Databases Laboratory Work № 2

The Creation and Maintenance of Databases

Prerequisites:

SQL Server 2017, SQL Server Management Studio 2017

Objectives:

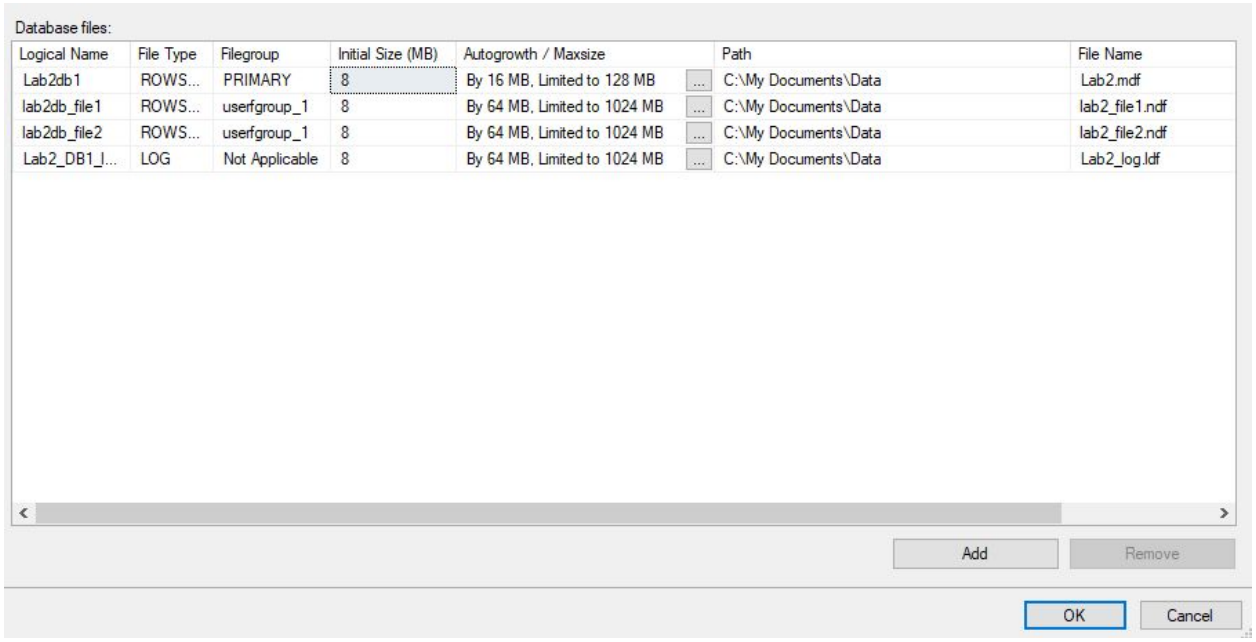
- Study Chapter 2;
- Complete the practical tasks.

Tasks:

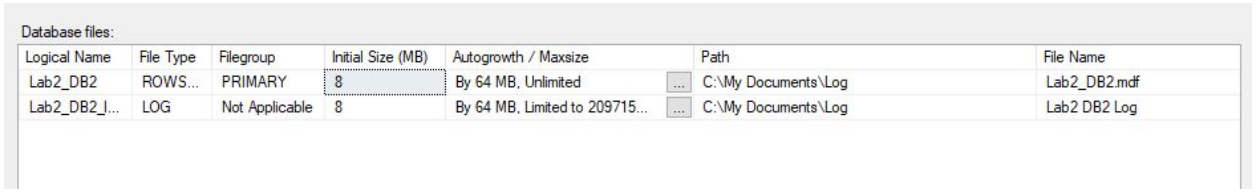
1. Create a database in the ***MyDocuments/Data*** folder, fixing the growth of the primary file in 16MB with limit to 128MB and of the log file with growth of 64MB limited to 1024MB. The secondary files should be defined in a new filegroup and with the growth of 64MB limited to 1024MB;
2. Create a database with the log file located in ***MyDocuments/Log,*** the name of the log file should be different in the OS environment. It is important that the database should be compatible with SQL Server 2017 and to be accessible to only one user at a specific time.
3. Create a maintenance plan for the database created in the first task. The unused space should be shrinked when it reaches 2000MB. The freed space should be returned to the OS. This plan should be executed every Friday at 12 AM. The report should be saved in ***MyDocuments/SQL_event_logs*** folder. Initialize the maintenance plan, verify the results in the log file.
4. Create a maintenance plan for the database created in the second task. It should be called “Reconstruire Index”. In this plan, the system must accomplish the rebuilding of indices of the tables only (excluding the views). The free space on the page should be 10%. The sorting of indices should be realized in tempdb. After rebuilding, the complete statistics should be collected about the rebuilt indices. The third step of the plan should be the task of erasing the history of the Backup-Restore operations that had taken place in the SQL Server. All the history that is older than 6 weeks should be deleted. This plan should be executed monthly, on the first Sunday. Create the ***MyDocuments/SQL_event_logs*** folder. The execution report should be placed there and the maintenance process should be logged extensively. Initialize the maintenance plan, verify the results in the log file.

