

Databases Laboratory Work Nr.2

Pasecinic Nichita

FAF – 192

09.11.2020

Title: Creating and maintaining the database

Prerequisites:

- PC with MySQL tools installed
 - Lab book with steps
 - Basic knowledge about MySQL
-

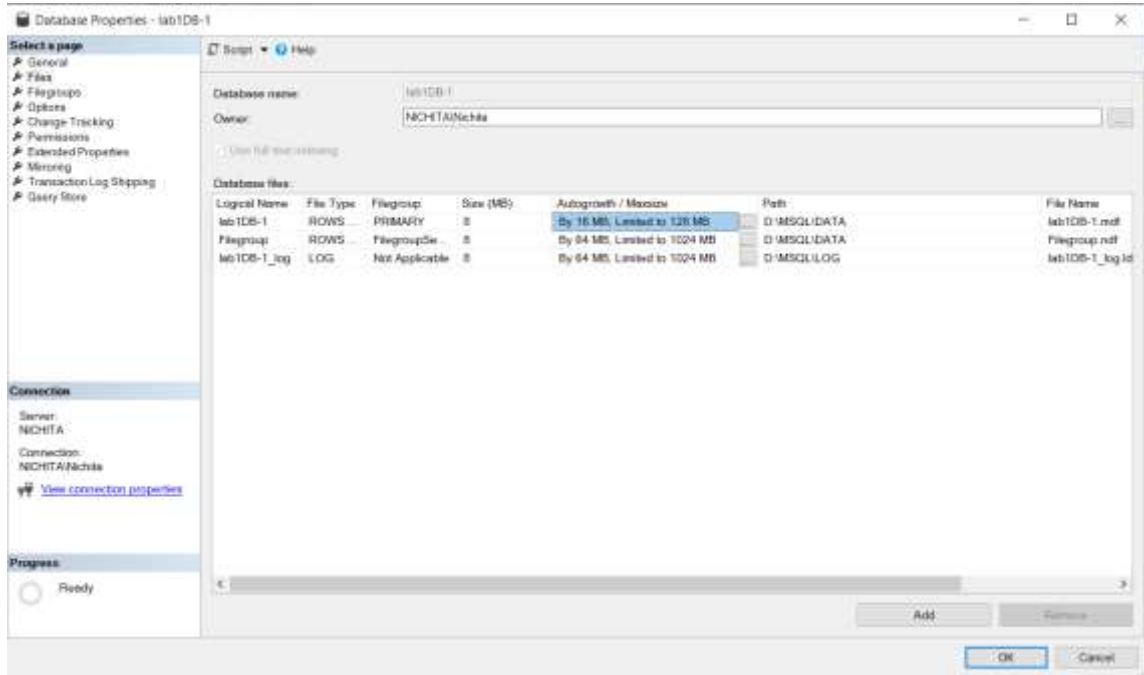
Tasks:

- Create a database physically placed in the MyDocs \ Data folder, setting a file growth of the 16MB base with a growth limit of 128 MB and of the 64 MB log with the 1024 MB growth. For secondary files to define a new default Filegroup, setting the growth of secondary files to 64 MB with a limit of 1024 MB. Configuration of SQL Server 2017
- Create a database, where the log file is physically placed in the MyDocs\Log folder, name the log file of the operating system environment must differ from the logically defined one in physical scheme. It is important that the database created is compatible with the MS SQL system
- Create the database maintenance plan, built in task 1. Unused space by the database files must be removed when it reaches the size 2000Mb. Space released must be returned to the operating system. This operation must run every Friday at 00:00. The maintenance plan execution report must be saved to the folder MyDocs \ SQL_event_logs. Initialize the execution of the plan. After execution, check results in log file.
- Create the database maintenance plan, built in exercise 2. The name of the plan will be: "Index reconstruction". In this plan, the system must perform the reconstruction of indices only on the basic tables (excluding views) from all existing schemes in the database in case. The free space on the page must be 10%. Sorting of indexes must be done in tempdb. After the reconstruction, the collection of statistics must follow completely about reconstructed indices. The third step of the plan should be the task of Clear history of Backup-Restore operations on SQL Server. Must Delete the history that is older than 6 weeks. This plan must be executed in each the first Sunday of the month. Create the MyDocs\ SQL_reports folder.

