowed □ N	lo Nulls	☐ Enter Lat	er, Edits Not Allo	wed
Values Entered By: ⊠ User □ S	ystem	☐ Not Dete	ermined At This Ti	me
Required Value: ⊠ No □ Y	'es			
Default Value: N/A				
Range of Values: N/A				
Comparisons Allowed:				
☐ Same Field ☐ All ☐ =	□ >	□ >=	□≠ □<	
\Box Other Fields \Box All \Box = \Box Value Expression \Box All \Box =	□ > □ >	□ >= □ >=	□≠ □<	
Operations Allowed:				<u> </u>
☐ Same Field ☐ All ☐ +	\Box $-$	□x	□÷ □ (Concatenation
☐ Other Fields ☐ All ☐ +		□ x		Concatenation
☐ Value Expression ☐ All ☐ +	□ -	□х	□÷ □(Concatenation

Date Modified: Click here to enter a date.

Created By: Sierra Rittue	Me	odified By: Click	here to enter text	
General Elements				
Field Name: composerfirst	Specification	on Type: 🗵 Unio	que 🗌 Generic 🗆	☐ Replica
Parent Table: music	Source Spe	cification: Click	here to enter text.	
Label: Author First Name				
Shared By: N/A				
Alias(es): N/A				
Description: The first name of the compos	er of the piec	e of music.		
Physical Elements				
Data Type: varchar	Characte	r Support:		
Length: 30	⊠ Lett	ters (A-Z)	⊠ Keyboard	(.,/\$#%)
Decimal Places: 0	☐ Nur	mbers (0-9)	Special	(© [®] ™£ π)
Input Mask: XXXX				
Display Format: As entered.				
Logical Elements		1		
	Primary	Edit Rule:	- 10	
	Alternate		ow, Edits Allowed	
	Composite		ow, Edits Not Allow	ved
	Unique	-	ter, Edits Allowed	
Null Support : □ Nulls Allowed ⊠		1	ter, Edits Not Allov	
	System	☐ Not Det	ermined At This Tir	me
<u> </u>	Yes	<u> </u> -		
Default Value: N/A				
Range of Values: N/A				
Comparisons Allowed:	п.			П.
☐ Same Field ☐ All ☐ = ☐ Other Fields ☐ All ☐ =	□ > □ >	□ >= □ >=	□≠ □< □≠ □<	 -
□ Value Expression □ All □ =		□ >=	□≠ □<	— ·
Operations Allowed:				
☐ Same Field ☐ All ☐ +	\Box $-$	\square x	□ ÷ □ C	oncatenation
☐ Other Fields ☐ All ☐ +	\Box $-$	\square x	□ ÷ □ C	oncatenation
☐ Value Expression ☐ All ☐ +		\square x	□ ÷ □ C	oncatenation

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Date Modified: Click here to enter a date.

Date Created: 2/8/2020

Created By: Sierra Rittue **Modified By:** Click here to enter text. **General Elements** Field Name: musicpubdate **Specification Type:** ☑ Unique ☐ Generic ☐ Replica Parent Table: music Source Specification: Click here to enter text. Label: Music Publication Date Shared By: N/A Alias(es): N/A **Description:** The publication date of a piece of music. **Physical Elements** Data Type: DATE **Character Support:** ☐ Letters (A-Z) \square Keyboard (.,/\$#%) Length: 10 (©[®] ™£ π) Numbers ☐ Special (0-9)**Decimal Places:** 0 Input Mask: N/A **Display Format:** YYYY-MM-DD **Logical Elements** ⊠ Non ☐ Primary **Edit Rule: Key Type:** ☐ Foreign ☐ Alternate ☑ Enter Now, Edits Allowed **Key Structure:** ☐ Simple ☐ Composite ☐ Enter Now, Edits Not Allowed **Uniqueness:** ☑ Non-Unique ☐ Unique ☐ Enter Later, Edits Allowed ☐ Nulls Allowed ☒ No Nulls **Null Support:** ☐ Enter Later, Edits Not Allowed Values Entered By: ⊠ User ☐ System ☐ Not Determined At This Time Required Value: □ No ✓ Yes Default Value: N/A Range of Values: N/A **Comparisons Allowed:** ☐ Same Field □ = □ > □ >= □≠ \square < □ <= ☐ Other Fields □ = □ > □ >= □ ≠ □ < □ <= $\square >$ □ >= □ <= ☐ Value Expression ☐ All $\square =$ \square < **Operations Allowed:** ☐ Same Field _ + \Box — \square x \square ÷ ☐ Concatenation \Box — ☐ Other Fields + \square x \square ÷ ☐ Concatenation _ + \Box — □÷ ☐ Value Expression ☐ All \square x ☐ Concatenation

Date Modified: Click here to enter a date.

Created By: Sierra Rittue	е	Мо	odified By	: Click here	to enter text.	
General Elements						
Field Name: musicgenre	9	Specificatio	n Type: 🗵	₫ Unique [☐ Generic [☐ Replica
Parent Table: music		Source Spec	cification:	Click here t	o enter text.	
Label: Music Genre						
Shared By: N/A						
Alias(es): N/A						
Description: The genre	of the music.					
Physical Elements						
Data Type: ENUM (CLA OPERA)	SSICAL, BIGBAND,	Character ⊠ Lett	r Support: ers (A	λ-Z) [☐ Keyboard	(.,/\$#%)
Length: N/A		☐ Nur	nbers (0) -9) [☐ Special	(© [®] ™£ π)
Decimal Places: 0					•	
Input Mask: N/A						
Display Format: As ent	ered.					
Logical Elements						
Key Type: ⊠	Non 🗆 P	rimary	Edit Rule	: :		
	Foreign \square A	Alternate	⊠ En	ter Now, Ed	its Allowed	
Key Structure:	Simple \square C	Composite	☐ En	ter Now, Ed	its Not Allow	ed
Uniqueness: ⊠	Non-Unique 🗌 L	Jnique	☐ En [.]	ter Later, Ed	dits Allowed	
Null Support:	Nulls Allowed 🔀 N	lo Nulls	☐ En	ter Later, Ed	dits Not Allow	ved .
Values Entered By: ⊠	User □ S	ystem	□ No	t Determine	ed At This Tin	ne
Required Value:	No ⊠Y	'es				
Default Value: N/A						
Range of Values: N/A						
Comparisons Allowed:						
	☐ AII	□ >	□ >=	□ ≠		□ <=
	□ AII =	□ > □ >	□>=	⊔ ≠ □ ≠		□ <= □ <=
Operations Allowed:	_ AII					
•	□ AII □ +		□x	□÷		oncatenation
	□ AII □ +		□ x	□ ÷		oncatenation
☐ Value Expression ☐	□ AII □ +	\Box $-$	\square x	□÷	Co	oncatenation

