

# Week3\_Implementation

## Part I

You are a data engineer hired by an ecommerce company named SoftCart.com . The company retails download only items like E-Books, Movies, Songs etc. The company has international presence and customers from all over the world. The company would like to create a data warehouse so that it can create reports like

total sales per year per country

total sales per month per category

total sales per quarter per country

total sales per category per country

You will use your data warehousing skills to design and implement a data warehouse for the company.

### Exercise 1 - Design a Data Warehouse

The ecommerce company has provided you the sample data.

OrderID	Item	Category	Price	Country	Date
2123	The Matrix	Movie	9.99	USA	20-Feb-21
3254	The Alchemist	Ebook	5.99	Canada	20-Feb-21
4901	Baby Shark	Song	2.49	Japan	20-Feb-21
5679	The Lord of the Rings	Ebook	6.99	Cyprus	20-Feb-21

### Task 1 - Design the dimension table softcartDimDate

Using the ERD design tool design the table softcartDimDate. The company is looking at a granularity of a day. Which means they would like to have the ability to generate the report on yearly, monthly, daily, and weekday basis.

Here is a partial list of fields to serve as an example:

dateid

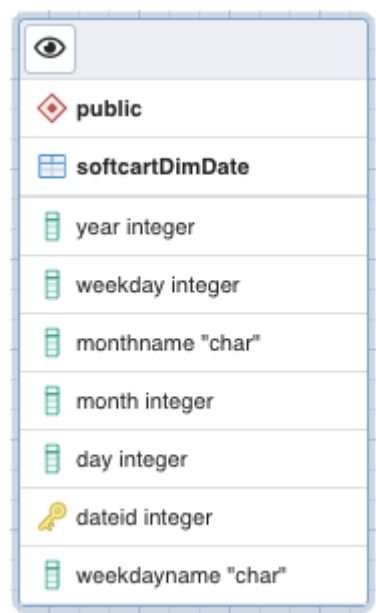
month

monthname (...)

#### softcartDimDate

```
dateid,  
year,  
month,  
monthname,  
day,
```

weekday,  
weekdayname



The diagram shows a table named 'softcartDimDate' with a public access level. It contains nine columns: 'year integer', 'weekday integer', 'monthname "char"', 'month integer', 'day integer', 'dateid integer' (marked as a primary key with a yellow key icon), and 'weekdayname "char"'. Each column is preceded by a green icon representing a data field.

public	
softcartDimDate	
year integer	
weekday integer	
monthname "char"	
month integer	
day integer	
dateid integer	
weekdayname "char"	

