Brazilian E-Commerce Public Dataset by OLIST 🇧🇷

Information About The Dataset

Data Period ⇒ 2016 to 2018

Welcome! This is a Brazilian e-commerce public dataset of orders made at the **OLIST** Store. The dataset has information of 100k orders from 2016 to 2018 made at multiple marketplaces in Brazil. Its features allow viewing an order from multiple dimensions: from order status, price, payment and freight performance to customer location, product attributes, and finally reviews written by customers. We also released a geolocation dataset that relates Brazilian zip codes to lat/lng coordinates.

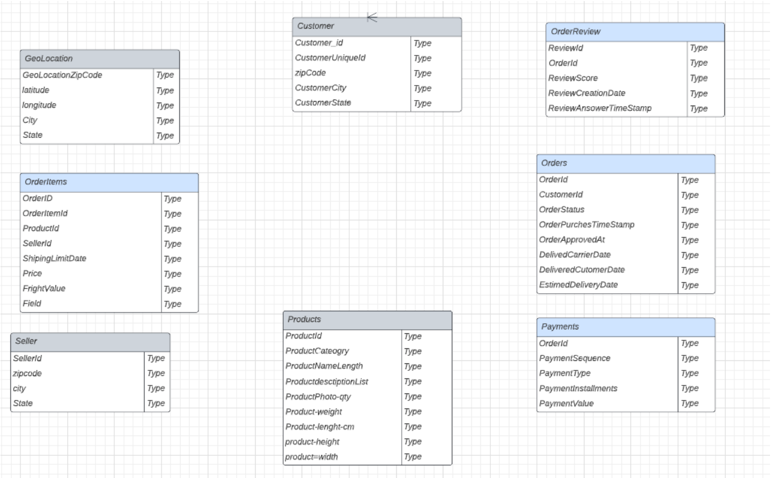
This is real commercial data, it has been anonymized, and references to the companies and partners in the review text have been replaced with the names of Game of Thrones great houses.

Context
This dataset was generously provided by Olist, the largest department store in Brazilian marketplaces. Olist connects small businesses from all over Brazil to channels without the hassle and with a single contract. Those merchants are able to sell their products through the Olist Store and ship them directly to the customers using **OLIST** logistics partners. See more on our website: www.olist.com

After a customer purchases the product from Olist Store a seller gets notified to fulfill that order. Once the customer receives the product, or the estimated delivery date is due, the customer gets a satisfaction survey by email where he can give a note about the purchase experience and write down some comments.

Attention
An order might have multiple items.
Each item might be fulfilled by a distinct seller.
All text identifying stores and partners where replaced by the names of Game of Thrones great houses.

Data Origin Design



GeoLocation	
GeoLocationZipCode	Type
latitude	Type
longitude	Type
City	Type
State	Type

Customer	
Customer_id	Type
CustomerUniqueId	Type
zipCode	Type
CustomerCity	Type
CustomerState	Type

OrderReview	
ReviewId	Type
OrderId	Type
ReviewScore	Type
ReviewCreationDate	Type
ReviewAnsowerTimeStamp	Type

OrderItems	
OrderID	Type
OrderItemId	Type
ProductId	Type
SellerId	Type
ShipingLimitDate	Type
Price	Type
FrightValue	Type
Field	Type

Orders	
OrderId	Type
CustomerId	Type
OrderStatus	Type
OrderPurchesTimeStamp	Type
OrderApprovedAt	Type
DelivedCarrierDate	Type
DeliveredCutomerDate	Type
EstimedDeliveryDate	Type

Seller	
SellerId	Type
zipcode	Type
city	Type
State	Type

Products	
ProductId	Type
ProductCateogry	Type
ProductNameLength	Type
ProductdesctiptionList	Type
ProductPhoto-qty	Type
Product-weight	Type
Product-lenght-cm	Type
product-height	Type
product=width	Type

Payments	
OrderId	Type
PaymentSequence	Type
PaymentType	Type
PaymentInstallments	Type
PaymentValue	Type

```
https://lucid.app/lucidchart/f7912a3a-2dc9-4df2-8599-8c68e5aaa1e6/edit?beaconFlowId=86E6D6D927078E9A&invitationId=inv_b9a4a841-db24-4397-b596-7eb0fe55aba4&page=0_0#
```

My Work

First

i should make The DataBase in SQL Server to handle anything I want

1. create database in SQL server “**OLIST** ”
2. make an integration Project in my Visual Studio “That will add the CSV Files into my OLEDB ”

