Individual Assignment

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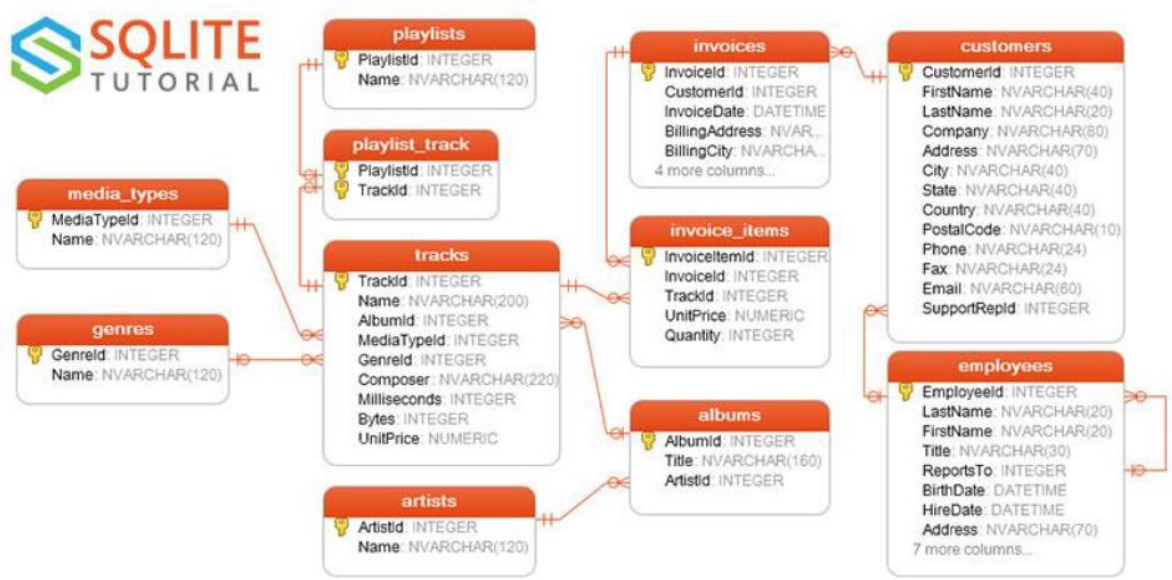
Business Report

Dataset : The Chinook Dataset is a dataset for a Music Record Company, having 12 tables which store data about the employees, customers, invoices, artists, albums, music tracks and media types. It has 12 tables, the relationship among which is showed below:



The company has **412 orders(invoices)** from **59 customers**, having sold **1984 different tracks** and a **total quantity of 2240**, generating a **revenue of $20848.62** from **25 different countries** in a span of almost **5 years**. The distribution for the same is in the Table below:

Country distribution of Sales (Overview)

Country	Number of Orders(Invoices)	Number of Customers	Tracks sold	Total Quantity	Revenue Total
Argentina	7	1	38	38	334.62
Australia	7	1	38	38	334.62
Austria	7	1	38	38	404.62
Belgium	7	1	38	38	334.62
Brazil	35	5	190	190	1677.1
Canada	56	8	302	304	2689.96
Chile	7	1	38	38	415.62
Czech Republic	14	2	76	76	879.24
Denmark	7	1	38	38	334.62
Finland	7	1	38	38	350.62
France	35	5	190	190	1722.1
Germany	28	4	152	152	1392.48
Hungary	7	1	38	38	446.62
India	13	2	74	74	667.28
Ireland	7	1	38	38	446.62
Italy	7	1	38	38	334.62
Netherlands	7	1	38	38	352.62
Norway	7	1	38	38	362.62
Poland	7	1	38	38	334.62
Portugal	14	2	76	76	687.24
Spain	7	1	38	38	334.62
Sweden	7	1	38	38	340.62
USA	91	13	486	494	4667.06
United Kingdom	21	3	114	114	1003.86

USA and Canada show highest sales, followed by France and Brazil. Six countries show the lowest sales.