Implementation:

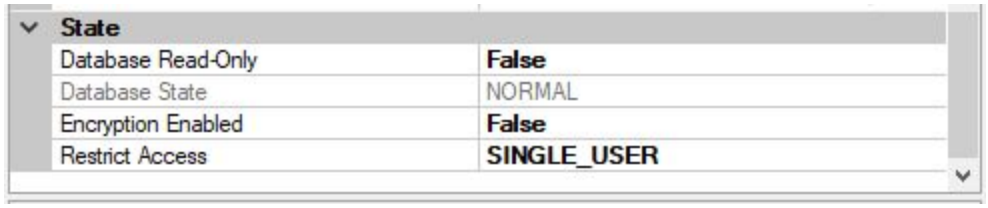
Here is the first database, with the configured file growth, path and filegroups.



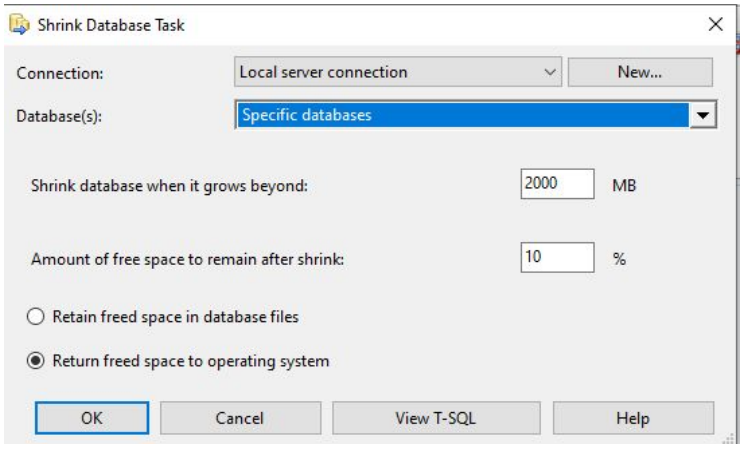
Here is the second database, with the configured log file name.

