Professor P. Scheuermann **Fall 2015**

EECS 495 – Introduction to Database Systems

Programming Assignment No. 4

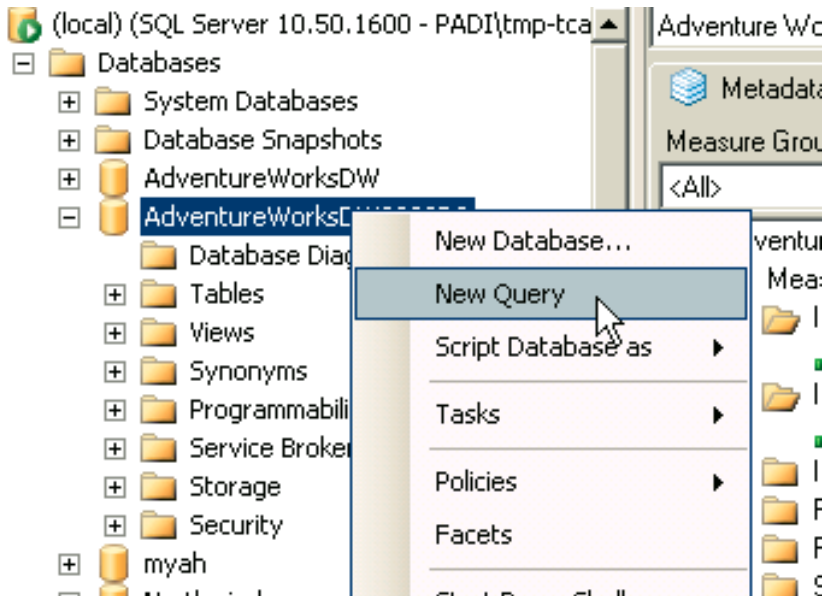
Due: December 7, 2015

Note: you are encouraged to work in teams of two. In such scenario, you are also encouraged to keep the same group as Project 3. If only you decide to change the group from previous project, notify Mas-ud (at mmasud.hussain@gmail.com) of the change and information on new group. Otherwise, you will automatically be thought of working with the group from previous project.

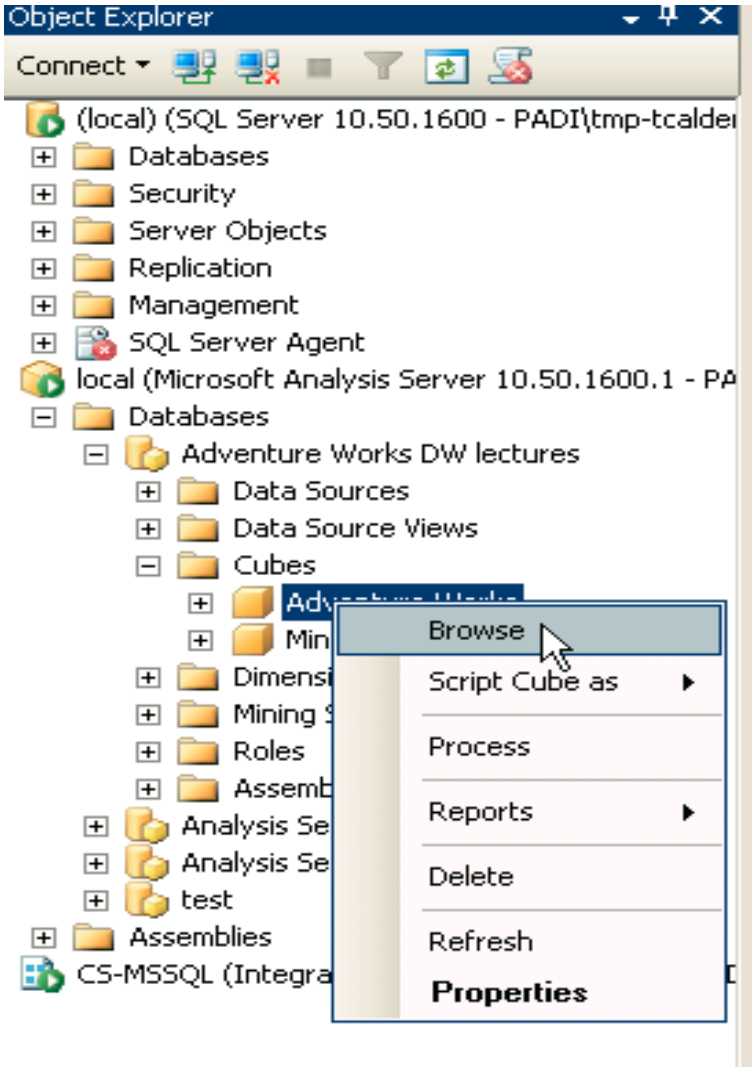
Browsing Cube and Running Queries

As a first step, go through the tutorial (s) attached with the project (do all the steps necessary). Once you are don practicing, download the "Adventure Works Enterprise DB Project.zip" file attached with the project. After that, unzip the file and within, you will find a .sln file (the prepared multi-dimensional model for the project). Open the .sln file in Visual Studio, or SQL Server Data Tools. After that, you right click on the project and run the process (as shown in the tutorial attached). After completing the process, you will "process successful" and "deployed successful" notifications.

