

LAB EXERCISE I

Creating a relational database

This exercise is aimed at teaching you how graphical and text based tools can be used to create a database, how to enter posts, how reference integrity works in practice and how a data dictionary is built.

You are about to create the database you worked on at the seminar by using the graphical tools in **SQL Server Management Studio**. Another alternative would have been to create the database using SQL queries (for information about creating tables in SQL Server you can look in the booklet "Structured Query Language (SQL)", "SQL Server example" and the course literature chapter 6 and 7).

Remember that some of the things you will be doing today has to be included in you project documentation, so make sure to save your work. Also note that lab exercise 2 will be based on your work today, so use a database you will have access to the next time as well.

Exercise I

Using the ER-model you created during the seminar, create all the tables and attributes in SQL Server Management Studio. Remember to give each table a primary key. Make informed decisions regarding data types – make sure you can defend your choices. If you want to read up on the different data types in SQL Server there is an excellent summary available here (scroll down to "SQL Server Data Types"): http://www.w3schools.com/SQL/sql_datatypes.asp

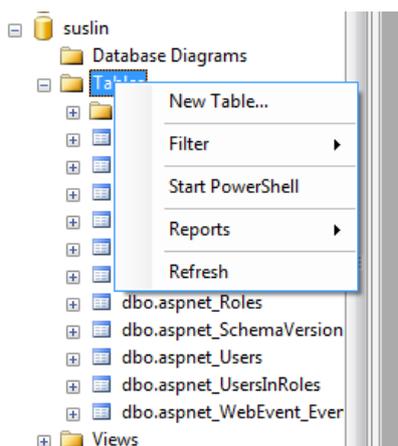


Figure 1. Create table

Column Name	Data Type	Allow Nulls
customerId	int	<input type="checkbox"/>
		<input type="checkbox"/>

Figure 2. Add attributes

Exercise 2

Create a database diagram and add all the tables you created. Set the relationships by dragging and dropping from the primary key to the matching foreign key. Make sure that the cardinality for the relationship is correct (e.g. 1:1 or 1:M).

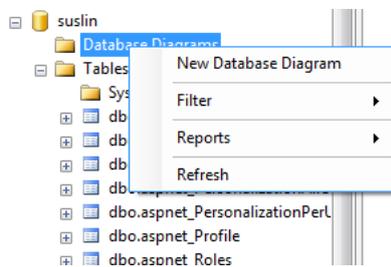
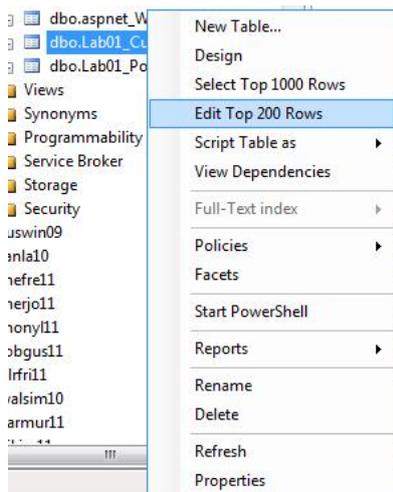


Figure 3. Create a new diagram

Exercise 3

Insert at least five tuples into each table (use data that seems realistic, e.g. Anna Anderson, Stoneway 3). You will be using the data you enter now at the next lab exercise to write queries.



Figur 4. Add posts

Exercise 4

Document your database as a data dictionary, including entities, attributes, data types and relationships (compare figures 16.1, 16.3 and 16.4 in the literature). Make sure you enter the data types you used for the attributes. This will later be included in your project documentation so make sure you save it somewhere you can access it later.

	A	B	C	D	E	F
1	Table name	Attribute name	Description	Data type	Nulls	Multivalued
2	Customer	CustomerId	Unique identifier of customer	int	No	No
3		Fname	Customer first name	nvarchar(30)	No	No
4		Ename	Customer last name	nvarchar(30)	No	No

Figur 5. Example of a Data Dictionary

Good luck!

Extra: Backup the database

Before running SQL-queries on your database, it is recommended that you make a backup of the database. You can do this by creating a DDL-diagram that includes the SQL-syntax to fully create the database. There is a video available at the course webpage telling you how to do this, and you can also access the video here: <http://www.screenr.com/IVqs>