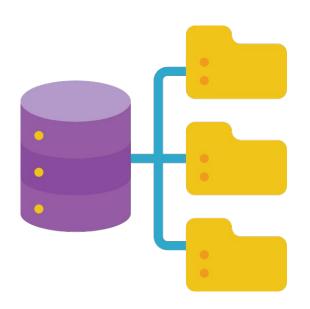


Contents

- Database revisit and ER diagram
- 2. DB Browser installation
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- 4. Create new columns
- 5. Create new columns with CASE
- 6. Working with date
- 7. Get data from multiple tables
- 8. Inner vs. Left Join
- 9. More join examples
- 10. Random sampling

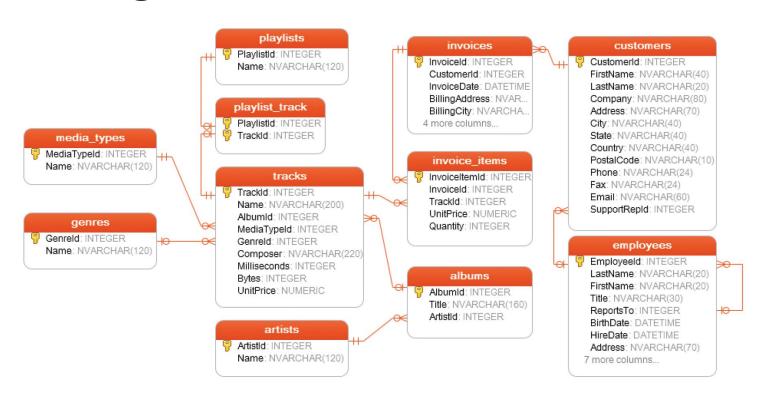
Database and Tables



Databases consist of many tables

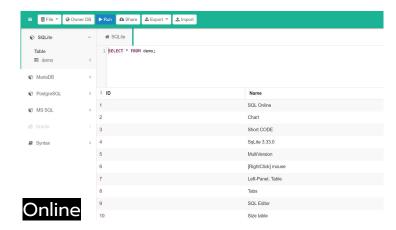
ID	Name	Department	Position	Salary
001	David	IT	Outsource	10000
002	Anna	Marketing	Manager	25000
003	John	Marketing	Manager	30000
004	Harry	CEO Office	CEO	65000

ER Diagram

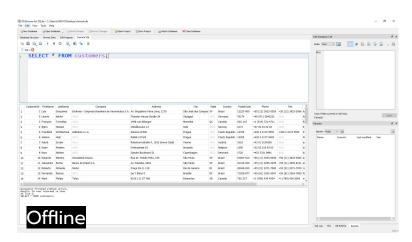


Online vs. Offline Editor

จะใช้ online หรือ offline editor ก็ได้สำหรับการเรียนคอร์สนี้



https://sqliteonline.com/



https://sqlitebrowser.org/

Join Syntax

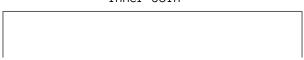
```
playlists
SELECT
                                                                                                                                                                               customers
                                                                                                                                                   invoices
                                                                                                             PlaylistId: INTEGER
                                                                                                                                              Invoiceld: INTEGER
                                                                                                                                                                        Customerid: INTEGER
                                                                                                                Name: NVARCHAR(120)
                                                                                                                                                Customerid: INTEGER
                                                                                                                                                                           FirstName: NVARCHAR(40)
           A.artistid,
                                                                                                                                                InvoiceDate: DATETIME
                                                                                                                                                                           LastName: NVARCHAR(20)
                                                                                                                                                BillingAddress: NVAR...
                                                                                                                                                                           Company: NVARCHAR(80)
           A.name,
                                                                                                               playlist_track
                                                                                                                                                BillingCity: NVARCHA...
                                                                                                                                                                           Address: NVARCHAR(70)
                                                                                                               Playlistid: INTEGER
                                                                                                                                               4 more columns...
                                                                                                                                                                           City: NVARCHAR(40)
                                                                                                             Trackld: INTEGER.
                                                                                                                                                                           State: NVARCHAR(40)
           B.title
                                                                                 media_types
                                                                                                                                                                           Country: NVARCHAR(40)
                                                                             MediaTypeld: INTEGER ____
                                                                                                                                                                           PostalCode: NVARCHAR(10)
                                                                                                                                                 invoice items
                                                                               Name: NVARCHAR(120)
FROM artists AS A
                                                                                                                                                                           Phone: NVARCHAR(24)
                                                                                                                     tracks
                                                                                                                                               InvoiceItemId: INTEGER
                                                                                                                                                                           Fax: NVARCHAR(24)
                                                                                                                                                Invoiceld: INTEGER
                                                                                                         Trackld: INTEGER
                                                                                                                                                                           Email: NVARCHAR(60)
JOIN albums AS B
                                                                                                                                                Trackld: INTEGER
                                                                                                                Name: NVARCHAR(200)
                                                                                                                                                                           SupportRepId: INTEGER
                                                                                                                                                UnitPrice: NUMERIC
                                                                                                                Albumid: INTEGER
                                                                                                                                                Quantity: INTEGER
                                                                                                                MediaTypeld: INTEGER
ON A.artistid = B.artistid;
                                                                             Genreld: INTEGER
                                                                                                               Genreld: INTEGER
                                                                                                                                                                               employees
                                                                               Name: NVARCHAR(120)
                                                                                                                Composer: NVARCHAR(220)
                                                                                                                                                                        P Employeeld: INTEGER
                                                                                                                Milliseconds: INTEGER
                                                                                                                                                                           LastName: NVARCHAR(20)
                                                                                                                                                   albums
                                                                                                                Bytes: INTEGER
                                                                                                                                                                           FirstName: NVARCHAR(20)
                                                                                                               UnitPrice: NUMERIC
                                                                                                                                               Albumid: INTEGER
                                                                                                                                                                           Title: NVARCHAR(30)
                                                                                                                                                Title: NVARCHAR(160)
                                                                                                                                                                           ReportsTo: INTEGER
             Primary Key = Foreign Key
                                                                                                                                                ArtistId: INTEGER
                                                                                                                                                                           BirthDate: DATETIME
                                                                                                                    artists
                                                                                                                                                                           HireDate: DATETIME
                                                                                                             Artistld: INTEGER
                                                                                                                                                                           Address: NVARCHAR(70)
                                                                                                               Name: NVARCHAR(120)
                                                                                                                                                                          7 more columns...
```

Inner vs. Left Join



Inner Join Illustration

Inner Join



ID	Name	Major
01	David	Economics
02	Marry	Economics
03	John	Marketing

ID	Campus
01	London
02	New York
09	Tokyo



ID	Name	Major	Campus
01	David	Economics	London
02	Marry	Economics	New York

Students

Campus

Result Set

Left Join Illustration

Left Join

Left 30III

ID	Name	Major
01	David	Economics
02	Marry	Economics
03	John	Marketing

ID	Campus
01	London
02	New York
09	Tokyo



ID	Name	Major	Campus
01	David	Economics	London
02	Marry	Economics	New York
03	John	Marketing	NULL

Students Campus Result Set

Inner vs. Left Join Syntax

```
SELECT
A.artistid,
A.name,
B.title

FROM artists AS A

INNER JOIN albums AS B

ON A.artistid = B.artistid;

SELECT
A.artistid,
A.name,
B.title
FROM artists AS A

LEFT JOIN albums AS B

ON A.artistid = B.artistid;
```

