

CMPT-354 D1 Fall 2008
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Solution Assignment 2

Total marks: 100 (10 % of the assignments)
 Due date: September 26, 2008

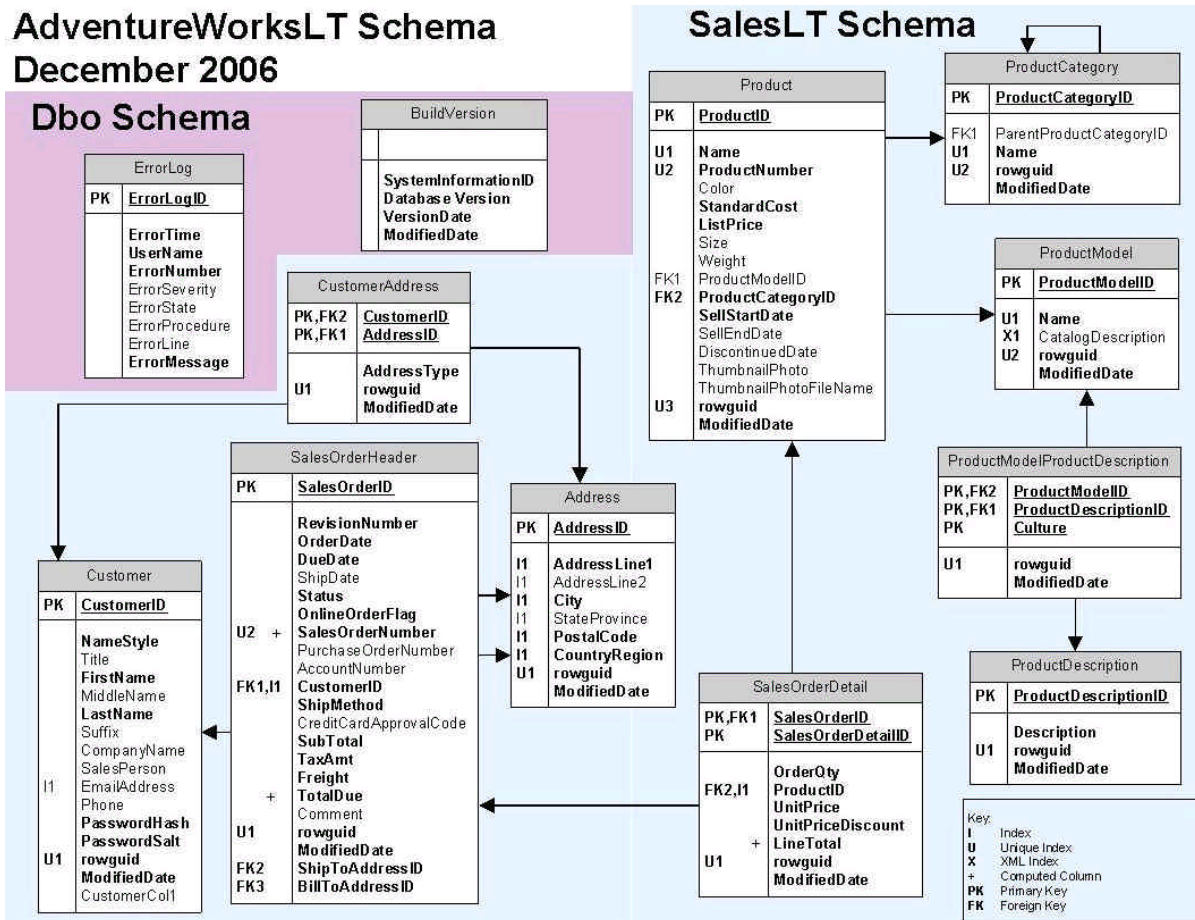
Introduction

This is a practical assignment using SQL Server 2005 Management Studio. Please, submit your solutions in electronic form by email to the TA.

Here is a very useful online book that contains a lot of practical hints:

Paul Nielsen: „SQL Server 2005 Bible“, John Wiley & Sons, 2007
 Available online at <http://library.books24x7.com/toc.asp?bookid=17098>

SQL Server comes with some sample databases, of which we are using the AdventureWorksLT database in this assignment. The following diagram shows the schema of that database:



Tasks

Formulate each of the following queries in SQL.

- a) Find the FirstName, LastName and the City of all Customers in British Columbia.

```
SELECT
    FirstName
    ,LastName
    ,City
FROM SalesLT.Customer C,
     SalesLT.CustomerAddress CA,
     SalesLT.Address A
WHERE
    A.StateProvince = 'British Columbia' AND
    A.AddressID=CA.AddressID AND
    C.CustomerID = CA.CustomerID;
```

- b) Find the Name, the Name of the ProductCategory, the Name of the ProductModel and the Description of all Products that have a Description for Culture = 'en'.

```
SELECT P.Name, C.Name AS Category, M.Name AS Model, D.Description AS Description
FROM SalesLT.Product P,
     SalesLT.ProductCategory C,
     SalesLT.ProductModel M,
     SalesLT.ProductDescription D,
     SalesLT.ProductModelProductDescription MD
WHERE P.ProductModelID = M.ProductModelID
     AND P.ProductCategoryID = C.ProductCategoryID
     AND M.ProductModelID = MD.ProductModelID
     AND D.ProductDescriptionID = MD.ProductDescriptionID
     AND MD.Culture = 'en';
```

- c) For each ProductCategory, list its Name and the number of Products in that ProductCategory in decreasing order of that number.

```
SELECT C.Name AS CategoryName, Count(*) AS NumberProducts
FROM SalesLT.Product P,
     SalesLT.ProductCategory C
WHERE P.ProductCategoryID = C.ProductCategoryID
GROUP BY P.ProductCategoryID, C.Name
ORDER BY NumberProducts DESC;
```

- d) Find the FirstName and the LastName of Customers who have ordered all Products of ProductCategory 'Helmets'.

```
SELECT FirstName, LastName
FROM SalesLT.Customer C
WHERE NOT EXISTS
    (SELECT *
     FROM SalesLT.Product P, SalesLT.ProductCategory Cat
     WHERE P.ProductCategoryID = Cat.ProductCategoryID
          AND Cat.Name = 'Helmets'
          AND NOT EXISTS
              (SELECT *
               FROM SalesLT.SalesOrderHeader H, SalesLT.SalesOrderDetail D
               WHERE H.CustomerID = C.CustomerID
                    AND H.SalesOrderID = D.SalesOrderID
                    AND D.ProductID = P.ProductID));
```

- e) Find the Name and the number of Products of the ProductCategory with the largest number of Products.

```
WITH AggregatedCategories (CategoryName, NumberProducts)
AS (SELECT ProductCategory.Name AS CategoryName, Count(*) AS NumberProducts
    FROM SalesLT.Product,
         SalesLT.ProductCategory
    WHERE Product.ProductCategoryID = ProductCategory.ProductCategoryID
    GROUP BY Product.ProductCategoryID, ProductCategory.Name)
SELECT CategoryName, NumberProducts
FROM AggregatedCategories
WHERE NumberProducts =
    (SELECT MAX(NumberProducts) FROM AggregatedCategories);
```