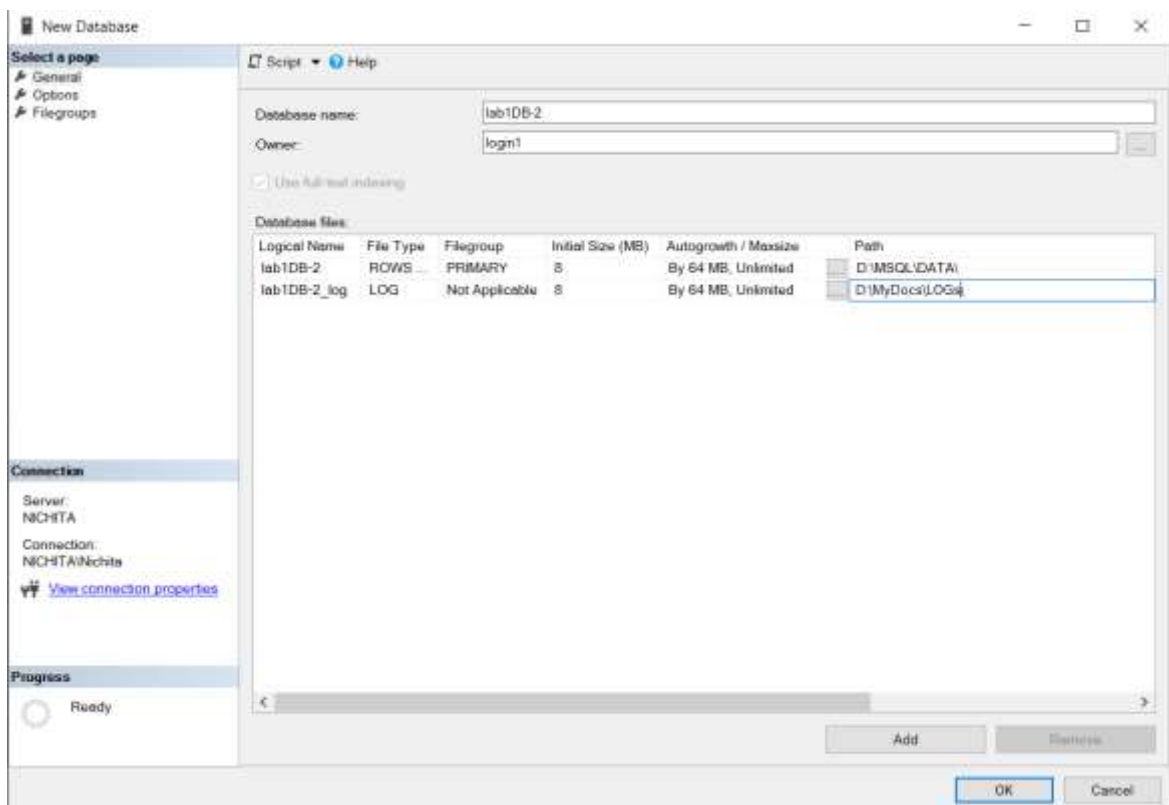
Execution report of This file must be added to the plan. Maintenance process - to be logged in mod extended. Initialize the execution of the plan. After execution, check the results in the log file generated.

Implementation:

Task 1:



Task 2:



New Database

Select a page

- General
- Options
- Filegroups

Script Help

Collation: <default>

Recovery model: Full

Compatibility level: SQL Server 2017 (140)

Containment type: None

Other options:

Category	Option	Value
Automatic	Auto Close	False
	Auto Create Incremental Statistics	False
	Auto Create Statistics	True
	Auto Shrink	False
	Auto Update Statistics	True
	Auto Update Statistics Asynchronously	False
Containment	Default Fulltext Language LCID	1033
	Default Language	English
	Nested Triggers Enabled	True
	Transform Noise Words	False
Cursor	Close Cursor on Commit Enabled	False
	Default Cursor	GLOBAL
Database Scoped Configurations	Legacy Cardinality Estimation	OFF
	Legacy Cardinality Estimation For Secondary	PRIMARY
	Max DOP	0
	Max DOP For Secondary	ON
	Parameter Sniffing	PRIMARY

Auto Close

OK Cancel

Task 3:

Maintenance Plan Wizard

Select Plan Properties

How do you want to schedule your maintenance tasks?