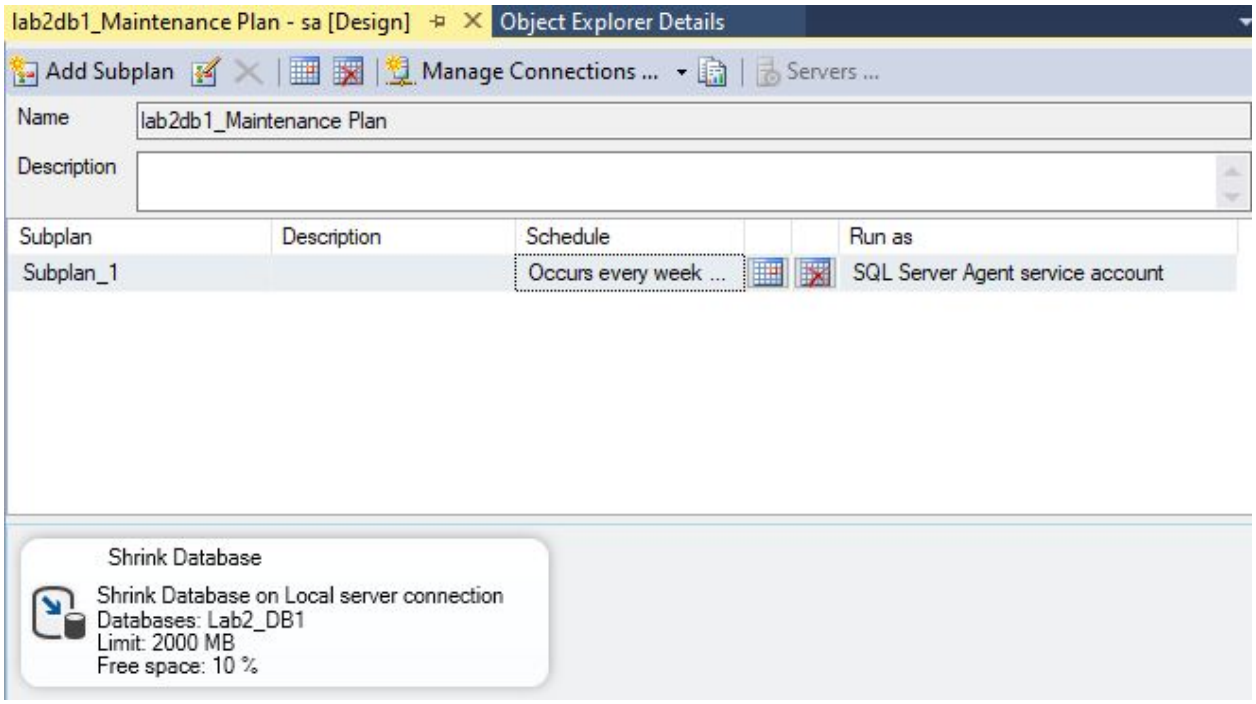


And as requested, to this database only one user at a time should have access.

