CREATION OF DATAWAREHOUSE FOR AVACADO2GO

This document contains executive summary summarizing our activities that were carried out in creation of the Datawarehouse accompanied by all the required screenshots.

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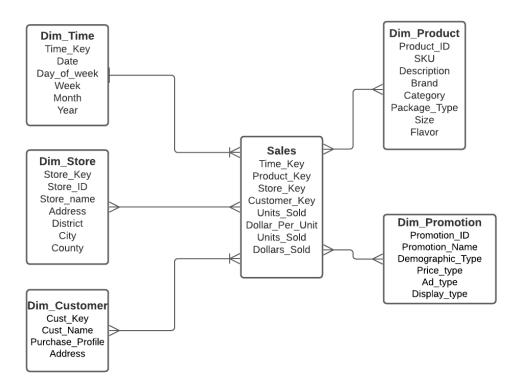
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Creating a Datawarehouse for Avacado2go

Continuing with an idea to build a Datawarehouse for Avocado2go's, we have opted to create a data warehouse utilizing Kimball's dimensional modelling approach to expand business operations into a foreign country, such as Europe, to have a holistic picture of Sales and Sales-based KPIs. As we Understand, each store is administered separately by a store manager. The store relies on databases, excel spreadsheets, and cloud storage to keep track of transactions, customer interactions, inventory, and so on. Our data warehouse project will use existing facilities and databases, connecting them and putting their capabilities to new uses. It will be a centralized, logical location that will house Avocado2go's data from various sources such as the retail transaction system, customer relationship management system, store information, inventory management system, and others to support Avocado2go's business needs.

As discussed in the proposal, we have developed the retail transaction system in detail, and a star database schema based on a denormalized relational model was chosen for this project. The below diagram shows a typical retail data warehouse's entity-relationship diagram, which includes detailed information on the five data dimensions: time, product, store, customer, and promotions. These five dimensions are common dimensional modelling properties in retail environments, making the schema extremely customizable. Each data dimension is designed to allow OLAP tools to "drill down" into the data for more refined details or "roll-up" data for aggregation analysis. A

Sales table at the junction is a fact table in the data warehouse that holds exact metrics, measurements, or quantitative data from business activities.

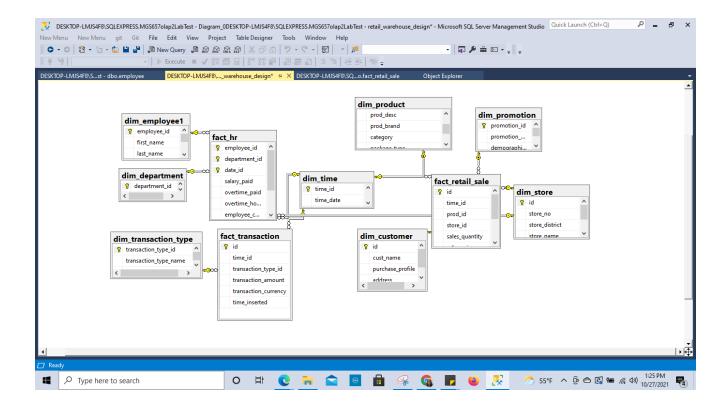


Labor is the managerial component of the data warehouse that allows it to function properly. In comparison to a cloud solution, a warehouse hosted on an in-house server requires human effort to be completely functional and cost effective. Information systems manager, backend developer, and database architect are needed for in-house servers, and a data analyst is needed for the visualization section of the warehouse. For the scope of scalability, there should always be a buffer.

We decided to use an SQL server to implement our Datawarehouse. The warehouse we created for Avocados2go comprises a fact table (Fact retail sale) that is used to measure avocados and other

items sold in the stores. All dimensions, including product, promotion, time, customer, store, are linked to it, allowing for relevant analysis. The product dimension, for example, stores all critical information about the product category, brand, size, price, and so on. Similarly, we have Fact_hr, which consists of the employee information at Avocado2go's. And the Fact_transaction table consists of the transactions based on the type (either online or in-store).

Below is our high-level dimensional model converted into a more detailed database diagram.



