SQL Assignment for Module #1

This assignment is designed to get you comfortable using the module 1 SQL terms, and the tables of one of the databases. Log into the cb-ot-devst05.ad.wsu.edu database using the login mfstudent and password BIanalyst.   
Run the queries using AdventureWorksDW2014, and answer the following questions about the Adventureworks bicycle company. You do not need to provide your SQL statements.  
  
TIPS: 1) You don’t need any joins to do this assignment.   
  
2) to filter down to show just the bicycles use the following statement WHERE [ProductSubcategoryKey] IN (1,2,3)  
  
3) If you want to remove duplicates use the following keyword. Don’t forget to use   
SELECT DISTINCT([StateProvinceName])  
FROM [dbo].[DimGeography]  
WHERE [EnglishCountryRegionName] = 'United States'  
  
4) If you want to count these states you could use the following:  
SELECT COUNT(DISTINCT([StateProvinceName]))  
FROM [dbo].[DimGeography]  
WHERE [EnglishCountryRegionName] = 'United States'  
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*ok lets get started!*

1. Looking at the **DimEmployee** table, A) how many design engineers does the company have (of any labor grade Jr. Sr., etc.)? B) What is the breakdown # males and # females for any type of engineer? C) Which design engineer has the longest tenure working?
2. There are three design engineers (Gail Erickson, Jossef Goldberg, Sharon Salavaria).
3. For any type of engineer there are three males and five females.
4. The design engineer with the longest tenure is Gail Erickson.
5. A) How many engineers does the company employ in the entire company? Of these engineers B) Whom is the highest paid? C) Which employee has been using the most sick leave (the column sick leave has the list of hours used) D) Who was the engineer hired most recently?
6. There are eight engineers in the entire company.
7. The highest paid engineer is Terri Duffy ($63.46)
8. For engineers both Diane Margheim and Gigi Matthew have used 51 sick leave hours. Of all employees Rob Walters has used the most with 80 sick leave hours.
9. The most recently hired engineer is Sharon Salavaria (08/18/2010).
10. A) How many total **production** employees (supervisors and technicians) are employed? Of these production employees, B) How many of these are Supervisors? C) Which supervisor has the longest job tenure?
11. There are 180 production employees.
12. Of these employees there are 21 supervisors.
13. The supervisor with the longest tenure is Brenda Diaz (10/03/2008).
14. A) How many employees are in management positions? Managers have titles including the words, manager, president, executive, officer). *Of these management types*, B) Whom is the highest paid employee, what is their job title? C) What can you tell about the highest paid employee from their data record?  
      
    a) There are 17 managers + 3 vice presidents + 1 CEO + 2 other officers = 23 management positions.

b) The highest paid employee of these management types is Ken Sanchez (CEO, $125.50).

c) From Ken’s data record you can find personal information such as their hire date, birth date, login ID, email address, phone number, marital status, emergency contact name (which is himself), emergency contact phone (which is also himself), gender, sick leave etc. More broadly I can tell from his data record that Ken does not take his safety very seriously if he can’t be bothered to list a real emergency contact, and neither do any of the 290 employees for this business since every single person has the same personal phone and emergency contact phone number listed.

1. Using the **dimGeography** table, A) How many different countries are products sold to? B) How many different cities are products sold to in America? C) How many states in America? D) How many different cities are product sold to in Europe?
2. Six different countries are sold products.
3. 368 cities are sold products in the US.
4. 36 different states are sold products in the US.
5. 38 Cities in Germany + 34 in France + 35 in Great Britain = 107 different cities in the EU.
6. Using the **dimReseller** table to look at the stores that sell the AdventureWorks product,   
   A) How many Warehouse Stores are there? B) Which warehouse store(s) has the most employees?

a) There are 5 different warehouse stores.

b) The warehouse with the most employees is Bicycle Merchandise Warehouse (58 employees).

1. Using the **DimPromotions** table to look at the promotions used   
   A) what promotion types are there?   
   B) What is the % discount for excess inventory?   
   C) Which bicycle needed a promotion because there was overstock?   
     
   a) The promotion types are: Discontinued Product, Excess Inventory, New Product, No Discount, Seasonal Discount, and Volume Discount.

b) The percent discount for excess inventory isn’t a fixed number, the three instances of excess inventory in the database provided have discount percentages of 30, 50, and 35. (Road-650 Overstock at 30%, Mountain Tire Sale at 50%, and LL Road Frame Sale at 35%)

c) The Road-650 needed a promotion because there was overstock.

1. Using the **DimProduct** table,   
   A) How many different road bikes are there? (Each different product ID is a separate bicycle)  
   B) For road bikes, how many different model names are there?  
   C) For road bikes, what are the different model names?   
   D) How many different mountain bikes are there?   
   E) How many different mountain bikes are less than $1000? What models are these (not sizes)   
   F) What is the average weight of the mountain bikes that are <= $1000  
   G) How does the average weight of the mountain bikes that are > $1000 compare to those that are <= $1000? What is the weight difference?

a) There are 65 different road bikes.

b) There are 7 different road bike models.

c) The different road bike models are the Road-150, Road-450, Road-650, Road-250, Road-550, Road-350, and Road-750.

d) There are 38 different mountain bikes.

e) There are 14 different mountain bikes under $1000. The models are the Mountain-400 and Mountain-500.

f) The average weight for mountain bikes that are less than or equal to $1000 is 27.34

g) The average weight for mountain bikes greater than or equal to $1000 is 22.62. On average bikes that are less than or equal to $1000 are ~4.72 (presumably pounds?) heavier than bikes that are greater than or equal to $1000.

1. Comparing red and yellow bicycles from the **DimProduct** tableA) How many different red bicycles are in the products list?   
   B) What model (150, 250, etc.) looks to be the most expensive? What price?   
   C) How many yellow bicycles are there? Are they the same product mix as the red?   
   D) Are yellow bicycles more or less expensive than the red bicycles?   
   E) What are the average prices for yellow and red bicycles (remember subcategory 1,2,3 are the bicycles)

a) There are 27 different red bicycles in the products list.

b) The Road-150 is the most expensive red bicycle, and the most expensive bicycle of all colorways available.

c) There are 23 yellow bicycles. Yellow bicycles are available in the touring and road models, while red bicycles are available only in road models.

d) Yellow bicycles are less expensive than the red bicycles.

e) The average price for yellow bikes is $1332.90, and the average price for red bikes is $1704.77.

1. In how many different currencies can you purchase product from AdventureWorks?

There are 105 different currencies that you can purchase products with from AdventureWorks.