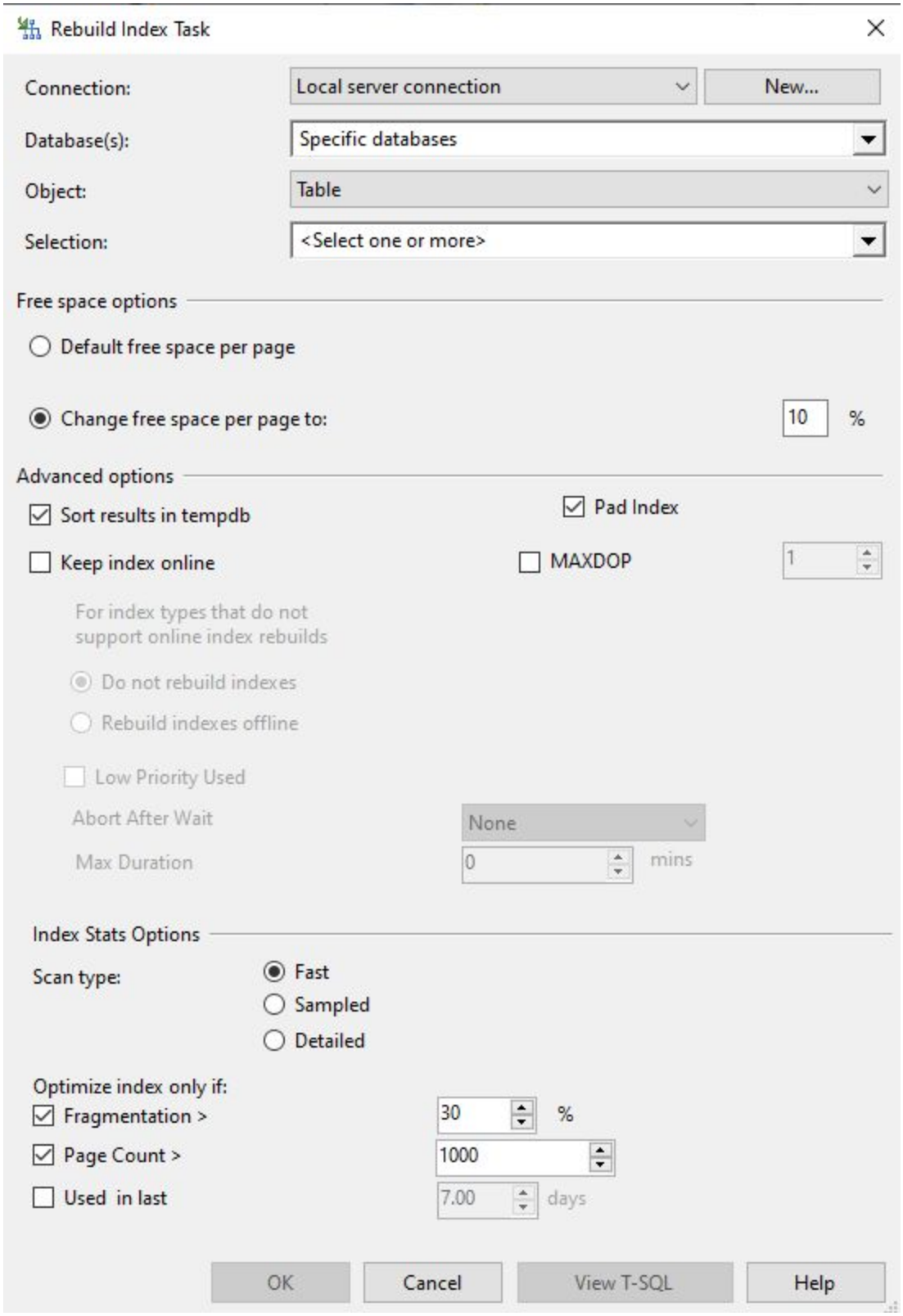


The first maintenance plan consists only of shrinking the database when it reaches 2000MB and returning the freed space to the OS.