Task 2 - Design the dimension table softcartDimCategory

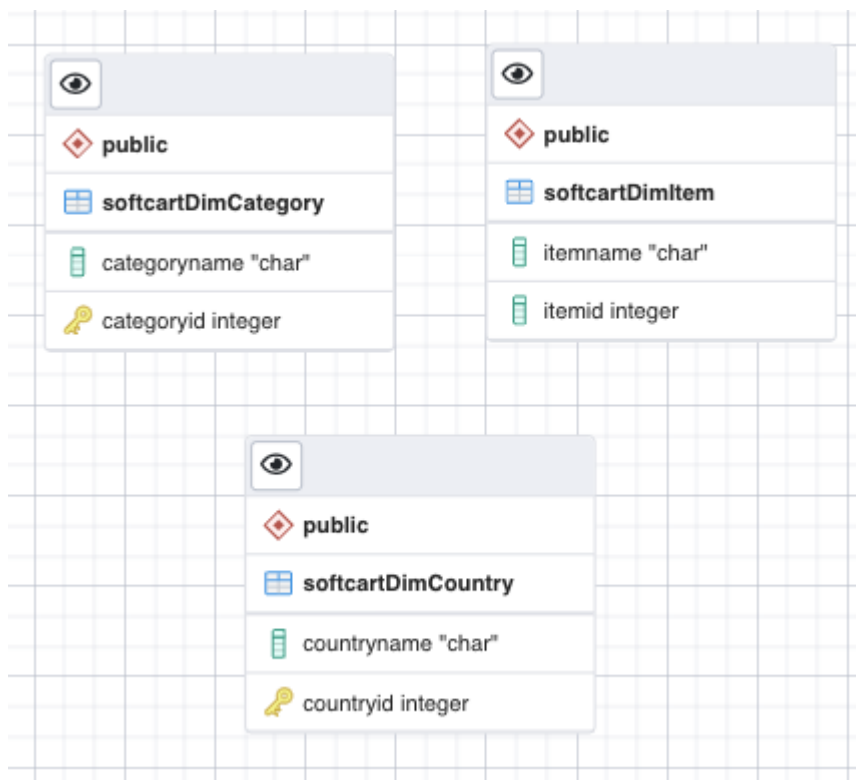
categoryid,  
categoryname

Task 3 - Design the dimension table softcartDimItem

itemid,  
itemname

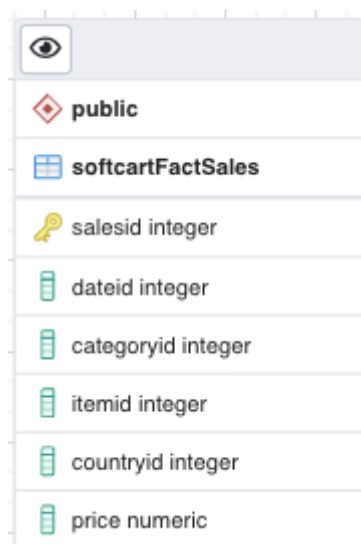
Task 4 - Design the dimension table softcartDimCountry

countryid,  
countryname



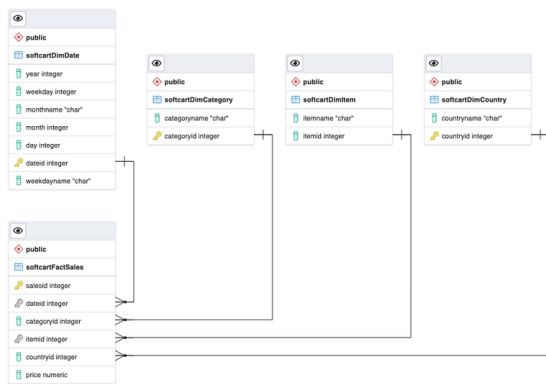
### Task 5 - Design the fact table softcartFactSales

salesid,  
dateid,  
categoryid,  
itemid,  
countryid,  
price



### Task 6 - Design the relationships

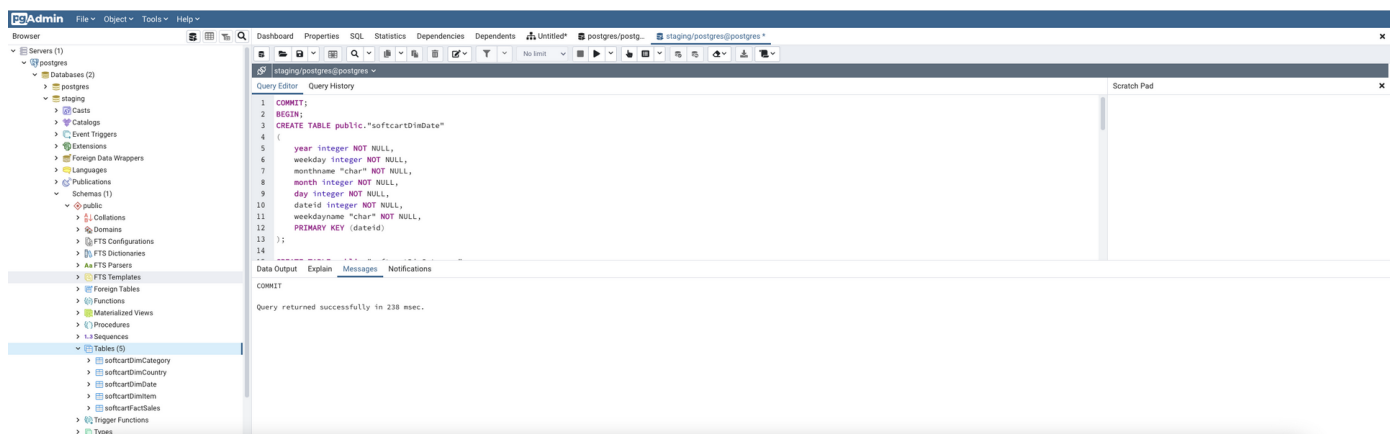
I believe dimcountry to factsales should be 1:1



## Exercise 2 - Create the schema

### Task 7 - Create the schema.

Download the schema sql from ERD tool and create the schema in a database named staging.