Date Modified: Click here to enter a date.

Date Created: 2/8/2020

Created By: Sierra Rittue **Modified By:** Click here to enter text. **General Elements Specification Type:** ☑ Unique ☐ Generic ☐ Replica Field Name: transaction item id Parent Table: transaction item Source Specification: N/A Label: Transaction Item ID Shared By: N/A Alias(es): N/A **Description:** This field contains the transaction item record's unique identifier. The transaction item record serves to connect an item in the collection to a specific transaction. **Physical Elements** Data Type: integer **Character Support:** ☐ Letters ☐ Keyboard (.,/\$#%)(A-Z) Length: 4 (©[®] ™£ π) ☐ Special ✓ Numbers (0-9)**Decimal Places:** 0 Input Mask: #### **Display Format: 0000 Logical Elements Key Type:** ☐ Non ☑ Primary **Edit Rule:** □ Alternate ☐ Foreign ☐ Enter Now, Edits Allowed **Key Structure:** ☐ Composite **⊠** Simple ☑ Enter Now, Edits Not Allowed **Uniqueness:** ☐ Non-Unique ☑ Unique ☐ Enter Later, Edits Allowed **Null Support:** ☐ Nulls Allowed ☒ No Nulls ☐ Enter Later, Edits Not Allowed Values Entered By: ☐ User **⊠** System ☐ Not Determined At This Time Required Value: ☐ No ✓ Yes **Default Value:** N/A Range of Values: 1000 to 9999 **Comparisons Allowed:** ☐ Same Field □ = \square > □ >= □≠ \square < □ <= □ > ☐ Other Fields □ = □ >= □ ≠ □ < □ <= ☐ Value Expression ☐ All □ = □ > □ >= □≠ \square < □ <= **Operations Allowed:** ☐ Same Field + \square x \square ÷ ☐ Concatenation ☐ Other Fields \Box -_ + \square x \square ÷ ☐ Concatenation + \Box - \square x \square ÷ ☐ Value Expression ☐ All ☐ Concatenation

Date Created: 2/8/	/2020		Date Modified: Click here to enter a date.				
Created By: Sierra	Rittue		Modified By: Click here to enter text.				
General Elemen	ots						
Field Name: collec	tion_id		Specification	on Type: 🗆 🔾	Jnique 🗆 G	eneric 🔀 R	eplica
Parent Table: tran	saction_item		Source Spe	cification: N	/A		
Label: Collection It	em ID						
Shared By: collecti	on						
Alias(es): N/A							
Description: This f	ield contains a	an item's s	pecific collec	ction identifyi	ng number.		
Physical Elemen	ots						
Data Type: intege	r		Characte	r Support:			
Length: 4			☐ Let	ters (A-Z)) 🗆 К	•	/\$#%)
Decimal Places: 0			⊠ Nu	mbers (0-9))	pecial (©) [®] ™£ π)
Input Mask: ####							
Display Format: 0	000						
	_						
Logical Elemen	ts						
Key Type:	☐ Non		Primary	Edit Rule:			
	⊠ Foreign		Alternate	☐ Enter	Now, Edits	Allowed	
Key Structure:	⊠ Simple		Composite	⊠ Enter	Now, Edits I	Not Allowed	
Uniqueness:	⊠ Non-Unio	que 🗆 l	Jnique	☐ Enter	Later, Edits	Allowed	
Null Support :	☐ Nulls Allo	wed 🖾 🛚	No Nulls	☐ Enter	Later, Edits	Not Allowed	
Values Entered By	y: □ User	\boxtimes 9	System		Determined A	At This Time	
Required Value:	\square No	⊠Y	'es				
Default Value: N/	A						
Range of Values:	1000 to 9999						
Comparisons Allo	wed:						
☐ Same Field	□ AII	□ =	□ >	□ >= -	□ ≠ —	□ <	□ <= -
☐ Other Fields	□ AII	□ =	□ >	□ >=	□ ≠	□ <	□ <=
☐ Value Expression		<u> </u>	□ >	□ >=	<u></u>	□ <	□ <=
Operations Allow ☐ Same Field	ed: □ All	□ +	П —	□x	□÷	□ Conc	atenation
☐ Other Fields	□ AII	□ +	□ -	⊔ x □ x	□÷		atenation atenation
☐ Value Expression		□ +		□ x	□÷		atenation