The company had **412 order invoices** with an average of **5.43 tracks per order** and an **average revenue of $5.65 per order.** The year-wise distribution is in the table below:

Trends in Invoice with year

Number of Orders	Average number of Tracks per order	Average revenue per order	Year
83	5.46988	5.415181	2009
83	5.481928	5.800602	2010
83	5.325301	5.65759	2011
83	5.385542	5.753373	2012
80	5.525	5.63225	2013

In the table above, you can see that 2010 has the highest Average revenue per order even though 2013 has the highest average number of tracks per order. This is because although the number of tracks was less, 2010 had a higher percentage of tracks that had a unit price of $1.99.*

The table below shows that the employee **Jane has the highest revenue** while the employee **Steve has the highest average revenue** per invoice.

Employee Performance

First Name	Last Name	EmployeeId	Orders(Invoices made)	Customers served	Revenue Generated	Average revenue per order
Jane	Peacock	3	146	21	833.04	5.705753
Margaret	Park	4	140	20	775.4	5.538571
Steve	Johnson	5	126	18	720.16	5.715556

Country-wise analysis shows the best employee in each country:

First Name	Last Name	EmployeeId	Orders(Invoices made)	Customers served	Revenue Generated	Average revenue per order	BillingCountry
Margaret	Park	4	7	1	37.62	5.374286	Argentina
Margaret	Park	4	7	1	37.62	5.374286	Australia
Steve	Johnson	5	7	1	42.62	6.088571	Austria
Margaret	Park	4	7	1	37.62	5.374286	Belgium
Jane	Peacock	3	14	2	77.24	5.517143	Brazil
Jane	Peacock	3	35	5	191.1	5.46	Canada
Steve	Johnson	5	7	1	46.62	6.66	Chile
Steve	Johnson	5	7	1	49.62	7.088571	Czech Republic
Margaret	Park	4	7	1	37.62	5.374286	Denmark
Jane	Peacock	3	7	1	41.62	5.945714	Finland
Jane	Peacock	3	14	2	80.24	5.731429	France
Jane	Peacock	3	14	2	81.24	5.802857	Germany
Jane	Peacock	3	7	1	45.62	6.517143	Hungary
Jane	Peacock	3	13	2	75.26	5.789231	India
Jane	Peacock	3	7	1	45.62	6.517143	Ireland
Steve	Johnson	5	7	1	37.62	5.374286	Italy
Steve	Johnson	5	7	1	40.62	5.802857	Netherlands
Margaret	Park	4	7	1	39.62	5.66	Norway
Margaret	Park	4	7	1	37.62	5.374286	Poland
Margaret	Park	4	14	2	77.24	5.517143	Portugal
Steve	Johnson	5	7	1	37.62	5.374286	Spain
Steve	Johnson	5	7	1	38.62	5.517143	Sweden
Steve	Johnson	5	28	4	163.48	5.838571	USA
Steve	Johnson	5	7	1	37.62	5.374286	United Kingdom
Jane	Peacock	3	14	2	75.24	5.374286	United Kingdom

For the given data, the most frequent customers would be the ones with most orders. But as all customers except one have the same **number of orders, i.e., 7,** there has to be a better way to find the best customers. This would be to find the tenure (time between first and latest order) and the average revenue per order.

The below table shows the **top 5 customers in terms of tenure**:

Five oldest customers

CustomerId	FirstName	LastName	Most_Recent_Order	First_Order	Tenure	Average_Sales
23	John	Gordon	04DEC13	11JAN09	4.895277	5.374286
4	Bjørn	Hansen	03OCT13	02JAN09	4.750171	5.66
8	Daan	Peeters	04OCT13	03JAN09	4.750171	5.374286
46	Hugh	O'Reilly	04NOV13	03FEB09	4.750171	6.517143
21	Kathy	Chase	04DEC13	05MAR09	4.750171	5.374286

The below table shows the **top 5 customers with highest average sales per order**:

Five Customers with highest average sales

CustomerId	FirstName	LastName	Most_Recent_Order	First_Order	Tenure	Average_Sales
6	Helena	Holý	13NOV13	11JUL09	4.342231	7.088571
26	Richard	Cunningham	05APR13	07NOV09	3.408624	6.802857
57	Luis	Rojas	14OCT12	04APR09	3.52909	6.66
46	Hugh	O'Reilly	04NOV13	03FEB09	4.750171	6.517143
45	Ladislav	Kovács	20JUL13	08JAN10	3.52909	6.517143

When analysing the global region, you can see that the revenues and number of orders is the same for regions ‘America’ and ‘Europe’:

Order and Revenue by Region Data

Number_Of_Orders	Total	Region
11536	65200.8	Americas
11536	65200.8	Europe
1236	6985.8	Asia

A total of **1519 tracks have never been bought**, which consume a total storage space of **55304 MB** (*1000000 Bytes / 54 GB).