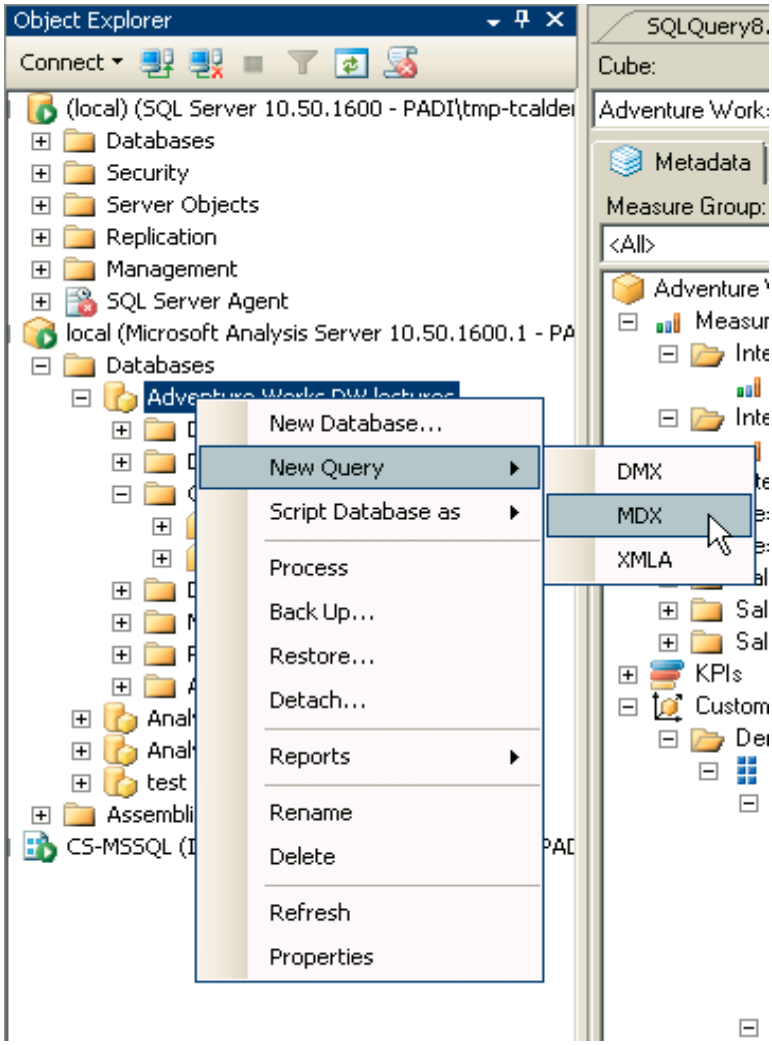
Plain SQL query on the original Relational Database:



Browse the cube in analysis services:



MDX Queries against SSAS database:



Exercises (5 x 20)

1. A) Write an SQL query (run against the SQLServer AdventureWorks database) that returns the aggregates needed for the following cross tabulation:

		All Customers	Female	Male
France	All Customers	1,810	893	917
France	Bachelors	336	156	180
France	Graduate Degree	160	83	77
France	High School	502	256	246
France	Partial College	566	277	289
France	Partial High School	246	121	125
Germany	All Customers	1,780	874	906
Germany	Bachelors	430	222	208
Germany	Graduate Degree	172	85	87
Germany	High School	314	137	177
Germany	Partial College	642	320	322
Germany	Partial High School	222	110	112

Use group by cube/rollup as you feel fit. The table was generated with the following MDX expression:

SELECT
[Customer].[Gender].members on columns,
({ [France], [Germany] }, education.members) on rows
FROM [Adventure Works]
WHERE [Measures].[Customer Count]

B) Create now the cross-tabulation using the cube browser

2. Rewrite the MDX-query of question 1, such that the answer becomes:

		Female	Male
France	Bachelors	156	180
France	Graduate Degree	83	77
France	High School	256	246
France	Partial College	277	289
France	Partial High School	121	125
Germany	Bachelors	222	208
Germany	Graduate Degree	85	87
Germany	High School	137	177
Germany	Partial College	320	322
Germany	Partial High School	110	112

3. Make a cross-table between countries and education level that only includes counts of males.

4. Create a measure that counts the percentage of males in the customer count. Use this measure to make an overview of the percentage of males in the customer counts per country and year.

5. Generate a list of the internet sales amount in all cities of France and Germany. Omit the empty cells.

Hints/Tips:

- To learn about how to install and set-up MS SQL Server appropriately, see the attached document: **MS SQL Server - Install, Data Import & MDX.pdf**.
- To learn more about the syntax and rules of MDX queries, see the attached document: **MDXTutorial.pdf**.
- More information on MSDN website (MDX queries):https://msdn.microsoft.com/en-us/library/ms145514.aspx.
- More information on MSDN website (Analysis Services):https://msdn.microsoft.com/en-us/library/hh231701.aspx.

Submission Guidelines:

Attach screen shots with the results of your queries and upload your solution on Canvas.

Collaboration

Lastly, and most importantly, a note on what is allowed and what is not allowed in terms of collaboration. It is OK to speak in generalities about how one might approach these problems with others. In other words, you can bounce ideas off of one another. However, it is NOT OK TO DISCUSS SQL ANSWERS & STATEMENTS AT ALL, as it relates to these problems, with anyone else in class. It is NOT OK to look at anyone else's answers, or to specifically discuss answers to the problems with anyone else. In short, two sets of answers to the given problems that are turned in with the same SQL statements will be viewed with extreme suspicion (and will be penalized accordingly if cheating is proved).

Late Policy

1 day is 10% off

We will not grade any submission done after that.