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CSCI 3287-001
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Homework 5

1. SELECT TABLE_NAME, TABLE_ROWS
   FROM INFORMATION_SCHEMA.TABLES
   WHERE TABLE_NAME LIKE 'Dim%';

   'DimTime', '1158'
   'DimSalesTerritory', '11'
   'DimPromotion', '16'
   'DimProductSubcategory', '37'
   'DimProductCategory', '4'
   'DimProduct', '158'
   'DimGeography', '655'
   'DimEmployee', '296'
   'DimCustomer', '18343'
   'DimCurrency', '105'

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2. SELECT TABLE_NAME, TABLE_ROWS
   FROM INFORMATION_SCHEMA.TABLES
   WHERE TABLE_NAME = 'FactInternetSales';

   'FactInternetSales', '59808'

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3. To differentiate between dimension tables and fact tables, the database designers simply used the prefixes ‘Dim’ and ‘Fact’ when naming tables.

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4. One possible explanation for the recursive relationship on the employees tables could be for employees that have more than one relationship type within the same entity. For example, an employee can be in charge of another employee, while also having a boss (a different employee) themselves.

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5. SELECT DISTINCT EnglishProductSubcategoryName FROM aw.DimProductSubcategory
   WHERE EnglishProductSubcategoryName LIKE '% Bikes';

   'Mountain Bikes'
   'Road Bikes'
   'Touring Bikes'

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6. SELECT FORMAT(SUM(F.UnitPrice), 2) as 'Total Sales', T.CalendarYear,
   S.EnglishProductSubcategoryName
   FROM aw.FactInternetSales AS F
   INNER JOIN aw.DimProduct AS P
   ON F.ProductKey = P.ProductKey
   INNER JOIN aw.DimTime as T
   ON F.OrderDateKey = T.TimeKey
   INNER JOIN aw.DimProductSubcategory as S
   ON P.ProductSubcategoryKey = S.ProductSubcategoryKey
   WHERE S.EnglishProductSubcategoryName = 'Road Bikes'
   GROUP BY T.CalendarYear;

   '2,680,193.00', '2001', 'Road Bikes'
   '4,967,698.00', '2002', 'Road Bikes'
   '3,951,673.00', '2003', 'Road Bikes'
   '2,919,874.00', '2004', 'Road Bikes'

   The total sales for road bikes sold by AdventureWorks were the highest in 2002.

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7. SELECT FORMAT(SUM(F.UnitPrice), 2) AS TotalSales, CONCAT(T.EnglishMonthName, ', ',
   T.CalendarYear), C.gender
   FROM aw.FactInternetSales as F
   INNER JOIN aw.DimTime as T
   ON T.TimeKey = F.OrderDateKey
   INNER JOIN aw.DimCustomer AS C
   ON F.CustomerKey = C.CustomerKey
   INNER JOIN aw.DimProduct as P
   ON F.ProductKey = P.ProductKey
   INNER JOIN aw.DimProductSubcategory AS S
   ON P.ProductSubcategoryKey = S.ProductSubcategoryKey
   WHERE C.Gender = 'F' AND (T.CalendarYear BETWEEN 2001 AND 2004) AND
   S.EnglishProductSubcategoryName LIKE '% Bikes'
   GROUP BY CONCAT(T.EnglishMonthName, ', ', T.CalendarYear)

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ORDER BY TotalSales DESC
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'913,734.00', 'June, 2004', 'F'
'892,596.00', 'May, 2004', 'F'
'818,534.00', 'December, 2003', 'F'
'781,593.00', 'April, 2004', 'F'
'687,611.00', 'March, 2004', 'F'
'673,708.00', 'February, 2004', 'F'
'643,198.00', 'January, 2004', 'F'
'582,473.00', 'November, 2003', 'F'
'547,022.00', 'October, 2003', 'F'
'454,582.00', 'September, 2003', 'F'
'443,430.00', 'July, 2003', 'F'
'383,922.00', 'August, 2003', 'F'
'375,485.00', 'December, 2001', 'F'
'367,802.00', 'May, 2002', 'F'
'352,694.00', 'April, 2002', 'F'
'335,380.00', 'June, 2002', 'F'
'315,140.00', 'January, 2002', 'F'
'306,433.00', 'March, 2002', 'F'
'301,218.00', 'June, 2003', 'F'
'297,786.00', 'December, 2002', 'F'
'295,145.00', 'August, 2001', 'F'
'294,438.00', 'August, 2002', 'F'
'270,474.00', 'February, 2002', 'F'
'266,642.00', 'November, 2001', 'F'
'263,740.00', 'May, 2003', 'F'
'259,179.00', 'February, 2003', 'F'
'249,789.00', 'July, 2002', 'F'
'240,094.00', 'April, 2003', 'F'
'227,888.00', 'October, 2001', 'F'
'225,433.00', 'September, 2001', 'F'
'224,635.00', 'March, 2003', 'F'
'220,013.00', 'July, 2001', 'F'
'215,702.00', 'October, 2002', 'F'
'200,786.00', 'September, 2002', 'F'
'198,629.00', 'January, 2003', 'F'
'169,329.00', 'November, 2002', 'F'

Bike sales to females were greatest in June of 2004.

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8. SELECT FORMAT(SUM(F.UnitPrice - F.ProductStandardCost),2) as Profit,
   S.EnglishProductSubcategoryName as productName
   FROM aw.FactInternetSales as F
   INNER JOIN aw.DimProduct as P
   ON F.ProductKey = P.ProductKey
   INNER JOIN aw.DimTime as T
   ON T.TimeKey = F.OrderDateKey
   INNER JOIN aw.DimProductSubcategory AS S
   ON P.ProductSubcategoryKey = S.ProductSubcategoryKey
   WHERE S.EnglishProductSubcategoryName LIKE '% Bikes' AND T.CalendarYear = '2003'
   GROUP BY productName;

   '1,474,523.00','Road Bikes'
   '1,820,800.00','Mountain Bikes'
   '536,368.00','Touring Bikes'

   For the year 2003, AdventureWorks yielded the highest profit margin for Mountain Bikes.