Date Created: 2/8	/2020	Date Modified: Click here to enter a date.					
Created By: Sierra	Rittue	Modified By: Click here to enter text.					
General Eleme	nts						
Field Name: trans	action_id		Specification	on Type: 🗆 🛭	Jnique 🗆 G	eneric 🔀 R	eplica
Parent Table: tran	nsaction_item		Source Spe	cification: N	/A		
Label: Transaction	n ID						
Shared By: transa	ctions	•					
Alias(es): N/A							
Description: This	field contains a sp	ecific tr	ansaction's	identifying n	umber.		
Physical Eleme	nts						
Data Type: intege	er		Characte	r Support:			
Length: 4			☐ Let	ters (A-Z	ː) □ Ke	•	/\$#%)
Decimal Places: ()		⊠ Nu	mbers (0-9)	pecial (@) [®] ™£ π)
Input Mask: ####	ŧ						
Display Format:	0000						
Logical Elemen							
Key Type:	□ Non		imary	Edit Rule:			
	⊠ Foreign		ternate	1	r Now, Edits A		
Key Structure:	⊠ Simple		omposite	■ Ente	r Now, Edits N	Not Allowed	
Uniqueness:	⊠ Non-Unique		nique	☐ Ente	r Later, Edits	Allowed	
Null Support :	☐ Nulls Allowe	d ⊠ N	o Nulls	☐ Ente	r Later, Edits	Not Allowed	
Values Entered B	y: □ User	⊠Sy	rstem	☐ Not I	Determined A	t This Time	
Required Value:	□ No	⊠Ye	es				
Default Value: N	/A						
Range of Values:	1000 to 9999						
Comparisons Allo		_	_	_	_	_	_
☐ Same Field] =	□ >	□ >=	□ ≠	□ <	□ <=
☐ Other Fields ☐ Value Expressi		」= □=	□ > □ >	□ >= □ >=	⊔≠ □≠	□ < □ <	□ <= □ <=
			□ /	□ >=	□ ₹	□ <	
Operations Allow ☐ Same Field] +	\Box —	□x	□÷	□ Conc	atenation
☐ Other Fields		_ ·] +		□ x	□· □÷		atenation
☐ Value Expressi		_ +	\Box $-$	□ x	□ ÷		atenation

Date Created: 2/8/2020	Date Modified: Click here to enter a date.						
Created By: Sierra Rittue	Мо	odified By: Click here to enter text.					
·							
General Elements							
Field Name: transaction_id	Specification	on Type: ⊠ Unique □ Generic □ Replica					
Parent Table: transactions	 	ecification: N/A					
Label: Transaction ID		edication. N/A					
Shared By: transaction_item Alias(es): N/A							
Description: This field contains a specific	transaction's i	identifying number					
Description: This field contains a specific	transaction s	identifying fidiliber.					
Physical Elements							
Data Type: integer	Characte	r Support:					
Length: 4	☐ Lett	, , , , , , , , , , , , , , , , , , , ,					
Decimal Places: 0	⊠ Nur	mbers (0-9) □ Special (© [®] ™£ π)					
Input Mask: ####							
Display Format: 0000							
Logical Elements							
Key Type: □ Non ⊠	Primary	Edit Rule:					
☐ Foreign ☐	Alternate	☐ Enter Now, Edits Allowed					
Key Structure: \boxtimes Simple \square	Composite	☑ Enter Now, Edits Not Allowed					
Uniqueness: ☐ Non-Unique ☒							
oniqueness.	Unique	☐ Enter Later, Edits Allowed					
<u> </u>	Unique No Nulls	☐ Enter Later, Edits Allowed☐ Enter Later, Edits Not Allowed☐					
Null Support : □ Nulls Allowed ⊠	•	-					
Null Support : □ Nulls Allowed Values Entered By: □ User	No Nulls	☐ Enter Later, Edits Not Allowed					
Null Support : □ Nulls Allowed Values Entered By: □ User	No Nulls System	☐ Enter Later, Edits Not Allowed					
Null Support : □ Nulls Allowed ⋈ Values Entered By: □ User ⋈ Required Value: □ No ⋈	No Nulls System	☐ Enter Later, Edits Not Allowed					
Null Support : □ Nulls Allowed ☒ Values Entered By: □ User ☒ Required Value: □ No ☒ Default Value: N/A	No Nulls System	☐ Enter Later, Edits Not Allowed					
Null Support: □ Nulls Allowed ☑ Values Entered By: □ User ☑ Required Value: □ No ☑ Default Value: N/A Range of Values: 1000 to 9999 Comparisons Allowed: □ All □ =	No Nulls System	☐ Enter Later, Edits Not Allowed ☐ Not Determined At This Time ☐ >= ☐ ≠ ☐ < ☐ <=					
Null Support: □ Nulls Allowed ☑ Values Entered By: □ User ☑ Required Value: □ No ☑ Default Value: N/A Range of Values: 1000 to 9999 Comparisons Allowed: □ All □ = □ Other Fields □ All □ =	No Nulls System Yes	☐ Enter Later, Edits Not Allowed ☐ Not Determined At This Time ☐ >= ☐ ≠ ☐ < ☐ <= ☐ <= ☐ <= ☐ <= ☐ <= ☐ <=					
Null Support: □ Nulls Allowed ☑ Values Entered By: □ User ☑ Required Value: □ No ☑ Default Value: N/A Range of Values: 1000 to 9999 Comparisons Allowed: □ All □ = □ Other Fields □ All □ = □ Value Expression □ All □ =	No Nulls System Yes	☐ Enter Later, Edits Not Allowed ☐ Not Determined At This Time ☐ >= ☐ ≠ ☐ < ☐ <=					
Null Support: □ Nulls Allowed ☑ Values Entered By: □ User ☑ Required Value: □ No ☑ Default Value: N/A Range of Values: 1000 to 9999 Comparisons Allowed: □ All □ = □ Other Fields □ All □ = □ Value Expression □ All □ = □ Operations Allowed:	No Nulls System Yes	☐ Enter Later, Edits Not Allowed ☐ Not Determined At This Time ☐ >= ☐ ≠ ☐ < ☐ <= ☐ <= ☐ <= ☐ <= ☐ <= ☐ <=					
Null Support: □ Nulls Allowed ☑ Values Entered By: □ User ☑ Required Value: □ No ☑ Default Value: N/A Range of Values: 1000 to 9999 Comparisons Allowed: □ All □ = □ Other Fields □ All □ = □ Value Expression □ All □ =	No Nulls System Yes	☐ Enter Later, Edits Not Allowed ☐ Not Determined At This Time ☐ >= ☐ ≠ ☐ < ☐ <= ☐ <= ☐ <= ☐ <= ☐ <= ☐ <=					