Name: MaintenancePlanForDB1

Description:

Run as: SQL Server Agent service account

☐ Separate schedules for each task
☒ Single schedule for the entire plan or no schedule

Schedule: Occurs every week on Friday, Sunday at 12:00:00 PM. Schedule will be used starting on 9/

Change...

Help < Back Next > Finish Cancel

Select Maintenance Tasks

Which tasks should this plan perform?



Select one or more maintenance tasks:

- ☐ Check Database Integrity
- ☒ Shrink Database
- ☐ Reorganize Index
- ☐ Rebuild Index
- ☐ Update Statistics
- ☐ Clean Up History
- ☐ Execute SQL Server Agent Job
- ☐ Back Up Database (Full)
- ☐ Back Up Database (Differential)
- ☐ Back Up Database (Transaction Log)
- ☐ Maintenance Cleanup Task

The Shrink Database task reduces the disk space consumed by the database and log files by removing empty data and log pages.

Help

< Back

Next >

Finish

Cancel

Define Shrink Database Task

Configure the maintenance task.



Databases:

Specific databases

Shrink database when it grows beyond:

2000

MB

Amount of free space to remain after shrink:

10

%

☐ Retain freed space in database files☒ Return freed space to operating system

Schedule:

Not scheduled (On Demand)

Change...