Dimensions

Table 1: dim_customer

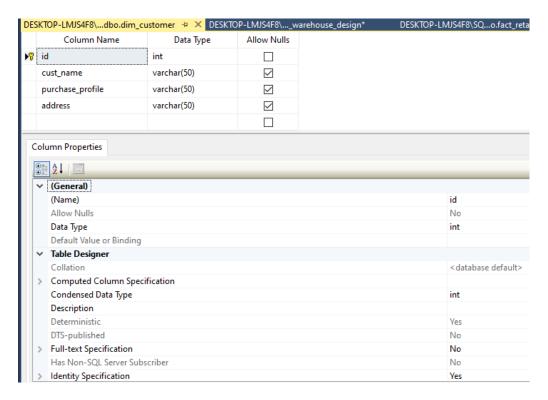


Table 2: dim_product

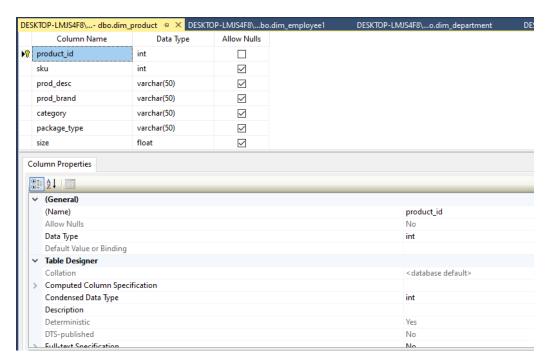


Table 3: dim_promotion

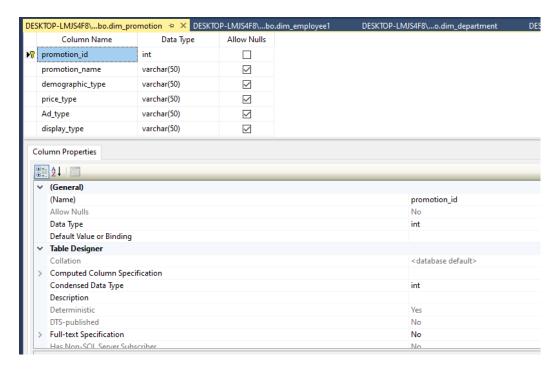


Table 4: dim_store

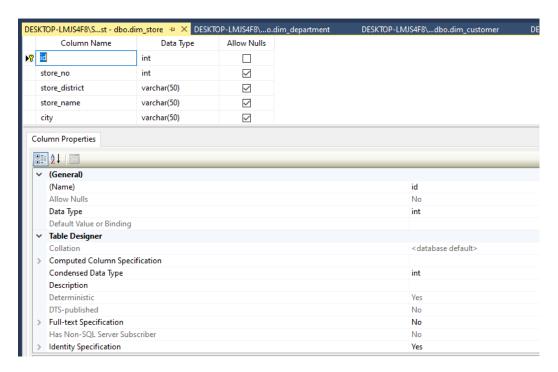


Table 5: dim_employee1

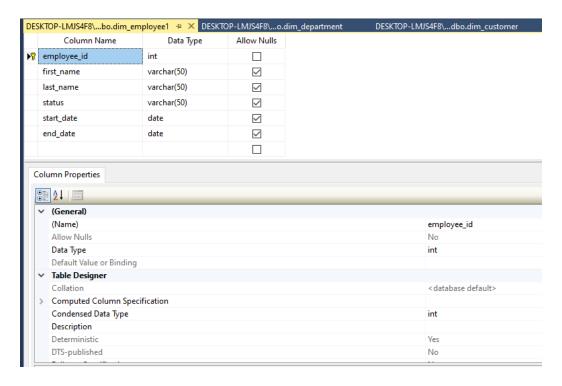


Table 6: dim_time

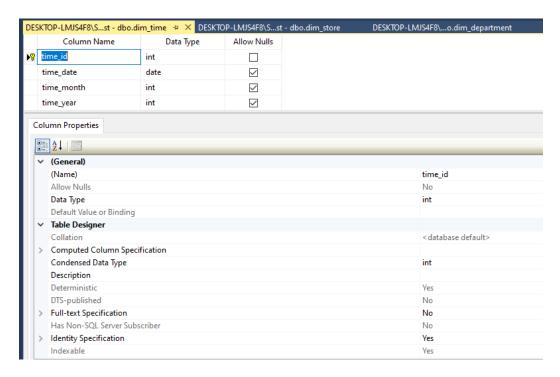