Date Created: 2/8/2020	Da	Date Modified: Click here to enter a date.				
Created By: Sierra Rittue	M	Modified By: Click here to enter text.				
·		·				
General Elements						
General Elements						
Field Name: totalitems	Specification	on Type: 🗵 🖯	nique 🗌 G	eneric 🗌 R	eplica	
Parent Table: transactions	Source Spe	cification: N/	A			
Label: Total Items						
Shared By: N/A						
Alias(es): N/A						
Description: This field contains the total	number of ite	ms associated	with this tra	nsaction.		
Physical Elements						
Data Type: ENUM (1, 2, 3)		r Support:				
Length: N/A	☐ Let	ters (A-Z)	☐ Ke	•	/\$#%)	
Decimal Places: N/A \boxtimes Numbers (0-9) \square Special (\bigcirc [®] $^{\text{m}}$ £ π)						
Input Mask: N/A						
Display Format: As entered.						
Logical Elements						
Key Type: ⊠ Non □	Primary	Edit Rule:				
☐ Foreign ☐	Alternate	☐ Enter	Now, Edits A	Allowed		
Van Chunchuna Cinania	Composite					
Key Structure: ☐ Simple ☐	Composite		Now, Edits N	Not Allowed		
	Unique		Now, Edits N Later, Edits			
	Unique	☐ Enter	Later, Edits			
Uniqueness: ⊠ Non-Unique □ Null Support : □ Nulls Allowed ⊠	Unique	☐ Enter☐ Enter☐	Later, Edits	Allowed Not Allowed		
Uniqueness: ⊠ Non-Unique □ Null Support : □ Nulls Allowed ⊠ Values Entered By: ⊠ User □	Unique No Nulls	☐ Enter☐ Enter☐	Later, Edits /	Allowed Not Allowed		
Uniqueness: ⊠ Non-Unique □ Null Support : □ Nulls Allowed ⊠ Values Entered By: ⊠ User □	Unique No Nulls System	☐ Enter☐ Enter☐	Later, Edits /	Allowed Not Allowed		
Uniqueness: ⊠ Non-Unique □ Null Support : □ Nulls Allowed ⊠ Values Entered By: ⊠ User □ Required Value: □ No ⊠	Unique No Nulls System	☐ Enter☐ Enter☐	Later, Edits /	Allowed Not Allowed		
Uniqueness: ⊠ Non-Unique □ Null Support : □ Nulls Allowed ⊠ Values Entered By: ⊠ User Required Value: □ No ⊠ Default Value: N/A	Unique No Nulls System	☐ Enter☐ Enter☐	Later, Edits /	Allowed Not Allowed		
Uniqueness:	Unique No Nulls System Yes	☐ Enter☐ Enter☐	Later, Edits /	Allowed Not Allowed		
Uniqueness:	Unique No Nulls System Yes	☐ Enter ☐ Enter ☐ Not D	Later, Edits A Later Edits A etermined A	Allowed Not Allowed It This Time	<=	
Uniqueness:	Unique No Nulls System Yes	☐ Enter ☐ Enter ☐ Not D	Later, Edits A Later, Edits A etermined A	Allowed Not Allowed It This Time		
Uniqueness: Non-Unique Null Support: Nulls Allowed Values Entered By: User Required Value: No Default Value: N/A Range of Values: N/A Comparisons Allowed: Same Field All = Other Fields All = Other Fields All = Operations Allowed:	Unique No Nulls System Yes	☐ Enter ☐ Enter ☐ Not D ☐ >= ☐ >= ☐ >=	Later, Edits A Later Edits A etermined A	Allowed Not Allowed It This Time	□ <= □ <=	
Uniqueness:	Unique No Nulls System Yes	☐ Enter ☐ Enter ☐ Not D	Later, Edits A Later Edits A etermined A	Allowed Not Allowed It This Time	<=	