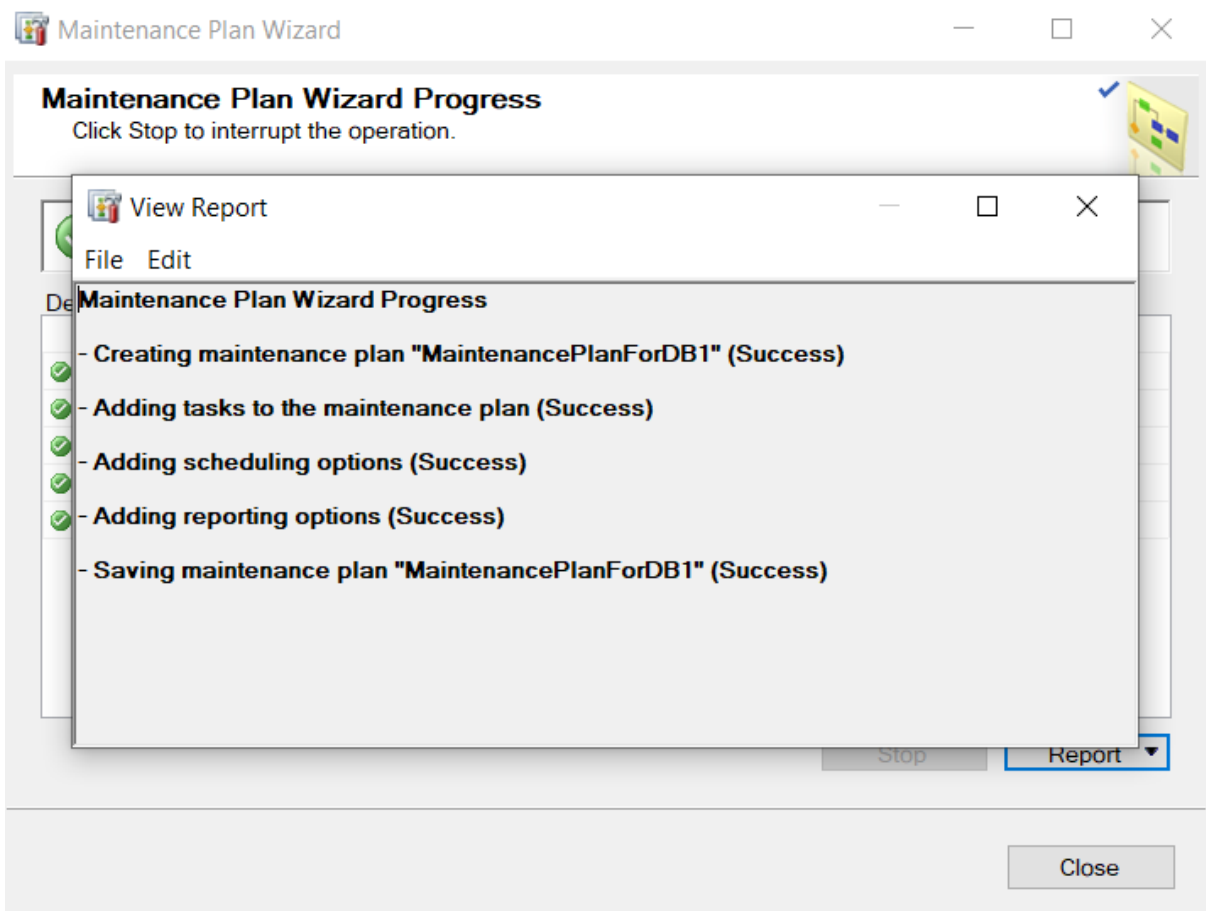
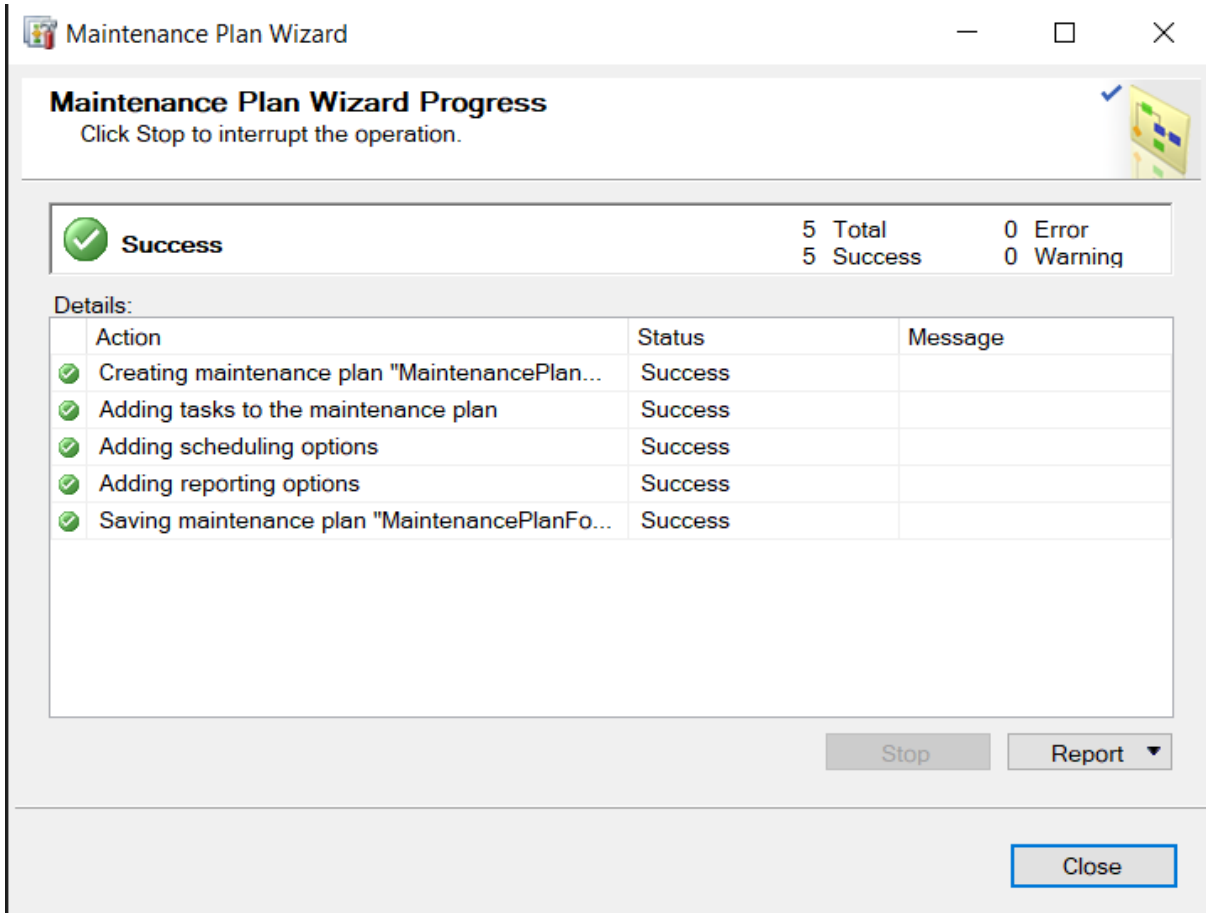
Help

