OLAP Cube and MDX Practice

The assignment provides experience with visual studio OLAP project and MDX queries. Before starting this assignment, you must have installed SQL Server (with Analysis Service), SQL Server Management Studio and Visual Studio (with Analysis Service extension). You are also welcome to read Microsoft OLAP tutorial.

Deliveries:

First it is expected to create a folder named in the format of **dw_hw3_<firstname>_<lastname>_<studentid>**.

The folder contains:

- Deliveries for each task.
- A README.txt that explain the contents

Then Zip this folder and submit.

Task 1: Create the Sample Database

In this assignment, we use a sample database from Pentaho. First you need to create a SQL Server database **steelwheels.** Then run the sql statements in **sampledata_sqlserver.sql** to populate the database. You are free to browser the tables in the database.

Notes that the database is not in typical data warehouse schemas (like star schemas). However, it does not matter. OLAP does not require the data source is in star schemas (although it benefits both in designing and performance)

Deliveries:

This task does not require any delivery.

Task 2: Build and Deploy (40 points)

This task requires you to create a OLAP project in Visual Studio and deploy it to your local OLAP service. Your project name should be **SteelWheelsOLAP.**

In the project create a cube **SteelWheelsSales** according to the following specification.

Facts (10 points):

Name	**From Table**	**Use Column**
Quantity	ORDERFACT	QUANTITYORDERED
Sales	ORDERFACT	TOTALPRICE

Dimensions (30 points):

Name	**Attributes (and Hierarchy)**	**From Table**	**Use Columns**
Product	Line -> Vendor -> Product	PRODUCTS	PRODUCTLINE, PRODUCTVENDOR, PRODUCTNAME
Market	Country -> State -> City	CUSTOMERS	[COUNTRY], [STATE], [CITY]
Customer	Customer	CUSTOMERS	[CUSTOMERNAME]
OrderStatus	OrderStatus	[ORDERFACT]	STATUS
Time	Year -> Quarter -> Month	[DIM_TIME]	[YEAR_ID], [QTR_NAME], [MONTH_NAME],

Deliveries:

A zip file of your visual studio project.

Tasks 3: Use Excel to analyze with OLAP cube. (18 points)

Create an Excel pivot table, where

- column shows **Time** dimension hierarchy
- and row shows **Market** dimension hierarchy
- and values shows the **Sales** measure.

Note: Please **expand all hierarchy** in the excel table before you save it.

Deliveries:

The Excel file

Tasks 4: Answer Questions in Questions.docx (7 questions x 6 = 42 points)

For single- or multiple- choice questions, simply highlight (bold or color) the answer. For example:

Question: what is this course about?

- Statistics
- C++ programming
- **Data warehouse**

Deliveries:

The word file with answers.