Date Created: 2/8/2020	Date Modified: Click here to enter a date.					
Created By: Sierra Rittue	Modified By: Click here to enter text.					
·		•				
General Elements						
General Elements						
Field Name: dateout	Specification	on Type: 🗵 🖯	nique 🗌 G	eneric 🗌 R	eplica	
Parent Table: transactions	Source Spe	cification: N/	'A			
Label: Date Out						
Shared By: N/A						
Alias(es): N/A						
Description: This field contains start dat	e of a transacti	ion, or the day	the items w	ent out on lo	oan.	
Physical Elements						
Data Type: DATE	Characte	r Support:				
Length: 10	□ Let	ters (A-Z)	□ Ke	•	/ \$#%)	
Decimal Places: N/A \Join Numbers (0-9) \sqcap Special (\reals $^{\circledR}$ $^{\circledR}$ £ $π$)						
Input Mask: N/A						
Display Format: YYYY-MM-DD						
Logical Elements						
Key Type: ⊠ Non] Primary	Edit Rule:				
☐ Foreign ☐	Alternate	☐ Enter	Now, Edits A	llowed		
	Alternate Composite		Now, Edits A			
Key Structure: ☐ Simple ☐		⊠ Enter	•	lot Allowed		
Key Structure: ☐ Simple ☐	Composite Unique	⊠ Enter □ Enter	Now, Edits N	Not Allowed Allowed		
Key Structure: □ Simple Uniqueness: ⋈ Non-Unique Null Support : □ Nulls Allowed	Composite Unique	⊠ Enter □ Enter □ Enter	Now, Edits N Later, Edits	Not Allowed Allowed Not Allowed		
Key Structure: □ Simple Uniqueness: ⋈ Non-Unique Null Support : □ Nulls Allowed Values Entered By: □ User	Composite Unique No Nulls	⊠ Enter □ Enter □ Enter	Now, Edits N Later, Edits A Later, Edits I	Not Allowed Allowed Not Allowed		
Key Structure: □ Simple Uniqueness: ⋈ Non-Unique Null Support : □ Nulls Allowed Values Entered By: □ User	Composite Unique No Nulls System	⊠ Enter □ Enter □ Enter	Now, Edits N Later, Edits A Later, Edits I	Not Allowed Allowed Not Allowed		
Key Structure: □ Simple Uniqueness: ⋈ Non-Unique Null Support : □ Nulls Allowed Values Entered By: □ User Required Value: □ No	Composite Unique No Nulls System	⊠ Enter □ Enter □ Enter	Now, Edits N Later, Edits A Later, Edits I	Not Allowed Allowed Not Allowed		
Key Structure: □ Simple Uniqueness: ⋈ Non-Unique Null Support: □ Nulls Allowed Values Entered By: □ User Required Value: □ No Default Value: N/A	Composite Unique No Nulls System	⊠ Enter □ Enter □ Enter	Now, Edits N Later, Edits A Later, Edits I	Not Allowed Allowed Not Allowed		
Key Structure: □ Simple Uniqueness: ⋈ Non-Unique Null Support: □ Nulls Allowed Values Entered By: □ User Required Value: □ No Default Value: N/A Range of Values: N/A Comparisons Allowed: □ All □ Same Field □ All	Composite Unique No Nulls System Yes	⊠ Enter □ Enter □ Enter	Now, Edits N Later, Edits A Later, Edits I	Not Allowed Allowed Not Allowed		
Key Structure: □ Simple Uniqueness: ⋈ Non-Unique Null Support : □ Nulls Allowed Values Entered By: □ User Required Value: □ No Default Value: N/A Range of Values: N/A Comparisons Allowed: □ All □ Same Field □ All □ Other Fields □ All	Composite Unique No Nulls System Yes	⊠ Enter □ Enter □ Not D □ >= □ >=	Now, Edits N Later, Edits I Later, Edits I etermined A	Not Allowed Allowed Not Allowed t This Time	<=	
Key Structure: □ Simple Uniqueness: ⋈ Non-Unique Null Support: □ Nulls Allowed Values Entered By: □ User Required Value: □ No Default Value: N/A Range of Values: N/A Comparisons Allowed: □ All □ Same Field □ All □ Other Fields □ All □ Value Expression □ All □ Value Expression □ All	Composite Unique No Nulls System Yes	⊠ Enter ☐ Enter ☐ Not D	Now, Edits N Later, Edits I Later, Edits I etermined A	Not Allowed Allowed Not Allowed t This Time	<u> </u>	
Key Structure: Simple Uniqueness: ⋈ Non-Unique Null Support: Nulls Allowed Values Entered By: User Required Value: No Default Value: N/A Range of Values: N/A Comparisons Allowed: All Same Field All Other Fields All Value Expression All Operations Allowed:	Composite Unique No Nulls System Yes	⊠ Enter ☐ Enter ☐ Not D ☐ >= ☐ >= ☐ >=	Now, Edits N Later, Edits I Later, Edits I etermined A	Not Allowed Allowed Not Allowed t This Time	□ <= □ <=	
Key Structure: □ Simple Uniqueness: ⋈ Non-Unique Null Support: □ Nulls Allowed Values Entered By: □ User Required Value: □ No Default Value: N/A Range of Values: N/A Comparisons Allowed: □ All □ Same Field □ All □ Other Fields □ All □ Value Expression □ All □ Value Expression □ All	Composite Unique No Nulls System Yes	⊠ Enter □ Enter □ Not D □ >= □ >=	Now, Edits N Later, Edits I Later, Edits I etermined A	Not Allowed Allowed Not Allowed t This Time	<=	

Date Created: 2/8/	/2020		Date Modified: Click here to enter a date.					
Created By: Sierra	Rittue		Modified By: Click here to enter text.					
-				-				
General Elemen	ots							
Field Name: dater	eturned		Specification	on Type: 🗵 U	Jnique 🗌 G	eneric 🗌 R	eplica	
Parent Table: trans	sactions		Source Spe	cification: N	/A			
Label: Date Return	ed							
Shared By: N/A								
Alias(es): N/A								
Description: This f	field contains t	he date a	transaction v	was complete	d and its iter	ms returned.		
Physical Elemen	ots							
Data Type: DATE				r Support:			Id uo ()	
Length: 10			☐ Let	, ,			/\$#%) ®	
Decimal Places: N/A) [™] f π)	
Input Mask: N/A								
Display Format: Y	YYY-MM-DD							
	_							
Logical Elemen	ts							
Key Type:	⊠Non	□ P	rimary	Edit Rule:				
	☐ Foreign		lternate	☐ Enter	Now, Edits	Allowed		
Key Structure:	☐ Simple		Composite	☐ Enter	Now, Edits I	Not Allowed		
Uniqueness:	⊠ Non-Unio	que 🗆 L	Inique	☐ Enter	Later, Edits	Allowed		
Null Support :	⊠ Nulls Allo	wed 🗆 N	lo Nulls		Later, Edits	Not Allowed		
Values Entered By	y: ⊠ User	\square S	ystem	☐ Not D	etermined A	at This Time		
Required Value:	⊠ No	□ Y	'es					
Default Value: N/	A							
Range of Values:	N/A							
Comparisons Allo	wed:							
☐ Same Field	☐ AII	□ =	□ >	□ >=	□ ≠	□ <	□ <=	
☐ Other Fields	□ AII	□ =	□ >	□ >=	□ ≠	□ <	□ <=	
☐ Value Expression		=	□ >	□ >=	<u></u> ≠	□ <	□ <=	
Operations Allow ☐ Same Field	ed: □ All	□ +		□x	□÷	□ Cons	atenation	
☐ Other Fields		□ +		□ x	□÷		atenation	
☐ Value Expression		□ +		□ x	□· □÷		atenation	

