

T-SQL Functions Playbook

CREATING MEASURES WITH AGGREGATION FUNCTIONS



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Overview



Access SQL Server Databases

Query and Analyze Data

Create Custom Measures

Highest, Lowest and Average values

So that you can gain insight

- Into Trends and Opportunities
- Share your findings with colleagues



SQL Server Management Studio



<https://docs.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms>



A Tour of the Data



Basic Orientation



Outfitter 24/7
Fictional Online
Retailer



Fact Table
Sales Transactions



Data
2014-2018

Fact Table



De-normalized
2 Types of Columns



Foreign Keys
**Join to dimension
tables**



Quantitative Values
Numeric data columns



Dimension Tables



De-normalized
2 Types of Columns

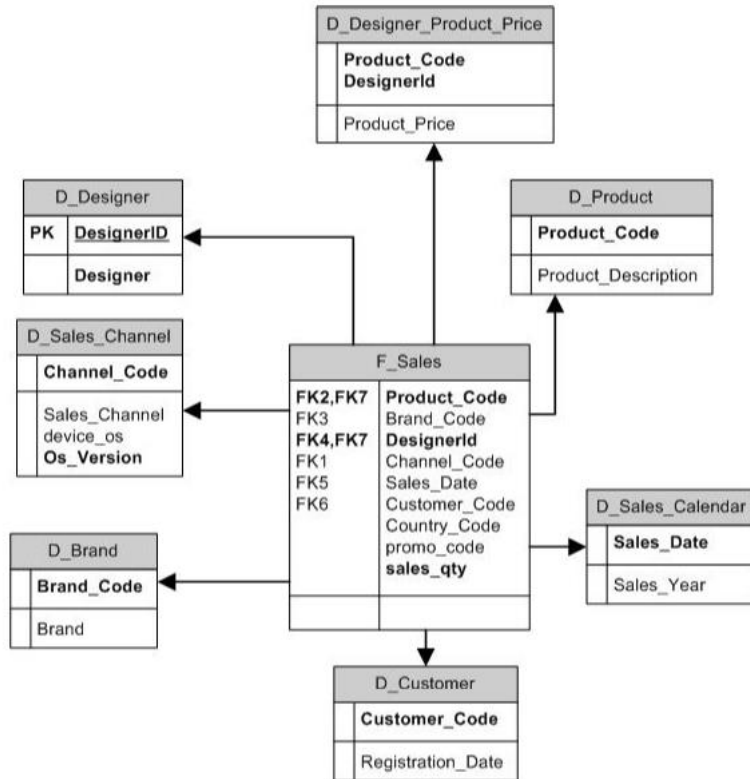


Primary Keys
Join to Foreign keys in
Fact Tables



Dimensional
Attributes
Text and Date
Columns

Star Schema



A collection of Tables

Dimension tables Join to the Fact
To Form a Star

Designed for Data Analytics

- High Performance
- Ideal for Data Aggregation Queries
- Easy to Understand



Creating an Aggregation Query



Aggregation



**Aggregation
Functions**

Summarize Columns



**How Many
Sales Transactions**



**COUNT
Aggregation Function**



COUNT ([Column Name])

AGGREGATION FUNCTIONS

COUNT

Counts the number of Occurrences

Column Name

The name of the data column or * (All columns)



COUNT (DISTINCT [Column Name])

AGGREGATION FUNCTIONS

COUNT

Counts the number of Occurrences

DISTINCT

Extracts a Unique List of Values

Column Name

The name of the data column or * (All columns)



Aggregation Functions



SUM Calculates the Total



MIN Finds the Smallest Value



MAX Finds the Largest Value



AVG Calculates the Average Value



Querying Unique Lists of Values



Basic Concepts



Unique Lists

Years and Channels



Aggregation Functions

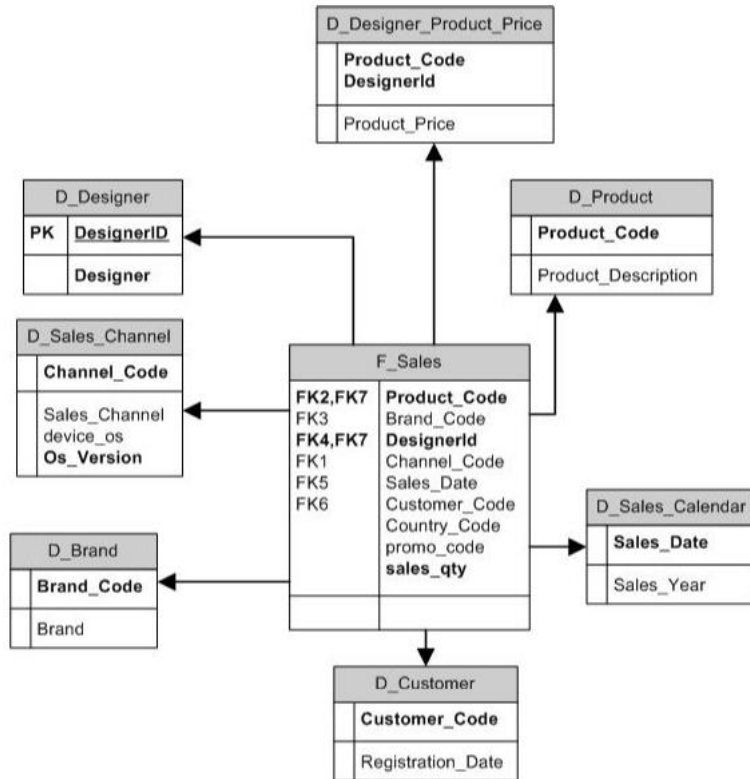
Count, Sum, Min, Max, Avg



Querying Aggregations in Lists



Table Joins



The Year column is in D_Sales_Calendar

The sales_qty column is in F_Sales

My T-SQL code must join these tables

The tables are joined where

- D_Sales_Calendar. Sales_Date
Equals
- F_Sales. Sales_Date



Summary



Aggregation with T-SQL Functions

- COUNT
- SUM
- MIN
- MAX
- AVG

Extract Unique Values using

- DISTINCT

Combine Lists and Aggregates with

- GROUP BY
- ORDER BY

Filter the Output with

- HAVING