Table 7: dim_transaction_type

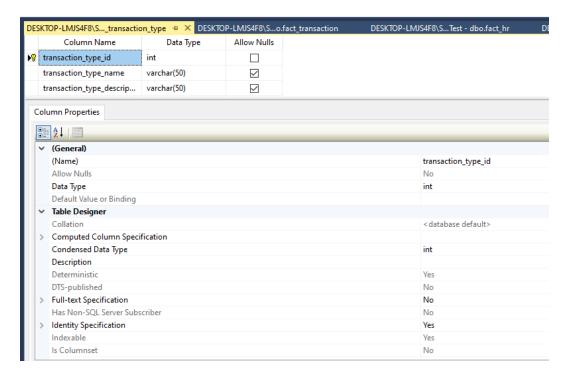
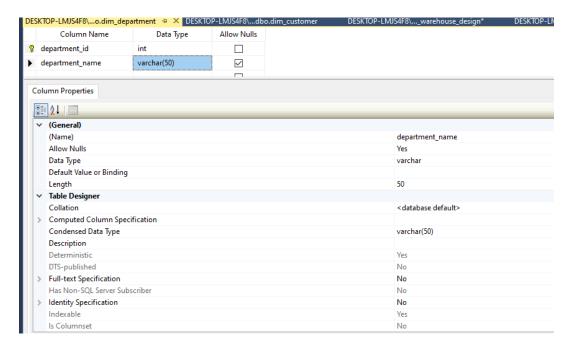


Table 8: dim department



Fact Tables

Table 1: fact retail sale

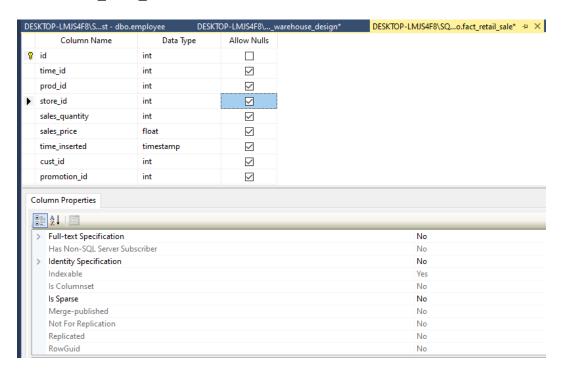


Table 2: fact_transaction

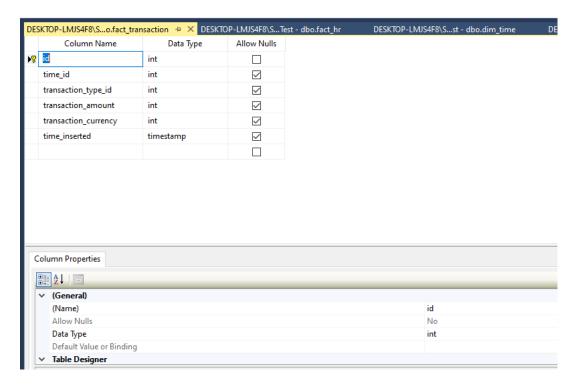
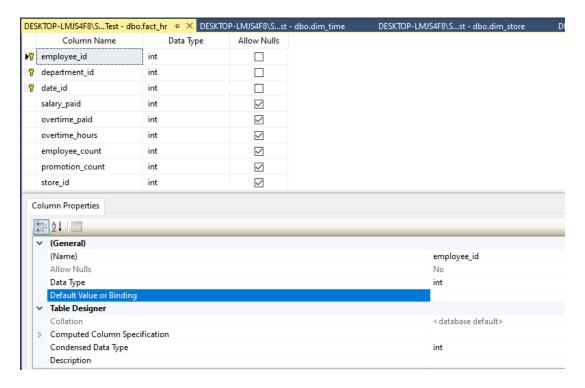
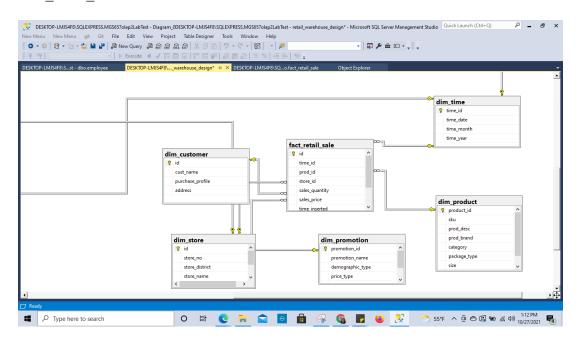