Date Created: 2/8	3/2020		Da	Date Modified: Click here to enter a date.				
Created By: Sierra	Rittue		M	Modified By: Click here to enter text.				
General Eleme	nts							
General Eleme			v					
Field Name: borro	ow_id		Specification	on Type: \Box \cup	Inique 🗌 G	eneric 🔀 R	teplica	
Parent Table: tran	nsactions		Source Spe	cification: N	′ A			
Label: Borrower I	D							
Shared By: borrow	wers							
Alias(es): N/A								
Description: This	field contains a	borrowe	r's unique ide	entifying num	ber.			
Physical Eleme	nts							
Data Type: integ	er		Characte	r Support:				
Length: 4			☐ Let	ters (A-Z)	□ Ke	•	/\$#%)	
Decimal Places:)		⊠ Nui	mbers (0-9)	□ Sp	pecial (©) [®] ™£ π)	
Input Mask: ###	‡							
Display Format:	0000							
Logical Elemei	nts							
Key Type:	Non		Primary	Edit Rule:				
	⊠ Foreign		Alternate	☐ Enter	Now, Edits A	Allowed		
Key Structure:	⊠ Simple		Composite	⊠ Enter	Now, Edits N	Not Allowed		
Uniqueness:	⊠ Non-Uniq	ue 🗆 l	Jnique	☐ Enter	Later, Edits	Allowed		
Null Support :	☐ Nulls Allo	wed ⊠I	No Nulls	☐ Enter	Later, Edits	Not Allowed		
Values Entered B	s y: 🗆 User	\boxtimes	System	☐ Not D	etermined A	t This Time		
Required Value:	□ No	⊠'	⁄es					
Default Value: N	/A							
Range of Values:	1000 to 9999							
Comparisons Alle	owed:							
☐ Same Field	□ AII	<u> </u>	□ >	□ >=	□ ≠	□ <	□ <= -	
☐ Other Fields	□ AII	□ =	□>	□ >=	□ ≠	□ <	□ <=	
☐ Value Express		<u> </u>	□>	□ >=	≠	□ <	□ <=	
Operations Allov ☐ Same Field		□ .		□x	\Box .	□ Co.s.s	atonation	
☐ Other Fields	□ AII □ AII	□ + □ +	□ –	⊔ x □ x	⊔÷ □÷		atenation atenation	
☐ Value Express		□ +	□ -	□ x	□÷		atenation	

Date Created: 2/8	/2020	Date Modified: Click here to enter a date.					
Created By: Sierra	Rittue	Modified By: Click here to enter text.					
General Elemei	nts						
Field Name: borro	w_id		Specification	on Type: 🗵 U	Jnique \square G	eneric \square R	eplica
Parent Table: born	rowers		Source Spe	cification: N	/A		
Label: Borrower IC)						
Shared By: transac	ctions		-				
Alias(es): N/A							
Description: This	field contains a	borrowe	r's unique id	entifying num	ber.		
Physical Elemer	nts						
Data Type: intege	er			r Support:			
Length: 4			☐ Let	ters (A-Z))	•	/\$#%)
Decimal Places: 0			⊠ Nu	mbers (0-9)) □ Sp	pecial (©) [®] ™£ π)
Input Mask: ####	!						
Display Format: 0	0000						
Logical Elemen				1			
Key Type:	☐ Non		Primary Alternate	Edit Rule:	- 1		
V a Ct at	☐ Foreign				Now, Edits A		
Key Structure:	⊠ Simple		Composite		Now, Edits N		
Uniqueness:	☐ Non-Unic		Unique	1	Later, Edits		
Null Support :	□ Nulls Allo			=	Later, Edits		
Values Entered B	•		System		Determined A	t This Time	
Required Value:	□ No	<u>⊠</u>	Yes				
Default Value: N/	'A						
Range of Values:							
Comparisons Allo							
☐ Same Field☐ Other Fields	□ AII □ AII	□=	□ > □ >	□ >= □ >=	∐ ≠ □ -	□ <	□ <= □ <=
☐ Value Expressi		□=	□ >	□ >= □ >=	⊔≠ □≠	□ <	□ <= □ <=
Operations Allow					<i>_</i>		
☐ Same Field	□ All	□ +	\Box $-$	□ x	□÷	☐ Conc	atenation
☐ Other Fields	□ All	_ _ +		□ x	□ ÷		atenation
☐ Value Expressi	on 🗆 All	□ +	\Box $-$	\square x	□÷	☐ Conc	atenation