Unsold tracks

Number of Unsold Tracks	Size in MB
1519	55304.41

A list of **employees over 60 years of age**:

Employees over 60 year old

EmployeeId	LastName	FirstName	Title
2	Edwards	Nancy	Sales Manager
4	Park	Margaret	Sales Support Agent

Employee Tenure:

Employee tenure

EmployeeId	LastName	FirstName	Title	Tenure
1	Adams	Andrew	General Manager	42.61739
2	Edwards	Nancy	Sales Manager	42.32991
3	Peacock	Jane	Sales Support Agent	42.24778
4	Park	Margaret	Sales Support Agent	43.3347
5	Johnson	Steve	Sales Support Agent	43.79192
6	Mitchell	Michael	IT Manager	43.79192
7	King	Robert	IT Staff	44.00274
8	Callahan	Laura	IT Staff	44.17248

The most common media type is the **MPEG Audio File.**

Famous albums per year per region:

Count	Year	Region	AlbumName
8	2009	Americas	International Superhits
9	2009	Americas	The Best Of R.E.M.: The IRS Years
9	2009	Americas	Use Your Illusion I
6	2009	Asia	Chronicle, Vol. 2
6	2009	Europe	Afrociberdelia
2	2009	Europe	Mais Do Mesmo
9	2009	Europe	Minha Historia
9	2010	Americas	Prenda Minha
3	2010	Asia	Greatest Kiss
9	2010	Europe	Acústico
8	2011	Americas	Vinícius De Moraes - Sem Limite
3	2011	Asia	The Singles
9	2011	Europe	Battlestar Galactica (Classic), Season 1
8	2012	Americas	A-Sides
11	2012	Americas	The Office, Season 3
2	2012	Asia	Blood Sugar Sex Magik
2	2012	Asia	Cesta Básica
2	2012	Asia	Diver Down
2	2012	Asia	Fear Of The Dark
2	2012	Asia	Live After Death
2	2012	Asia	Raul Seixas
2	2012	Asia	The Best Of R.E.M.: The IRS Years
2	2012	Asia	UB40 The Best Of - Volume Two [UK]
2	2012	Asia	War
2	2012	Asia	Zooropa
7	2012	Europe	My Generation - The Very Best Of The Who
8	2013	Americas	Quanta Gente Veio Ver (Live)
4	2013	Asia	Up An' Atom
8	2013	Europe	Compositores

Famous artists by year and region :

Count	Year	Region	ArtistName
13	2009	Americas	Metallica
6	2009	Asia	Creedence Clearwater Revival
6	2009	Asia	Iron Maiden
19	2009	Europe	Iron Maiden
19	2010	Americas	Iron Maiden
19	2010	Americas	Led Zeppelin
6	2010	Asia	Deep Purple
16	2010	Europe	Iron Maiden
16	2010	Europe	U2
11	2011	Americas	Amy Winehouse
3	2011	Asia	Miles Davis
3	2011	Asia	The Black Crowes
3	2011	Asia	The Clash
9	2011	Europe	Battlestar Galactica (Classic)
9	2011	Europe	Deep Purple
9	2011	Europe	Eric Clapton
9	2011	Europe	Faith No More
19	2011	Europe	U2
20	2012	Americas	Iron Maiden
14	2012	Asia	Iron Maiden
19	2012	Europe	U2
17	2013	Americas	Metallica
6	2013	Asia	Iron Maiden
30	2013	Europe	Iron Maiden

Iron Maiden has been one of the most famous artists throughout the data.

Genres by year and region :

Count	Year	Region	Genre
82	2009	Americas	Rock
15	2009	Asia	Rock
83	2009	Europe	Rock
74	2010	Americas	Rock
11	2010	Asia	Rock
72	2010	Europe	Rock
59	2011	Americas	Rock
7	2011	Asia	Rock
92	2011	Europe	Rock
59	2012	Americas	Rock
14	2012	Asia	Rock
91	2012	Europe	Rock
89	2013	Americas	Rock
6	2013	Asia	Metal
87	2013	Europe	Rock

While Rock is the preferred data, Metal, Latin and Alternative and Punk have a huge customer base too.