Table 3: fact hr

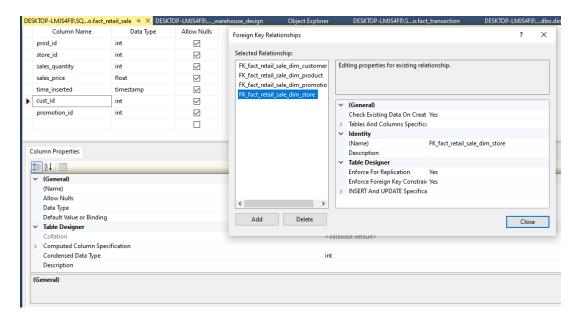


Dimensional model of retail warehouse design

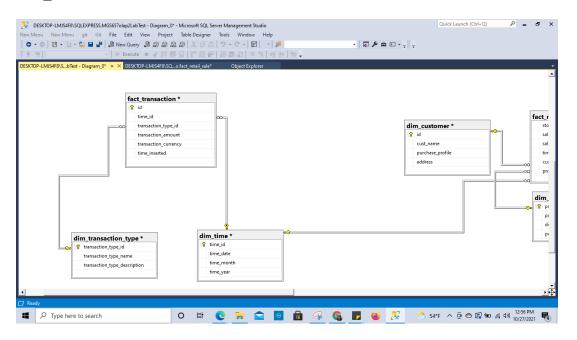
Fact_retail_sale



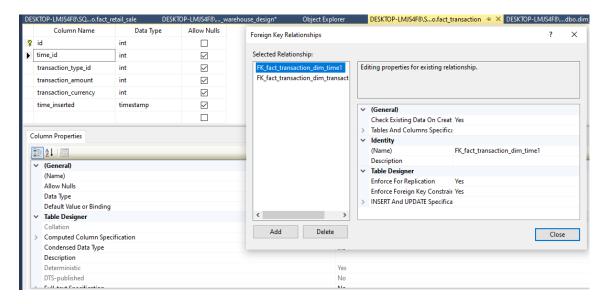
Foreign Key relationships - Fact_retail_sales



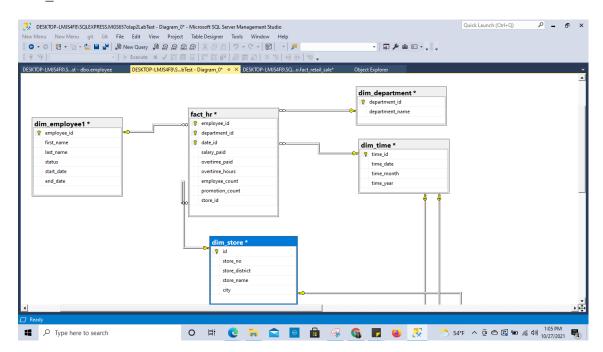
Fact transaction



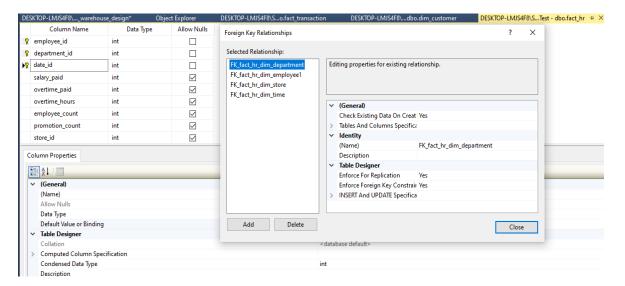
Foreign Key relationships – fact_transaction



Fact hr



Foreign Key relationships - Fact_hr



Schema History for all tables and diagrams

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□ PK	□ PK_fact_hr		Index	
	CREATE	10/26/2021 7:28:06 PM	DESKTOP-LMJS4F8\shrut	shrut

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