Music Artists

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SQL Server

My database project covers different music artists, their albums, songs, and labels. Each label has an auto incremented ID, name, street, city, state, zip code, and phone number. Each artist has an auto incremented ID, name, and connected label ID. Each album has an auto incremented ID and a name. Each song has an auto incremented ID, connected artist ID, connected album ID, name, release date, and duration.

Graphical user interface

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# **Tables**

IF EXISTS (SELECT \* FROM sys.databases WHERE name = 'MusicArtistMCB')

BEGIN

DROP DATABASE MusicArtistMCB;

END;

CREATE DATABASE MusicArtistMCB;

GO

USE MusicArtistMCB;

IF OBJECT\_ID(N'dbo.Albums', N'U') IS NOT NULL

DROP TABLE [dbo].[Albums];

CREATE TABLE Albums (

AlbumID int IDENTITY(1, 1) NOT NULL,

AlbumName varchar(70) NOT NULL,

CONSTRAINT pkAlbums PRIMARY KEY(AlbumID) );

IF OBJECT\_ID(N'dbo.Labels', N'U') IS NOT NULL

DROP TABLE [dbo].[Labels];

CREATE TABLE Labels (

LabelID int IDENTITY(1, 1) NOT NULL,

LabelName varchar(50) NOT NULL,

LabelStreet varchar(50) NOT NULL,

LabelCity varchar(25) NOT NULL,

LabelState varchar(2) NOT NULL,

LabelZip varchar(5) NOT NULL,

LabelPhone varchar(14) NOT NULL,

CONSTRAINT pkLabels PRIMARY KEY(LabelID) );

IF OBJECT\_ID(N'dbo.Artists', N'U') IS NOT NULL

DROP TABLE [dbo].[Artists];

CREATE TABLE Artists (

ArtistID int IDENTITY(1, 1) NOT NULL,

ArtistName varchar(50) NOT NULL,

LabelID int NOT NULL,

CONSTRAINT pkArtists PRIMARY KEY(ArtistID),

CONSTRAINT fkArtists FOREIGN KEY(LabelID) REFERENCES Labels(LabelID) );

IF OBJECT\_ID(N'dbo.Songs', N'U') IS NOT NULL

DROP TABLE [dbo].[Songs];

CREATE TABLE Songs (

SongID int IDENTITY(1, 1) NOT NULL,

AlbumID int NOT NULL,

ArtistID int NOT NULL,

SongName varchar(30) NOT NULL,

ReleaseDate date NOT NULL,

Duration int NOT NULL,

CONSTRAINT pkSongs PRIMARY KEY(SongID, AlbumID, ArtistID),

CONSTRAINT fkAlbumID FOREIGN KEY(AlbumID) REFERENCES Albums(AlbumID),

CONSTRAINT fkArtistID FOREIGN KEY(ArtistID) REFERENCES Artists(ArtistID) );

INSERT INTO Labels(LabelName, LabelStreet, LabelCity, LabelState, LabelZip, LabelPhone)

VALUES('Interscope Records', '2220 Colorado Ave', 'Santa Monica', 'CA', '90404', '(310) 865-1000'),

('Atlantic Records', '1633 Broadway', 'New York City', 'NY', '10019', '(212) 275-4952'),

('Colombia Records', '550 Madison Ave', 'New York City', 'NY', '10022', '(212) 833-8000'),

('RCA Records', '1201 Demonbreun St', 'Nashville', 'TN', '37203', '(615) 301-4300'),

('Legacy Recordings', '94 Cherry Valley', 'West Hempstead', 'NY', '11552', '(212) 822-4105'),

('Republic Records', '320 E 52nd St', 'New York City', 'NY', '10022', '(310) 865-4000'),

('Warner Records', '777 S Santa Fe Ave', 'Los Angeles', 'CA', '90021', '(818) 953-2600'),

('Epic Records', '2100 Colorado Blvd', 'Santa Monica', 'CA', '90404', '(310) 449-2100'),

('Island Records', '1755 Broadway', 'New York City', 'NY', '10019', '(310) 865-4000'),

('Capitol Records', '1750 Vine St', 'Los Angeles', 'CA', '90028', '(323) 462-6252'),

('Big Machine Records', '1219 16th Ave S', 'Nashville', 'TN', '37212', '(615) 324-7777'),

('Downtown Records', '485 Broadway Fl 3', 'New York City', 'NY', '10013', '(212) 625-2980'),

('Def Jam Recordings', '1755 Broadway', 'New York City', 'NY', '10019', '(310) 865-4000'),

('Motown Records', '1755 Broadway Fl 6', 'New York City', 'NY', '10019', '(212) 373-0750'),

('Alamo Records', '345 7th Ave', 'New York City', 'NY', '10001', '(646) 343-9634');

