Day 12 - SQL Fundamentals

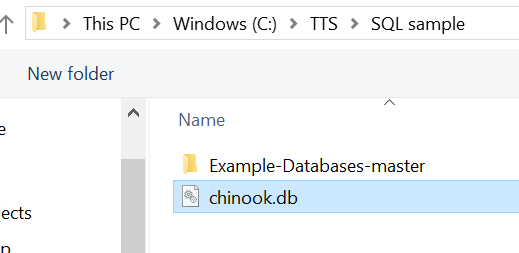
Review homework

Review Training expectations from schedule.xls

Slides 1-4

Open <https://sqliteonline.com/>

Send chinook.db to students through slack



Show students tables, columns, rows, keys, foreign keys

**CRUD**

**READ**

Select \* from artists

SELECT \* FROM artists where name = 'U2'

SELECT \* FROM artists where artistid < 10

SELECT name FROM artists where Name > 'M'

SELECT \* FROM artists where Name > 'M' order by name

SELECT count(\*) FROM artists

SELECT sum(total) FROM invoices

Select Upper(name) from artists

SELECT \* FROM albums where ArtistId = 150

SELECT \* FROM tracks where albumid = 239

// longest song in database

SELECT \* FROM tracks order by milliseconds desc

// shortest

SELECT \* FROM tracks order by milliseconds asc

// Name of longest track, shortest track

SELECT name, MAX(milliseconds) FROM tracks

SELECT name,MIN(milliseconds) FROM tracks

**JOINS**

SELECT a.Name FROM artists a

SELECT a.Name, l.Title FROM artists a, albums l where a.ArtistId = l.ArtistId

SELECT a.Name, l.Title FROM artists a, albums l where a.ArtistId = l.ArtistId and a.name = 'U2'

// To see all tracks for all U2 albums

SELECT a.Name, l.Title, t.name FROM artists a, albums l, tracks t where a.ArtistId = l.ArtistId and a.name = 'U2' AND t.albumid = l.albumid

// Lab list all AC/DC songs sorted by song length.

SELECT a.Name, l.Title, t.name, t.Milliseconds FROM artists a, albums l, tracks t where a.ArtistId = l.ArtistId and a.name = 'AC/DC' AND

t.albumid = l.albumid order by milliseconds

// Lab Find shortest song composed by Roy Z

// What albums does 'Smoke On The Water' appear on?

**1st break**

// group by

SELECT \* FROM genres g, tracks t where g.GenreId = t.genreid

SELECT g.name,count(\*) FROM genres g, tracks t where g.GenreId = t.genreid group by g.name

// Which composer wrote the most songs

SELECT composer, count(\*) FROM tracks group by composer

SELECT composer, count(\*)counter FROM tracks group by composer order by counter desc

// Dates

SELECT date('now');

SELECT CURRENT\_TIMESTAMP

SELECT invoiceDate FROM invoices

SELECT date(invoiceDate) FROM invoices // also time and datetime

SELECT invoiceDate FROM invoices where invoiceDate BETWEEN '2010-01-01' AND '2009-10-09'

// Lab Get total invoices for April 2009

SELECT sum(total) FROM invoices where invoiceDate BETWEEN '2009-04-01' AND '2009-04-30'

// Like

SELECT \* FROM albums where title like ('%Rock%')

// In

SELECT \* FROM artists where name in ('U2','Accept')

**Create**

insert into artists (artistid,name) values (1,'Siebsen') // fails

select \* from artists where artistid = 276

insert into albums (albumid,title,artistid) values (348,'Java Rocks',276) // Show how foreign keys should match, but not enforced here

insert into albums (albumid,title,artistid) values (349,'Java Rocks II',276)

select \* from albums where artistid = 276

// Lab add tracks to your albums

Insert into tracks (trackid, name, albumid, mediaTypeId, GenreId, Composer, Milliseconds, bytes, unitprice) values

(3504, 'First Song', 348, 2, 10, 'Chuck Siebsen',234234, 2342344, .99)

// Lab: Select your artist name, albums and tracks

**Update**

update artists set Name = 'Barry Manilow' where artistid = 1

// Steal all of AC/DC songs

update tracks set albumid = 348 where albumid = 1

**Delete**

delete from tracks where albumid in (348,349)

delete from albums where artistid = 276

delete from artists where artistid = 276

**Transaction**

BEGIN TRANSACTION;

UPDATE artists SET name = 'Chuck';

SELECT \* FROM artists;

ROLLBACK;

**Create table**

Review slide 5, discuss NOT NULL and REFERENCES

**# SQL Fundamentals Homework**

1. SELECT everything from a table

2. SELECT exactly one column from a table . SELECT more than one but not all columns from a table

3. SELECT everything from the tracks table whose id numbers are greater than 50, or less than ten.

4. INSERT ten new records into the artists table. They can be real or fictional individuals

5. UPDATE the artists table and change some names.

6 Use a TRANSACTION/ROLLBACK window to temprarily DELETE everything from the (your choice) table.

7. For 3 artists in the artists table, add a record to the albums table,

8. Use a TRANSACTION/ROLLBACK window to DELETE everything from the artists table WHERE the artistID is greater than 8. Put "SELECT \* FROM artists;" in the window to make sure you delete only those records you should!

9 What albums are in the database for the artist Audioslave. Join the Artist and Album tables.

10 Determine total billing for Germany from invoices table

11 Determine total billing for France

12 which country has higher billing

13 What is the total billing for USA in year 2009

14 Determine employee count for France

15 List Playlist Names joined to track names

16 Join the genre table to the tracks table, select for genre = “Rock”

**Homework on last slide slide 20**

**Need to install Lombok for Eclipse following instructions here https://www.baeldung.com/lombok-ide**

**Show students working twitter app, show the database it uses in /console**