1. A user wants to get the total discount on internet sales in the third calendar quarters for subcatogory of “Road Bikes” where total discount is defined as sale amount multiplies discount percent (note that tax is not included).

tip: Use **FactInternetSales** dimensional model in **AdventureWorksDW** database to do the analysis.

**SQL:**

/\*select sum(FactInternetSales.SalesAmount \* FactInternetSales.UnitPriceDiscountPct)

from FactInternetSales, DimDate, DimProductSubCategory

where DimDate.CalendarQuarter = 3

and DimProductSubCategory.EnglishProductSubCategoryName = 'Road Bikes'\*/

/\*select FactInternetSales.UnitPriceDiscountPct

from FactInternetSales, DimProductSubcategory

where FactInternetSales.UnitPriceDiscountPct > 0\*/

SELECT DISTINCT

DP.DiscountPct,

FIS.SalesAmount,

(DP.DiscountPct \* FIS.SalesAmount) as TotalDiscount

FROM

DimDate DD,

DimProductSubCategory DPSC,

FactInternetSales FIS

inner join DimPromotion DP on DP.PromotionKey = FIS.PromotionKey

WHERE

(DP.DiscountPct \* FIS.SalesAmount) > 0

and DPSC.EnglishProductSubCategoryName = 'Road Bikes'

and DD.CalendarQuarter = 3

**RESULTS:** Returned 15 rows.

**DiscountPct SalesAmount TotalDiscount**

**0.02 539.99 10.7998**

**0.02 49.99 0.9998**

**0.02 742.35 14.847**

**0.02 1120.49 22.4098**

**0.02 24.49 0.4898**

**0.15 742.35 111.3525**

**0.02 8.99 0.1798**

**0.02 769.49 15.3898**

**0.02 2443.35 48.867**

**0.02 2319.99 46.3998**

**0.02 2294.99 45.8998**

**0.22384.07 476.814**

**0.02 1214.85 24.297**

**0.02 2049.0982 40.981964**

**0.02 2.29 0.0458**

1. Use tables in **AdventureWorks** database to do the same analysis in problem 1. Since the tables in these two databases may not be consistent, getting a different value doesn’t mean you did it wrong. The goal of this problem is mainly letting you understand DW database is more user friendly than a OLTP database.

**tips**: find information in SalesOrderDetails, SalesOrderHeader, Product, ProductSubCategory and SpecialOffer tables.

**SQL:**

**RESULTS:**

Answer the following questions with **AdventureWorksDW** database**.**

1. Which one is the most used dimensional table?

**DimDate, since it’s being used to track time, it is present in almost every fact table.**

1. Give two fact tables that use surrogate key as primary key.

**FinanceKey in FactFinance is a Surrogate Key**

**SalesQuotaKey in FactSalesQuota is a Surrogate Key**

1. Is there a factless fact table? If yes, give your judgment.

**FactAdditionalInternationalProductDescription may be a factless fact table. It contains two Foreign Keys, and then ProductDescription, which is not a measure (not useable for calculations)**

1. Give two dimension-hierarchy examples that exist in the database.

**DimDate contains CalendarYear -> CalendarSemester -> CalendarQuarter**

**DimDate ALSO contains FiscalYear -> FiscalSemester -> FiscalQuarter**

1. Give two example of snowflake models in the database. Explain it by referring to the diagrams that you created previously.

**We can find two snowflake models by looking at our table’s relationships.**

**DimProduct relates to DimProductSubcategory, which in turn related to DimProductCategory. This is indicative of a snowflake model.**

**(See “DIM\_PRODUCT” Snowflake in Diagrams)**

*Not sure if this is what you’re looking for:*

**We can see that DimCustomer snowflakes through the DimGeography table. DimGeography is also related to DimSalesTerritory, and DimReseller is related to Geography again.**

**(See “DIM\_CUSTOMER”) In Diagrams**