INSERT INTO Albums(AlbumName)

VALUES('21'),

('Fine Line'),

('Sour'),

('Happier Than Ever'),

('24k Magic'),

('Back of my Mind'),

('Thriller'),

('Sweetener'),

('Future Nostalgia'),

('Emotions'),

('Dancing with the Devil'),

('Divinely Uninspired to a Hellish Extent'),

('Anything Goes'),

('Friends Keep Secrets'),

('Purpose');

INSERT INTO Artists(ArtistName, LabelID)

VALUES('Justin Bieber', 13),

('Demi Lovato', 9),

('Ariana Grande', 6),

('Dua Lipa', 7),

('Florida Georgia Line', 11),

('Adele', 1),

('Bruno Mars', 3),

('Mariah Carey', 8),

('Lewis Capaldi', 10),

('Billie Eilish', 2),

('Harry Styles', 1),

('Olivia Rodrigo', 2),

('Michael Jackson', 5),

('Benny Blanco', 12),

('H.E.R.', 4);

INSERT INTO Songs(AlbumID, ArtistID, SongName, ReleaseDate, Duration)

VALUES

(11, 2, 'Met Him Last Night', '2021-04-13', 204),

(7, 13, 'Billie Jean', '1983-01-02', 294),

(1, 6, 'Someone Like You', '2011-08-09', 245),

(14, 14, 'Eastside', '2018-07-12', 173),

(12, 9, 'Bruises', '2017-03-30', 218),

(8, 3, 'God is a Woman', '2018-07-13', 197),

(7, 13, 'Beat It', '1983-02-14', 258),

(2, 11, 'Lights Up', '2019-10-11', 172),

(10, 8, 'Cant Let Go', '1991-10-23', 267),

(15, 1, 'Sorry', '2015-10-22', 200),

(3, 12, 'Good 4 U', '2021-05-14', 178),

(5, 7,'Thats What I Like', '2017-01-30', 206),

(6, 15, 'Damage', '2020-10-21', 223),

(13, 5, 'Dirt', '2014-07-08', 230),

(15, 1, 'Love Yourself', '2015-11-09', 233),

(4, 10, 'My Future', '2020-07-30', 208),

(9, 4, 'Levitating', '2018-08-28', 203);

# **Select Queries**

/\*AND\*/

/\*Q1: Which songs are longer than 3 minutes and were released after 2018?\*/

SELECT SongName, ReleaseDate, Duration

FROM Songs

WHERE Duration > 180 AND ReleaseDate > '2018-12-31';

/\*SongName ReleaseDate Duration

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Met Him Last Night 2021-04-13 204

Damage 2020-10-21 223

My Future 2020-07-30 208

(3 rows affected)\*/

/\*OR\*/

/\*Q2: Which songs were released before 2010 or after 2020?\*/

SELECT SongName, ReleaseDate

FROM Songs

WHERE ReleaseDate < '2010-01-01' OR ReleaseDate > '2020-12-31'

ORDER BY ReleaseDate asc;

/\*SongName ReleaseDate

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Billie Jean 1983-01-02

Beat It 1983-02-14

Cant Let Go 1991-10-23

Met Him Last Night 2021-04-13

Good 4 U 2021-05-14

(5 rows affected)\*/

/\*BETWEEN\*/

/\*Q3: Which songs were released between 1980 and 2010?\*/

SELECT SongName, ReleaseDate

FROM Songs

WHERE ReleaseDate BETWEEN '1980-01-01' AND '2010-12-31'

ORDER BY ReleaseDate asc;

/\*SongName ReleaseDate

------------------------------ -----------

Billie Jean 1983-01-02

Beat It 1983-02-14

Cant Let Go 1991-10-23

(3 rows affected)\*/

/\*TOP Values with a calculated field, inner join, and group by\*/

/\*Q4: What are the top 5 artists with the most total duration time?\*/

SELECT TOP 5 concat(SUM(Duration / 60), ':', SUM(Duration % 60)) AS 'TotalTime', Artists.ArtistName

FROM Songs JOIN Artists ON Songs.ArtistID=Artists.ArtistID

GROUP BY ArtistName

ORDER BY TotalTime desc;

/\*TotalTime ArtistName

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8:72 Michael Jackson

6:73 Justin Bieber

4:5 Adele

4:27 Mariah Carey

3:50 Florida Georgia Line

(5 rows affected)\*/

/\*Calculated Field with Group By and Having and an Inner Join\*/

/\*Q5: Which labels have more than one artist?\*/

SELECT COUNT(Artists.LabelID) AS 'TotalArtists', LabelName

FROM Artists JOIN Labels ON Artists.LabelID=Labels.LabelID

GROUP BY Labels.LabelName HAVING COUNT(Artists.LabelID) > 1;

