Databases – lab 3 (Computer Science)

[July 1, 2020](https://sabina-cs.com/databases-lab-3-computer-science-3/) [sabina](https://sabina-cs.com/author/sabinacs/)

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. Place each script in a stored procedure. Use a simple, intuitive naming convention.

Create a new table that holds the current version of the database schema. Simplifying assumption: the version is an integer number.

Write a 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>