## Part II

### Task 1 - Load data into the dimension table DimDate

DATEID	DATE	YEAR	QUARTER	QUARTERNAME	MONTH	MONTHNAME	DAY	WEEKDAY	WEEKDAYNAME
SMALLINT	DATE	SMALLINT	SMALLINT	VARCHAR(2)	SMALLINT	VARCHAR(9)	SMALLINT	SMALLINT	VARCHAR(9)
1	2019-01-01	2019	1	Q1	1	January	1	3	Tuesday
2	2019-01-02	2019	1	Q1	1	January	2	4	Wednesday
3	2019-01-03	2019	1	Q1	1	January	3	5	Thursday
4	2019-01-04	2019	1	Q1	1	January	4	6	Friday
5	2019-01-05	2019	1	Q1	1	January	5	7	Saturday
6	2019-01-06	2019	1	Q1	1	January	6	1	Sunday
7	2019-01-07	2019	1	Q1	1	January	7	2	Monday
8	2019-01-08	2019	1	Q1	1	January	8	3	Tuesday
9	2019-01-09	2019	1	Q1	1	January	9	4	Wednesday
10	2019-01-10	2019	1	Q1	1	January	10	5	Thursday
11	2019-01-11	2019	1	Q1	1	January	11	6	Friday
12	2019-01-12	2019	1	Q1	1	January	12	7	Saturday

### Task 2 - Load data into the dimension table DimCategory



Create a rollup query using the columns `year`, `country`, and `totalsales`.

```
1 select dimcountry.country, dimdate.year, sum(factsales.amount) as totalsales from factsales
2 left join dimdate
3 on dimdate.dateid = factsales.dateid
4 left join dimcountry
5 on dimcountry.countryid=factsales.countryid group by rollup(dimdate.year,dimcountry.country)
6 order by dimdate.year, dimcountry.country
```

Create a cube query using the columns `year`, `country`, and `average sales`.

```
1 select dimcountry.country, dimdate.year, avg(factsales.amount) as avgsales from factsales
2 left join dimdate
3   on dimdate.dateid = factsales.dateid
4 left join dimcountry
5   on dimcountry.countryid=factsales.countryid group by cube(dimdate.year,dimcountry.country)
6 order by dimdate.year, dimcountry.country
7
8
```

Create an MQT named `total_sales_per_country` that has the columns `country` and `total_sales`.

```
1
2 CREATE TABLE total_sales_per_country (country, totalsales) AS (select country, sum(amount)
3 from factsales
4 left join dimcountry
5 on factsales.countryid = dimcountry.countryid
6 group by country)
7 DATA INITIALLY DEFERRED REFRESH DEFERRED MAINTAINED BY SYSTEM;
```

Histórico	<b>Resultados</b>
<p>The materialized query table "SJC89808.TOTAL_SALES_PER_COUNTRY" may not be used to optimize the processing of queries.. SQLCODE=28059, SQLSTATE=01633, DRIVER=4.31.10</p>	
<b>Tempo de execução</b> 0.462 s	Corpo da consulta completa
<b>E executado por</b> SJC89808  <b>Banco de dados</b> cncv13ibmwwn-public:dashdb-for-tr...  <b>Linhas afetadas</b> 0	<pre>CREATE TABLE total_sales_per_country (country, totalsales) AS (select country, sum(amount) from factsales left join dimcountry on factsales.countryid = dimcountry.countryid group by country) DATA INITIALLY REFERRED REFRESH DEFERRED MAINTAINED BY SYSTEM</pre>