Hint

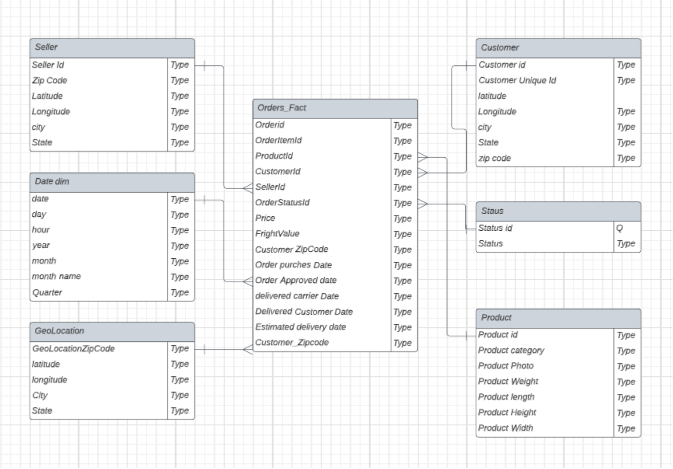
When I see the data I see that The Geo Location have a lot of Rows with The Same “zip code but different in lat and long” this cause because there is a lot of people in the same area that have same zip code

for that I should make a solution for this Problem

The Solution

I will remain one value for one zip code in geo location table then I will add the lat and long in the customer and seller tables to make it easy to make my Star Schema not Snowflek schema “i think it is the best solution for this problem”

THe Design of DWH will be



Seller	
Seller Id	Type
Zip Code	Type
Latitude	Type
Longitude	Type
city	Type
State	Type

Date dim	
date	Type
day	Type
hour	Type
year	Type
month	Type
month name	Type
Quarter	Type

GeoLocation	
GeoLocationZipCode	Type
latitude	Type
longitude	Type
City	Type
State	Type

Orders_Fact	
Orderid	Type
OrderItemId	Type
ProductId	Type
CustomerId	Type
SellerId	Type
OrderStatusId	Type
Price	Type
FrightValue	Type
Customer ZipCode	Type
Order purches Date	Type
Order Approved date	Type
delivered carrier Date	Type
Delivered Customer Date	Type
Estimated delivery date	Type
Customer_Zipcode	Type

Customer	
Customer id	Type
Customer Unique Id	Type
latitude	
Longitude	Type
city	Type
State	Type
zip code	Type

Staus	
Status id	Q
Status	Type

Product	
Product id	Type
Product category	Type
Product Photo	Type
Product Weight	Type
Product length	Type
Product Height	Type
Product Width	Type

```
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209e3d6-060f-4a19-ab4c-fc9cbd86ee62&page=0_0#
```

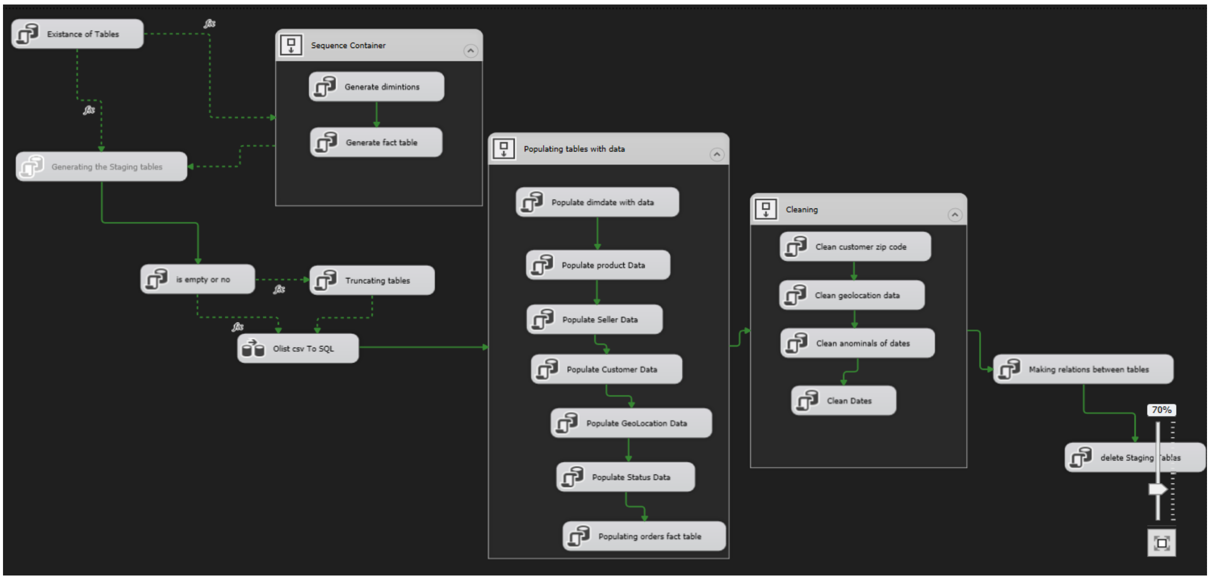
SSIS Work & ETL

i should Get Data From CSV file to my SQL Database “OLIST Data base”

