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Data Management
SQL Assignment 1

In this assignment, you will be writing some database queries based upon the AdventureWorks database that we have been using in class. You'll want to make reference to both the schema diagram and the data dictionary. You also should use SQL Server Management Studio to explore the database. Remember, it's not unusual for database administrators to change the database structure and forget to update the documentation! Check your results carefully. Remember to think about the impact of NULL values in the dataset. Also, be certain that the queries that you write today will still function properly tomorrow, next week, or next year.

Problem 1

You are a business analyst at AdventureWorks and are assisting the Human Resources team with a succession planning exercise. They would like to project upcoming retirements to get a sense of how many positions will need to be filled in the coming years.

There are five parts to this problem. You should be able to answer all five parts using only the information in the HumanResources.Employee table.

Part A

The first step in the succession planning exercise is to come up with a list of all of the job titles of employees in the company. Produce a list of unique job titles, sorted in alphabetical order.

Part B

The Human Resources team would like to identify all of the job titles of employees who are in management roles. Revise your query from Part A to limit the results to those employees who have the word "Manager", "Supervisor", "Chief", or "Vice President" in their titles. Be careful that your results only include employees who are in management roles. As with the previous query, you should produce a list of unique job titles, sorted in alphabetical order.

Part C

Now the Human Resources team would like to know how many employees are in management roles (using the same four job titles as in Part B). Modify your query from Part B to return only the number of employees in those roles. Name the result "Managers".

Part D

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Using a single SQL query, produce a list of current employees at AdventureWorks who are at least 60 years old. The result of your query should be a table of BusinessEntityID (rename this as "EmployeeID"), JobTitle, and BirthDate. Sort this table so that the youngest relevant employee appears at the top of the list.

Part E

A consultant working with the HR team determined that employees with less than seven years of employment are much less likely to leave the company when they become eligible for retirement. Start with the list of employees who are at least 60 years old from Part D and revise your query to show the employee's HireDate and the number of full years of employment (call this column EmploymentYears). Filter the results to only show those employees who have at least seven full years of employment. This time, sort the table so that it shows the relevant employees with the most service first.

Problem 2

After completing your assignment with the Human Resources team, your supervisor next asks you to assist the Product Management team with obtaining some information about current products.

There are four parts to this problem. You should be able to answer all four parts using only the information found in the Production.Products table.

Part A

The product management team would like to provide the warehouse manager with a listing of all of the products that are currently offered for sale and the minimum inventory level for each product. This minimum inventory is known as the safety stock level. To determine whether a product is currently offered for sale, check both the FinishedGoodsFlag and the SellEndDate.

Create a table containing, for all relevant products, the product name, list price, and safety stock level. Sort the table so that it shows the products with the lowest safety stock levels first. Products with the same safety stock level should then be alphabetized by name.

Part B

The product management team would like to verify that the colors of all products are listed correctly in the database. Write a SQL query that looks for any product in the database where the product name contains "yellow" and the color field is not set to "Yellow". Return the name

of the product and the color, sorted by product name in alphabetical order. (Remember, our database is case insensitive, so capitalization doesn't matter.)

Part C

As part of the product refresh cycle, the product managers would like to perform a review of all products that AdventureWorks began selling during the first five months of 2013. Create a list of those products including the product name and the date it was first made available for sale. Sort the list in alphabetical order by product name.

Part D

The product management team would like to know which products had a sales launch (sales start date) that took place during the second half of the week. Produce a list of products that started sales on or after the Wednesday of their launch week. Include the product name, sales start date, and the day of the week. Sort the results by sales start date in ascending order, then by product name in alphabetical order. (NOTE: It is OK to simply provide the number of the weekday. For example, Sunday = 1, Monday = 2, etc.) (Hint: If you're stuck on this, Google the DATEPART() function)

What You Should Turn In

You should upload a single file to Sakai named lastname_1.sql (e.g. chapple_1.sql) that contains your solutions to all nine problem parts.. Include your full name in the submission and use comments to separate the sections from each other. Your file should be a plain text file, which you can generate by saving the query window in SQL Server Management Studio. Do NOT turn in a Word document, PDF, or other file format, as I will not be able to execute your queries. (Note: When you save the file from SSMS, your filename will end in .sql -- this is fine. It's still actually stored as a text file.)

The first command in your file, before your solution to the first problem, should set the current database to AdventureWorks2014.

Please see this sample SQL submission file for an example of the proper formatting.