/\*TotalArtists LabelName

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2 Atlantic Records

2 Interscope Records

(2 rows affected)\*/

/\*NOT\*/

/\*Q6: What are all the artists not from Colombia Records?\*/

SELECT \*

FROM Artists

WHERE NOT LabelID = 2;

/\*ArtistID ArtistName LabelID

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1 Justin Bieber 13

2 Demi Lovato 9

3 Ariana Grande 6

4 Dua Lipa 7

5 Florida Georgia Line 11

6 Adele 1

7 Bruno Mars 3

8 Mariah Carey 8

9 Lewis Capaldi 10

11 Harry Styles 1

13 Michael Jackson 5

14 Benny Blanco 12

15 H.E.R. 4

(13 rows affected)\*/

/\*Outer Join\*/

/\*Q7: Which labels don't have any artists?\*/

SELECT Labels.LabelID, Labels.LabelName, Artists.ArtistName

FROM Labels LEFT OUTER JOIN Artists ON Labels.LabelID = Artists.LabelID

WHERE ArtistName IS NULL;

/\*LabelID LabelName ArtistName

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14 Motown Records NULL

15 Alamo Records NULL

(2 rows affected)\*/

/\*Subquery\*/

/\*Q8: What is the label name for the artist with the ID 2?\*/

SELECT LabelName

FROM Labels

WHERE LabelID IN

(SELECT LabelID

FROM Artists

WHERE ArtistID = 2);

/\*LabelName

--------------------------------------------------

Island Records

(1 row affected)\*/

# **Views**

/\*Incorporates AND, OR, NOT, BETWEEN\*/

IF OBJECT\_ID('Between1980\_vw') IS NULL

BEGIN

EXEC

('CREATE VIEW Between1980\_vw

AS

SELECT SongName, ReleaseDate

FROM Songs

WHERE ReleaseDate BETWEEN ''1980-01-01'' AND ''2010-12-31''

ORDER BY ReleaseDate asc;')

END

GO

SELECT \* FROM Between1980\_vw;

/\*SongName ReleaseDate

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Billie Jean 1983-01-02

Beat It 1983-02-14

Cant Let Go 1991-10-23

(3 rows affected)\*/

/\*Incorporates one aggregate function, group by, and having\*/

IF OBJECT\_ID('MoreThanOne\_vw') IS NULL

BEGIN

EXEC

('CREATE VIEW MoreThanOne\_vw

AS

SELECT COUNT(Artists.LabelID) AS ''TotalArtists'', LabelName

FROM Artists JOIN Labels ON Artists.LabelID=Labels.LabelID

GROUP BY Labels.LabelName

HAVING COUNT(Artists.LabelID) > 1;')

END

GO

SELECT \* FROM MoreThanOne\_vw;

/\*TotalArtists LabelName

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2 Atlantic Records

2 Interscope Records

(2 rows affected)\*/

/\*Incorporates an INNER join\*/

IF OBJECT\_ID('TotalSongTime\_vw') IS NULL

BEGIN

EXEC

('CREATE VIEW TotalSongTime\_vw

AS

SELECT concat(SUM(Duration / 60), '':'', SUM(Duration % 60)) AS ''TotalTime'', Artists.ArtistName

FROM Songs JOIN Artists ON Songs.ArtistID=Artists.ArtistID

GROUP BY ArtistName;')

END

GO

SELECT \* FROM TotalSongTime\_vw;

/\*TotalTime ArtistName

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4:5 Adele

3:17 Ariana Grande

2:53 Benny Blanco

3:28 Billie Eilish

3:26 Bruno Mars

3:24 Demi Lovato

3:23 Dua Lipa

3:50 Florida Georgia Line

3:43 H.E.R.

2:52 Harry Styles

6:73 Justin Bieber

3:38 Lewis Capaldi

4:27 Mariah Carey

8:72 Michael Jackson

2:58 Olivia Rodrigo

(15 rows affected)\*/

/\*Incorporates an OUTER join\*/

IF OBJECT\_ID('LabelNoArtist\_vw') IS NULL

BEGIN

EXEC

('CREATE VIEW LabelNoArtist\_vw

AS

SELECT Labels.LabelID, Labels.LabelName, Artists.ArtistName

FROM Labels LEFT OUTER JOIN Artists ON Labels.LabelID = Artists.LabelID

WHERE ArtistName IS NULL;')

END

GO

SELECT \* FROM LabelNoArtist\_vw;

/\*LabelID LabelName ArtistName

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14 Motown Records NULL

15 Alamo Records NULL

(2 rows affected)\*/

/\*Incorporates a subquery\*/

IF OBJECT\_ID('ArtistID2\_vw') IS NULL

BEGIN

EXEC

('CREATE VIEW ArtistID2\_vw

AS

SELECT LabelName

FROM Labels

WHERE LabelID IN

(SELECT LabelID

FROM Artists

WHERE ArtistID = 2);')