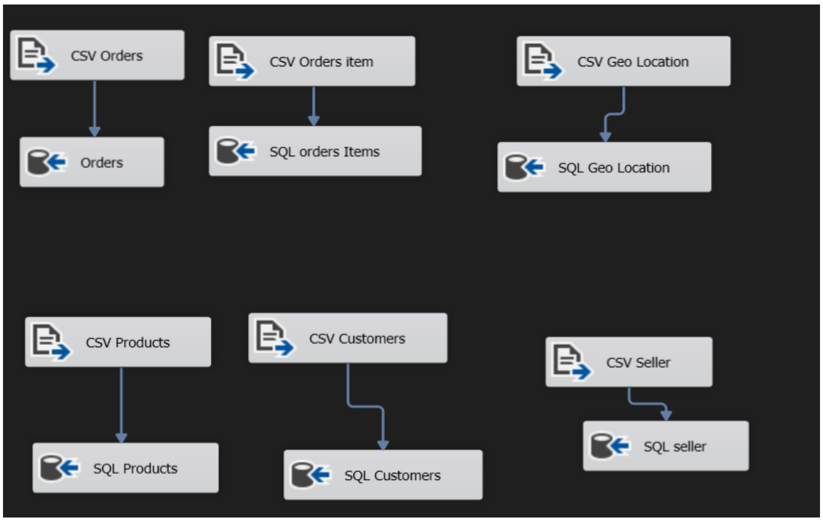
This is the control Flow task :

- here i used SSIS and SQL server for ETL Process
- all things i use are in Stored procedure written in sql and called in SSIS

Control Flow Task



Data Flow task :



SQL Steps

first i should Make The Views Which i should take Data From also This Step is a Transform Step

Building the Structure of the Tables that i will use in my DWH

Business Case is “order”

1. Building the Fact table “Orders” Containing (olist orders table + olist order items +Customer_ZipCode)
2. Date Table as a dim table
3. seller table as a dim table
4. product table as a dim table
5. status dim table
6. customer dim table
7. geolocation dim table

Transformation & cleansing

making a views that will containg the transformed data that i will populate it later in its distination table “using stored procedures”

1. Making the View Of Getting the geo location data after deleting the repeated items with same zip code
2. making view of getting fact table data “orders / orders items +customer_ZipCode”
3. Making a view of Status data Get_Status_Data
4. making a view of Products data get_product_data
5. making a view of seller data get_seller_data
6. making a view of Customer data get_customer_data

Populting Data

Population of data is done with a stored procedure that pull the data from a view and put this data into its location “table”

SPs

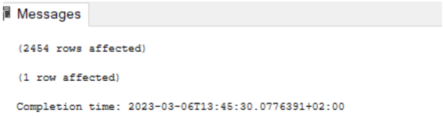
1. Creating a Stored procedure of populating product data “populate_product_data”
2. Creating a Stored procedure of populating seller data “populate_seller_data”
3. Creating a Stored procedure of populating Customer data “ populate_customer_data”
4. Creating a Stored procedure of populating geo location data “populate_geo_location_data”
5. Creating a Stored procedure of populating Status data “populate_status_data”
6. Creating a Stored procedure of populating date data “populate_Date” (it takes 2 input parameters start_date , and end_date then it generate dates between this two dates)
7. then it is time to populate the fact table with data “populate_order_data”

Cleaning

my data was need some cleaning like removing duplicates and clean the date to make it related to hours only

1. clean with a view “view of geo location data” removing all duplicated of zip code
2. cleaning dates to hold hours data only to connect clearly to the dim date “cleaning_dates”

3. cleaning geolocation data cause of the city of it has incorrect typing “cleaning_geo_location”
4. also in orders fact table i found that “delivey_carrier_Date , order_approved_time” have some data that is not valid where the 2 dates are equal to a date in 1999 so i make a Stored procedure that will update those values to go the default value of date that it ‘2012-01-01 00:00:00.000’ those anominal values
   its executino will be :



```
(2454 rows affected)

(1 row affected)

Completion time: 2023-03-06T13:45:30.0776391+02:00
```

5. also in my data i found that there is some users that there zipcode and city and state are not stored in geolocation table so that i will add an difault value in geolocation table that will hold the errors like this error ”clean_customer_zipcode”

```
insert into geolocation (zipcode,latitude,longitude,city,state) values (0,0,0,'N/A','N/A');
```