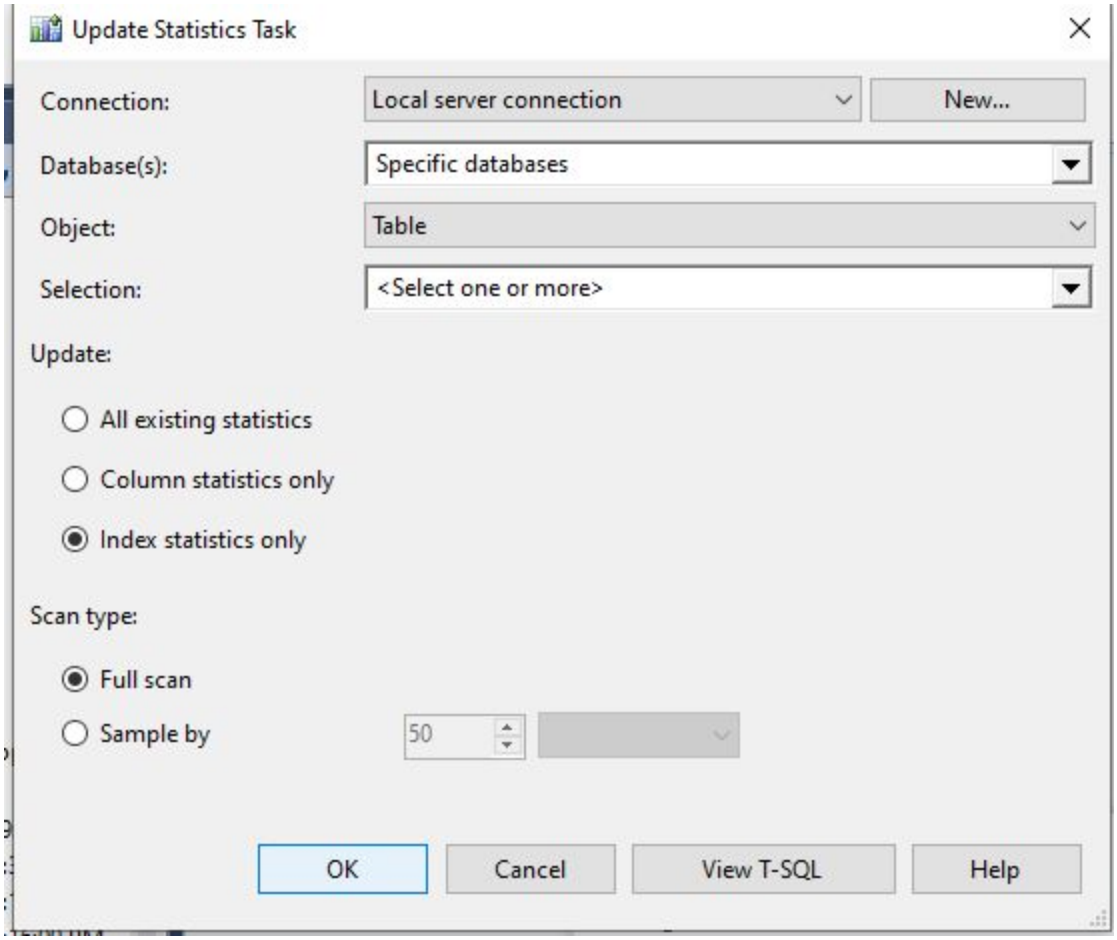




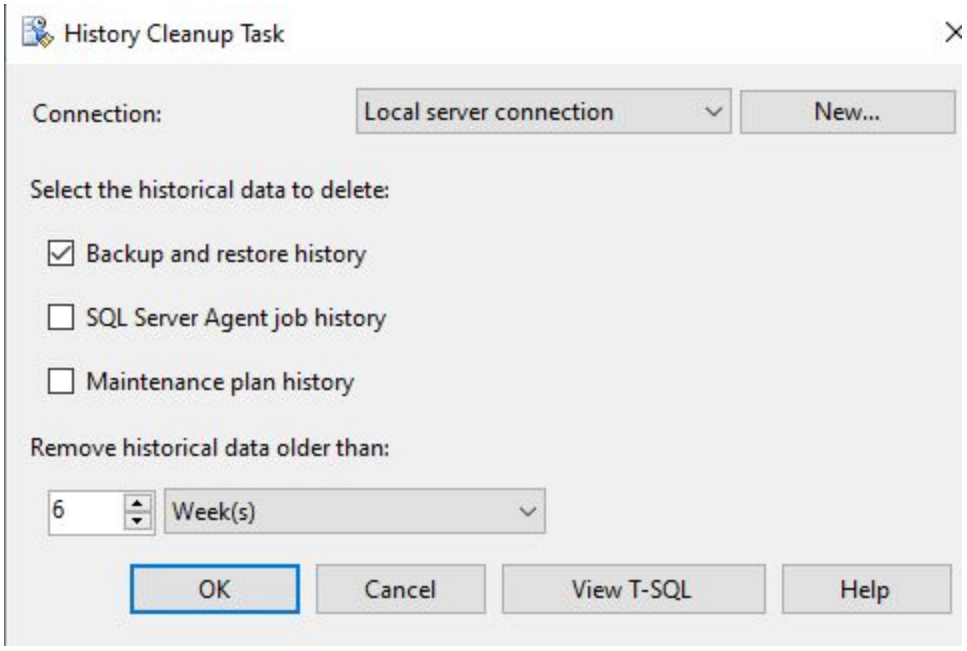
In the second maintenance plan we had to create a maintenance plan for the database created in the second task. It should be called “Reconstruire Index”. In this plan, the system must accomplish the rebuilding of indices of the tables only (excluding the views). The free space on the page should be 10%.