END

GO

SELECT \* FROM ArtistID2\_vw;

/\*LabelName

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Island Records

(1 row affected)\*/

# **Stored Procedures**

/\*Procedure 1\*/

IF EXISTS (SELECT name FROM sysobjects

WHERE name = 'SongInformationProc' AND type = 'P')

DROP PROCEDURE SongInformationProc

GO

CREATE PROCEDURE SongInformationProc

AS

BEGIN

SELECT Artists.ArtistName, Labels.LabelName, Albums.AlbumName, Songs.SongName, CONVERT(varchar, ReleaseDate, 107) AS 'SongReleaseDate', concat(Duration/60, ':', Duration%60) AS 'Duration'

FROM Labels JOIN Artists ON Labels.LabelID=Artists.ArtistID

JOIN Songs ON Artists.ArtistID=Songs.ArtistID

JOIN Albums ON Songs.AlbumID=Albums.AlbumID

ORDER BY Artists.ArtistName;

END;

GO

EXEC SongInformationProc;

/\*ArtistName LabelName AlbumName SongName SongReleaseDate Duration

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Adele Republic Records 21 Someone Like You Aug 09, 2011 4:5

Ariana Grande Colombia Records Sweetener God is a Woman Jul 13, 2018 3:17

Benny Blanco Motown Records Friends Keep Secrets Eastside Jul 12, 2018 2:53

Billie Eilish Capitol Records Happier Than Ever My Future Jul 30, 2020 3:28

Bruno Mars Warner Records 24k Magic Thats What I Like Jan 30, 2017 3:26

Demi Lovato Atlantic Records Dancing with the Devil Met Him Last Night Apr 13, 2021 3:24

Dua Lipa RCA Records Future Nostalgia Levitating Aug 28, 2018 3:23

Florida Georgia Line Legacy Recordings Anything Goes Dirt Jul 08, 2014 3:50

H.E.R. Alamo Records Back of my Mind Damage Oct 21, 2020 3:43

Harry Styles Big Machine Records Fine Line Lights Up Oct 11, 2019 2:52

Justin Bieber Interscope Records Purpose Sorry Oct 22, 2015 3:20

Justin Bieber Interscope Records Purpose Love Yourself Nov 09, 2015 3:53

Lewis Capaldi Island Records Divinely Uninspired to a Hellish Extent Bruises Mar 30, 2017 3:38

Mariah Carey Epic Records Emotions Cant Let Go Oct 23, 1991 4:27

Michael Jackson Def Jam Recordings Thriller Beat It Feb 14, 1983 4:18

Michael Jackson Def Jam Recordings Thriller Billie Jean Jan 02, 1983 4:54

Olivia Rodrigo Downtown Records Sour Good 4 U May 14, 2021 2:58

(17 rows affected)\*/

/\*Procedure 2\*/

IF EXISTS (SELECT name FROM sysobjects

WHERE name = 'SongReleaseDateProc' AND type = 'P')

DROP PROCEDURE SongReleaseDateProc

GO

CREATE PROCEDURE SongReleaseDateProc

@ReleaseDate varchar(20) OUTPUT,

@SongName varchar(20)

AS

BEGIN

SELECT @ReleaseDate = convert(varchar, ReleaseDate, 107)

FROM Songs

WHERE @SongName = SongName

PRINT @SongName + ' was released on ' + @ReleaseDate;

END

GO

DECLARE @MyReleaseDate varchar(10);

exec SongReleaseDateProc @MyReleaseDate OUTPUT, @SongName = 'Eastside';

/\*Eastside was released on Jul 12, 2018\*/

DECLARE @MyReleaseDate2 varchar(10);

exec SongReleaseDateProc @MyReleaseDate2 OUTPUT, @SongName = 'Lights Up';

/\*Lights Up was released on Oct 11, 2019\*/

# **Login and User**

CREATE LOGIN User\_MCB WITH PASSWORD = 'CIT%2411',

DEFAULT\_DATABASE = MusicArtistMCB,

CHECK\_EXPIRATION = OFF,

CHECK\_POLICY = OFF;

ALTER SERVER ROLE public\_only ADD MEMBER User\_MCB;

CREATE USER User\_MCB

WITH DEFAULT\_SCHEMA;

GRANT SELECT, UPDATE, INSERT, DELETE, REFERENCES, ALTER

ON Songs

TO User\_MCB;

GRANT SELECT, UPDATE, INSERT, DELETE, REFERENCES, ALTER

ON ArtistID2\_vw

TO User\_MCB;