Date Created: 2/8/	2020	Date Modified: Click here to enter a date.					
Created By: Sierra	Rittue	Modified By: Click here to enter text.					
,							
General Elemen							
General Elemen							
Field Name: firstna	me		Specification	on Type: 🗵 U	nique 🗆 G	eneric 🗆 R	eplica
Parent Table: borro	wers		Source Spe	cification: Cli	ck here to e	nter text.	
Label: First Name							
Shared By: N/A							
Alias(es): N/A							
Description: The bo	rrower's first	name.					
Physical Flomon	+						
Physical Elemen	ts]						
Data Type: varcha	r		Characte	r Support:			
Length: 30			⊠ Let	ters (A-Z)	⊠ Ke	eyboard (.,,	/\$#%)
Decimal Places: 0			☐ Nui	mbers (0-9)	⊠Sp	pecial (©) [®] ™£ π)
Input Mask: XXXX	X						
Display Format: A	s entered.						
Logical Elemen	ts						
Key Type:	⊠ Non	□ P	rimary	Edit Rule:			
	☐ Foreign		lternate		Now, Edits A	Allowed	
Key Structure:	\square Simple	□ c	omposite	☐ Enter	Now, Edits N	Not Allowed	
Uniqueness:	⊠ Non-Uni	que 🗆 L	Inique	☐ Enter	Later, Edits	Allowed	
Null Support :	⊠ Nulls Allo	owed 🗆 N	lo Nulls	☐ Enter	Later, Edits	Not Allowed	
Values Entered By	y: ⊠ User	□ S	ystem	☐ Not D	etermined A	t This Time	
Required Value:	⊠ No	□ Y	es				
Default Value: N/A	4						
Range of Values:	N/A			-			
Comparisons Allo	wed:						
☐ Same Field	\square All	□ =	□ >	□ >=	□ ≠	□ <	□ <=
☐ Other Fields	☐ AII	□ =	□ > _	□ >=	□ ≠	□ <	□ <=
☐ Value Expression		<u> </u>	□>	□ >=	□ ≠	□<	□ <=
Operations Allow							
☐ Same Field	☐ AII	_ + _		□ x	□ ÷		atenation
☐ Other Fields	☐ AII	□ + □ .		□ x	□÷ □·		atenation
☐ Value Expression	on 🗌 All	_ +	\Box $-$	\square x	□÷	☐ Conc	atenation

Date Created: 2/8	/2020	Date Modified: Click here to enter a date.					
Created By: Sierra	Rittue		Modified By: C	lick here to enter te	xt.		
General Elemen	nts						
Field Name: lastna	me	Specifica	ation Type: 🛛 🕻	Jnique 🗌 Generic	☐ Replica		
Parent Table: borr	owers	Source S	pecification: Cl	ick here to enter tex	rt.		
Label: Last Name							
Shared By: N/A							
Alias(es): N/A							
Description: The be	orrower's last nam	ne.					
Physical Elemer	ots						
Data Type: varcha	nr	Charac	cter Support:				
Length: 50		ا 💢 ا	_etters (A-Z	X Keyboard	d (.,/\$#%)		
Decimal Places: 0		1 🗆	Numbers (0-9)	⋉ Special	(© [®] ™£ π)		
Input Mask: XXXX		<u>.</u>					
Display Format: A	s entered.						
Logical Elemen	ts						
Key Type:	⊠ Non	☐ Primary	Edit Rule:				
	☐ Foreign	☐ Alternate		Now, Edits Allowed			
Key Structure:	☐ Simple	☐ Composite	☐ Enter	Now, Edits Not Allo	wed		
Uniqueness:	☑ Non-Unique	☐ Unique	☐ Enter	Later, Edits Allowed	b		
Null Support :	☑ Nulls Allowe	d 🗆 No Nulls	☐ Enter	Later, Edits Not Allo	owed		
Values Entered B	y : ⊠ User	\square System		etermined At This T	ime		
Required Value:	⊠ No	☐ Yes					
Default Value: N/	A						
Range of Values:	N/A		·				
Comparisons Allo							
☐ Same Field] =	□ >=	□ ≠ □			
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		>	⊔ >=	+			
Operations Allow ☐ Same Field]+	□x	□÷ □	Concatenation		
☐ Other Fields]+	□ x		Concatenation		
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Date Created: 2/8/2020			Date Modified: Click here to enter a date.					
Created By: Sierra Rittue		Modified By: Click here to enter text.						
•				•				
General Element								
General Element		Ţ						
Field Name: phone			Specification Type: ☑ Unique ☐ Generic ☐ Replica					
Parent Table: borrowers			Source Specification: N/A					
Label: Phone Numb								
Shared By: N/A								
Alias(es): N/A								
Description: This field contains a borrower's phone number.								
Physical Elements								
Pnysicai Element	.s							
Data Type: numeric			Character Support:					
Length: 12			☐ Letters (A-Z) ☐ Keyboard (.,/\$#%)				/\$#%)	
Decimal Places: 0			⊠ Numbers (0-9) ☐ Special (© [®] ™£ π)					
Input Mask: ####								
Display Format: ###-####								
Logical Elements								
Key Type: ⊠ Non □ Primary		rimary	Edit Rule:					
	☐ Foreign	☐ Alternate		☑ Enter Now, Edits Allowed				
Key Structure:	\square Simple	\Box C	omposite	☐ Enter Now, Edits Not Allowed				
Uniqueness:	Non-Uni	que 🗆 U	nique	☐ Enter Later, Edits Allowed				
Null Support : ⊠ Nulls Allowed □ No Nulls				☐ Enter Later, Edits Not Allowed				
Values Entered By: ⊠ User ☐ System			ystem	☐ Not Determined At This Time				
Required Value: ⊠ No □ Ye			es					
Default Value: N/A	l							
Range of Values: N	I/A			1				
Comparisons Allov	ved:							
☐ Same Field	\square All	□ =	□ >	□ >=	□≠	□ <	□ <=	
☐ Other Fields	\square All	□ =	□ >	□ >=	□ ≠	□ <	□ <=	
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Operations Allowed:								
☐ Same Field	□ All	<u> </u>		□ x	□ ÷	☐ Concatenation		
☐ Other Fields	□ All	_ +		□ x	□÷		atenation 	
☐ Value Expressio	n 🗌 All	□ +	\Box $-$	\square x	□ ÷	☐ Conc	atenation	