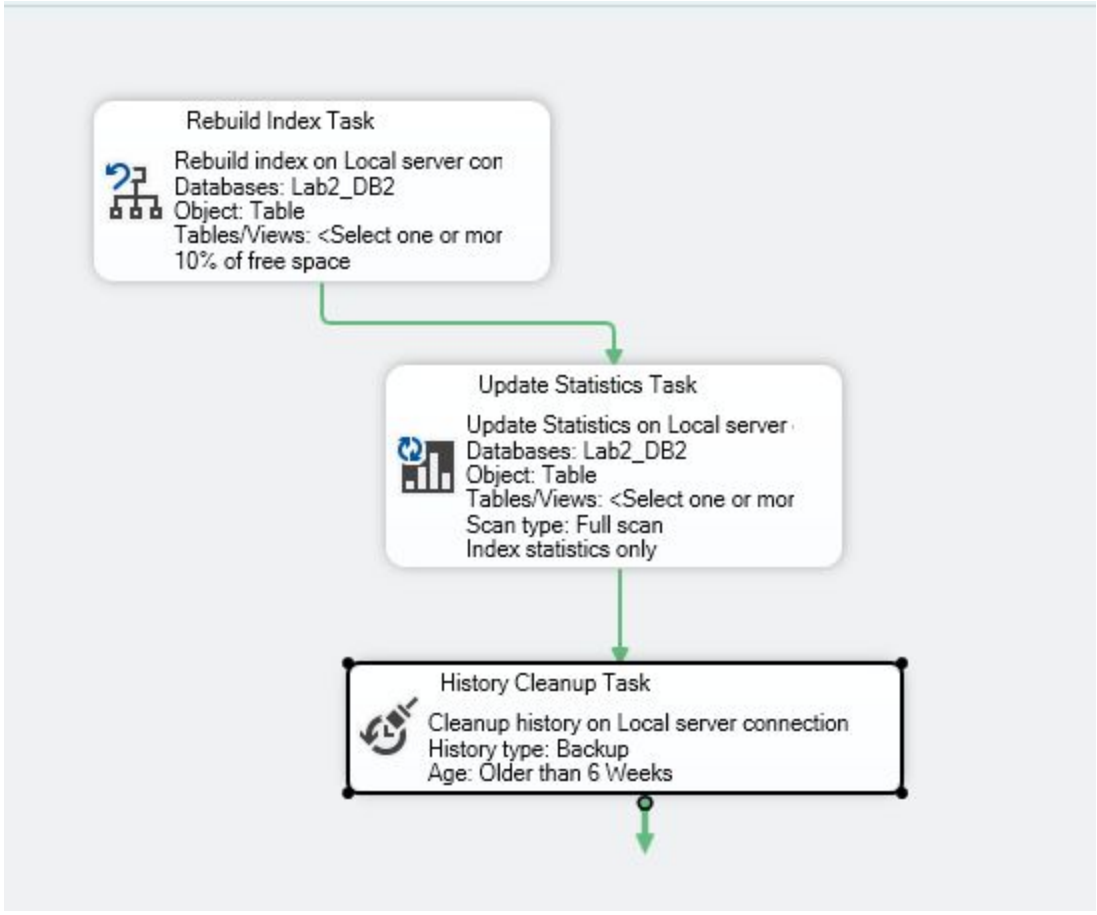


The sorting of indices should be realized in tempdb. After rebuilding, the complete statistics should be collected about the rebuilt indices.

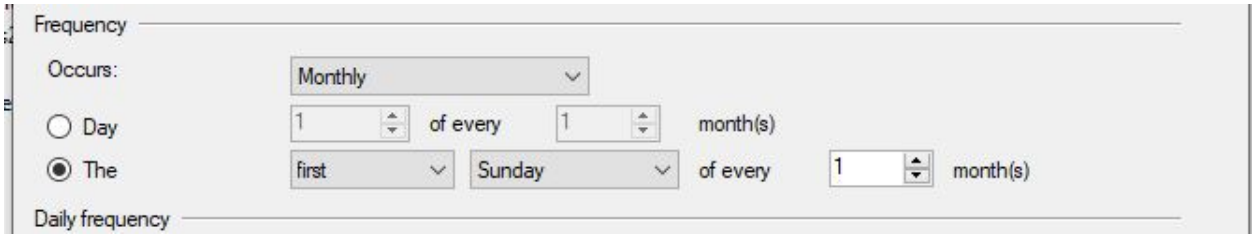


The third step of the plan should be the task of erasing the history of the Backup-Restore operations that had taken place in the SQL Server. All the history that is older than 6 weeks should be deleted. This plan should be executed monthly, on the first Sunday.





This plan should be executed monthly, on the first Sunday.



Conclusion:

During this activity I learned how to create and configure databases. Along it I discovered the multitude of options one is presented with when configuring a database. I became familiar with maintenance plans, how to create them either manually or via Maintenance Plan Wizard, how to configure tasks and how to set up the reports and execution times.