Execution of Stored Procedure

to make data go to its distination i should execute all of the stored procedure that i have

- in execution of populate date stored procedure first i get the minimum vales of data that in my data also i get the max value of date in my data and passed it as parameters to my stored procedure

```
select min(order_purches_date) from orders_fact

select max(Estimated_delivery_date) from orders_fact

exec populate_Date '2016-01-01 00:00:00.000' , '2018-12-31 23:00:00.000'
```

Relations

Now it is time to make the relations between tables with also a stored procedure “”

hints:

- in customer data there is customers that have more than 1 id in customer data but the unique customer id will hold one value for all of the repeated
- in the relation between table to make it more easy and more fast to increase the performace of my DWH i change the primary key of each dim table and generate a surgate key that i will use in making relations between dims and fact table
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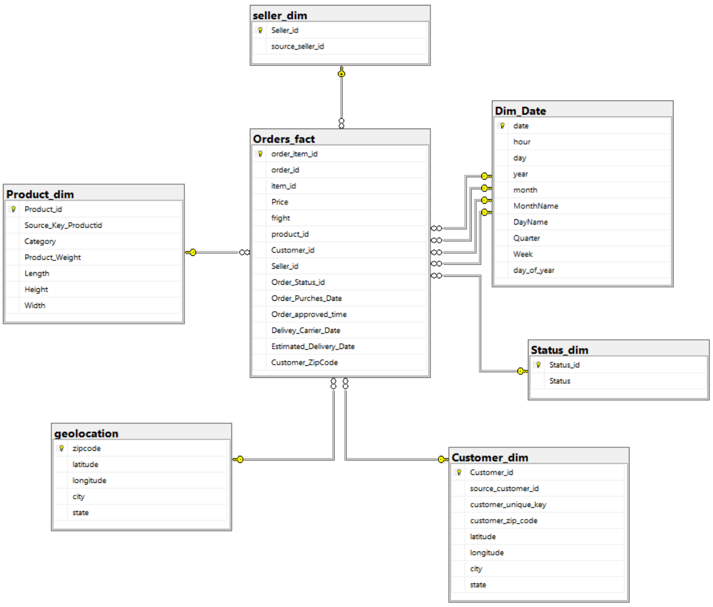
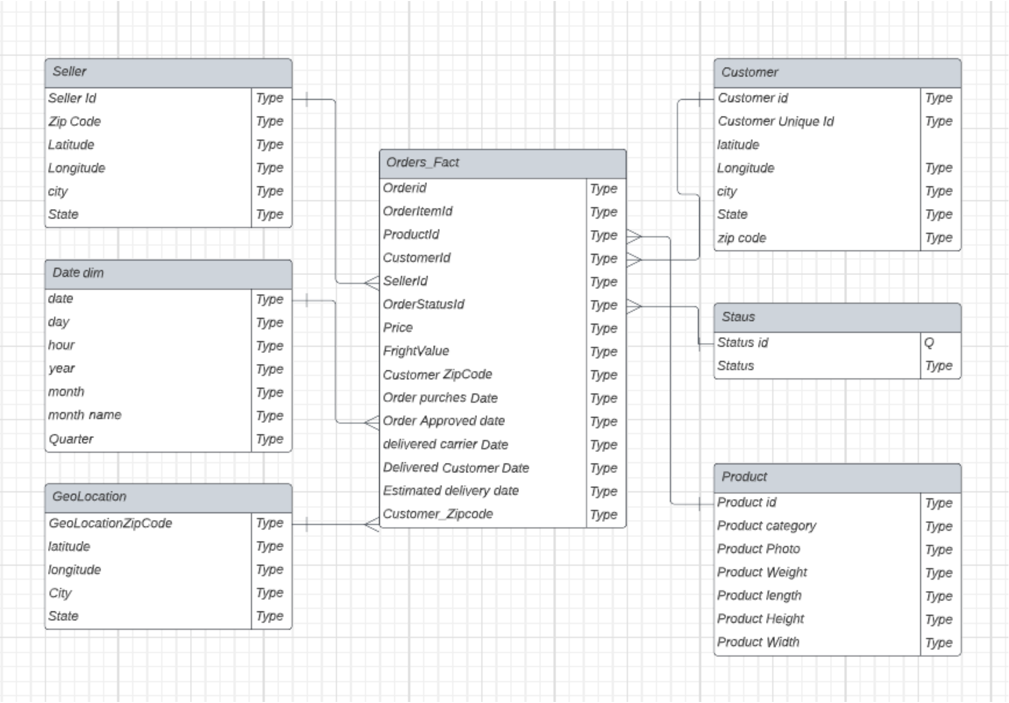
final diagram is : for the OLAP





▼ **Visualizaion**