

Database Management / SQL

Instructions

This assignment will test your understanding of conditional logic, views, ranking and windowing functions, and transactions.

You will need to create your own test database and tables using the criteria below but it's not necessary to submit the scripts for creating the database objects. Please submit your answers using only one file.

Prompt: A manufacturing company's data warehouse contains the following tables.

Region

<u>region_id (p)</u>	<u>region_name</u>	<u>super_region_id (f)</u>
101	North America	
102	USA	101
103	Canada	101
104	USA-Northeast	102
105	USA-Southeast	102
106	USA-West	102
107	Mexico	101

Note: (p) = "primary key" and (f) = "foreign key". They are not part of the column names.

Product

<u>product_id (p)</u>	<u>product_name</u>
1256	Gear - Large
4437	Gear - Small
5567	Crankshaft
7684	Sprocket

Sales_Totals

product_id (p)(f)	region_id (p)(f)	year (p)	month (p)	sales
1256	104	2020	1	1000
4437	105	2020	2	1200
7684	106	2020	3	800
1256	103	2020	4	2200
4437	107	2020	5	1700
7684	104	2020	6	750
1256	104	2020	7	1100
4437	105	2020	8	1050
7684	106	2020	9	600
1256	103	2020	10	1900
4437	107	2020	11	1500
7684	104	2020	12	900

Answer the following questions using the above tables/data:

Assignment 3

- Write a statement to create a view called Product_Sales_Totals which will group sales data by product and year. Columns should include product_id, year, product_sales, and gear_sales, which will contain the total sales for the "Gear - Large" and "Gear Small" products (should be generated by an expression, and it is OK to use the product_id values in the expression). To accomplish this, you need a CASE statement. The product_sales column should be a sum of sales for the particular product_id and year, regardless of what kind of product it is. The gear_sales column should be a sum of sales only in the case where the product is either "Gear - Large" or "Gear Small". Else in the case that the product is neither "Gear - Large" or "Gear Small", the value for gear_sales should be 0.
- Write a query to return all sales data for 2020, along with a column called "pct_product_sales" showing the percentage of sales for each product by region_id and month. Columns should include product_id, region_id, month, sales, and pct_product_sales. The values in pct_product_sales should add up to 100% for each product.
- Write a query to return the year, month, and sales columns, along with a 4th column named prior_month_sales showing the sales from the prior month. There are only 12 rows in the sales_totals table, one for each month of 2020, so you will not need to group data or filter/partition on region_id or product_id. Please use a windowing function for this as shown in the class video.

4. If the tables used in this prompt are in the 'sales' database, write a query to retrieve the name and type of each of the columns in the Product table. Please specify the 'sales' schema in your answer.