PHP & HTML

Search Page – rclsearchpage.php

```
<form id="search-form" name="search" method="POST" action="rclsearch.php">
 <h3>Collection Type:</h3>
   <input type="radio" id="radio" name="collection" value="books">Books
   <input type="radio" id="radio" name="collection" value="music">Music
   <br >
 <input type="text" name="search" placeholder="Search">
 <br/>>
 <center><button type="submit" name="submit-
search">Search</button></center></r>
</form>
Search Results - rclsearch.php
<?php
$sql = "SELECT count(*) AS count FROM collection";
$result = mysqli query($con,$sql)
or die('Error: '. mysql error());
$row = mysqli fetch assoc($result);
if ( $row['count']==0)
  die ("Sorry, we could not complete your search");
$collection = $ POST['collection'];
$search = mysqli real escape string($con, $ POST['search']);
//this query identifies all titles in our collection and then compares the title and first and last
names to the search term
$sql = "SELECT c.collection id, b.booktitle, b.authorlast, b.authorfirst, b.bookgenre,
m.musictitle, m.composerlast, m.composerfirst, m.musicgenre
      FROM collection AS c
  LEFT OUTER JOIN books AS b ON b.book id = c.book id
```

```
LEFT OUTER JOIN music AS m ON m.music id = c.music id
  WHERE b.booktitle LIKE '%$search%'
   OR b.authorlast LIKE '%$search%'
   OR b.authorfirst LIKE '%$search%'
   OR b.bookgenre LIKE '%$search%'
   OR m.musictitle LIKE '%$search%'
   OR m.composerlast LIKE '%$search%'
   OR m.composerfirst LIKE '%$search%'
   OR m.musicgenre LIKE '%$search%'
  GROUP BY c.collection id;";
$result = mysqli query($con,$sql);
//this query pulls in the search results based on the collection type selected
if (isset($ POST['submit-search'])) {
 $search = mysqli real escape string($con, $ POST['search']);
  if ($ POST['collection'] == 'books') {
   $result = mysqli query($con,$sql);
   $queryResult = mysqli num rows($result);
   if (queryResult > 0) {
    while ($row = mysqli fetch assoc($result)) {
      echo "<center><div class='results-box'>
        <h2>".$row['booktitle']."</h2>
        ".$row['authorfirst']." ".$row['authorlast']."
        ".$row['bookgenre']."
      </div></center>";
  if (\text{queryResult} = 0) {
   while ($row = mysqli fetch assoc($result)) {
    echo "<center>Sorry, no items in our book collection match your search.</center>";
 if ($ POST['collection'] == 'music') {
  $result = mysqli query($con,$sql);
  $queryResult = mysqli num rows($result);
  if (queryResult > 0) {
   while ($row = mysqli fetch assoc($result)) {
    echo "<center><div class='results-box'>
```

```
<h2>".$row['musictitle']."</h2>
       ".$row['composerfirst']." ".$row['composerlast']."
       ".$row['musicgenre']."
    </div></center>";
   if (\text{queryResult} = 0) {
    while ($row = mysqli fetch_assoc($result)) {
      echo "<center>Sorry, no items in our music collection match your search.</center>";
//mysqli close($con);
?>
Register Form – rclregister.php
<form action="registersuccess.php" method="post">
              First Name: <input type="text" name="firstname" />
              Last Name: <input type="text" name="lastname" />
              Phone Number: <input type="text" name="phone" />
              <div class="submit">
                     >
                            <input type="submit" name="button" value="Register"</pre>
id="submit" class="collapsible"/>
                     </div>
       </form>
Register Success PHP Insert – registersuccess.php
<?php
$firstname = mysqli real escape string($con, $ POST['firstname']);
$lastname = mysqli real escape string($con, $ POST['lastname']);
$phone = mysqli real escape string($con, $ POST['phone']);
$sql = "INSERT INTO borrowers (firstname, lastname, phone)
VALUES ('$firstname', '$lastname', '$phone')"
```

```
mysqli query($con,$sql)
or die('Error: Could not execute.' . mysql_error());
$register = "SELECT borrow id FROM borrowers
 WHERE firstname = '$firstname'
 AND lastname = '$lastname'
 AND phone = '$phone'"
$result = mysqli query($con, $register);
$queryResult = mysqli num rows($result);
if (queryResult > 0) {
 while ($row = mysqli fetch assoc($result)) {
echo "<center>Thank you for registering! Your information has been added to our patron
list";
echo "Your Borrower ID is " . $row['borrow id'] . ".</center>";
mysqli close($con);
?>
Update Phone Number Form - rclregister.php
<form action="rclupdate.php" method="post">
  Borrower ID: <input type="text" name="borrow id" />
  <br/>>
  First Name: <input type="text" name="firstname" />
  Last Name: <input type="text" name="lastname" />
  Phone Number: <input type="text" name="phone" />
  <br/>>
  NEW Phone Number: <input type="text" name="newphone" />
  <div class="submit">
   >
    <input type="submit" name="button" value="Update" id="submit" class="collapsible"/>
   </div>
 </form>
```

```
Update Phone Number - rclupdate.php
```

```
<?php
$borrowid = mysqli real escape string($con, $ POST['borrow id']);
$newphone = mysqli real escape string($con, $ POST['newphone']);
$sql = "UPDATE borrowers SET phone = '$newphone'
 WHERE borrow id = '$borrowid';"
mysqli query($con,$sql)
or die('Error: Could not execute.' . mysql_error());
echo "<center>Thank you for updating your phone number! Your patron information has been
updated.</center>";
mysqli close($con);
?>
Unsubscribe Borrower Form - rclregister.php
<form action="rclremove.php" method="post">
  Borrower ID: <input type="text" name="borrower id" />
  <br/>>
  <div class="submit">
   >
    <input type="submit" name="unsubscribe" value="Unsubscribe" id="submit"
class="collapsible"/>
   </div>
 </form>
Unsubscribe Borrower Success – rclremove.php
<?php
if (isset($ POST['unsubscribe'])) {
$borrowerid = mysqli real escape string($con, $ POST['borrower id']);
$sql = "DELETE FROM borrowers
 WHERE borrow id = '$borrowerid';"
```

```
mysqli_query($con,$sql)
or die('Error: Could not execute.' . mysql_error());
echo "<center>You have successfully been removed from our patron list. Best wishes!</center>";
}
mysqli_close($con);
?>
```

LINK TO SCREENCAST:

https://youtu.be/DjEOG_q_mj8