Lab 3. Altering the Database

- assigned: week 6; due: week 8

Sometimes, after you design a database, you need to change its structure. Unfortunately, changes aren't correct every time, so they must be reverted. Your task is to create a versioning mechanism that allows you to easily switch between database versions.

Write SQL scripts that:

a. modify the type of a column;

b. add / remove a column;

c. add / remove a DEFAULT constraint;

d. add / remove a primary key;

e. add / remove a candidate key;

f. add / remove a foreign key;

g. create / drop a table.

For each of the scripts above, write another one that reverts the operation. Create a new table that holds the current version of the database schema. For simplicity, the version is assumed to be an integer number.

Place each of the scripts in a stored procedure. Use a simple, intuitive naming convention.

Write another stored procedure that receives as a parameter a version number and brings the database to that version.

Useful references:

- seminars 1, 3
- T-SQL
    - DECLARE, SET, BEGIN, END

      http://msdn.microsoft.com/en-us/library/ms188927.aspx
      http://msdn.microsoft.com/en-us/library/ms189484.aspx
      http://msdn.microsoft.com/en-us/library/ms190487.aspx

    - WHILE
      http://msdn.microsoft.com/en-us/library/ms178642.aspx

    - sp_executesql
      http://msdn.microsoft.com/en-us/library/ms188001.aspx

- Stored Procedures
  http://msdn.microsoft.com/en-us/library/ms190782.aspx

- SQL Server technical documentation
  https://docs.microsoft.com/en-us/sql/sql-server/sql-server-technical-documentation