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Next >

Finish >>


Cancel



Task 4:

 Maintenance Plan Wizard

Select Plan Properties
How do you want to schedule your maintenance tasks?



Name:

Description:

Run as:


☐ Separate schedules for each task
☒ Single schedule for the entire plan or no schedule

Schedule:

Maintenance Plan Wizard

Select Maintenance Task Order

In which order should these tasks be performed?



Select the order for the tasks to execute:


Rebuild Index

Update Statistics

Clean Up History

Move Up...

Move Down...

 The Rebuild task reorganizes data on the data and index pages by rebuilding indexes. This improves performance of index scans and seeks. This task also optimizes the distribution of data and free space on the index pages, allowing faster future growth.

Help

< Back

Next >


Finish

Cancel

Maintenance Plan Wizard

Define Rebuild Index Task

Configure the maintenance task.



Databases:

Specific databases

Object:

Tables and views

Selection:

Free space options

☐ Default free space per page

☒ Change free space per page to: 10 %

Advanced options

☒ Sort results in ☒ Pad

☐ Keep index ☐ MAXDOP 1

For index types that do not support online index rebuild:
☒ Do not rebuild indexes
☐ Rebuild indexes offline

☐ Low Priority Used

Abort After Wait: None
Max Duration: 0 mins

Index Stats Options

Help

< Back

Next >

Finish >>

Cancel

Maintenance Plan Wizard

Define Update Statistics Task

Configure the maintenance task.

Databases: Specific databases

Object: Tables and views

Selection:

Update:

☒ All existing statistics

☐ Column statistics only

☐ Index statistics only

Scan type:

☒ Full scan

☐ Sample by 50

Schedule:

Not scheduled (On Demand) Change...

Help < Back Next > Finish >> Cancel

Maintenance Plan Wizard

Define History Cleanup Task

Configure the maintenance task.

Select the historical data to delete:

☒ Backup and restore history

☒ SQL Server Agent job history

☒ Maintenance plan history

Remove historical data older than:

6 Week(s)

Schedule:

Not scheduled (On Demand) Change...


Help < Back Next > Finish >> Cancel

Maintenance Plan Wizard

Select Report Options


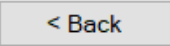
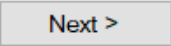
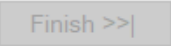
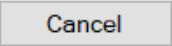
Select options for saving or distributing a report of the maintenance plan actions.

☒ Write a report to a text file

Folder location: 

☐ E-mail report

To:

 Help  < Back  Next >  Finish >>  Cancel


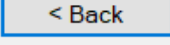
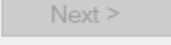
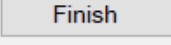
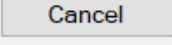
Maintenance Plan Wizard

Complete the Wizard

Verify the choices made in the wizard, and then click Finish.

Click Finish to perform the following actions:

- Create Maintenance Plan 'Reconstruire index'
 - Single schedule selected
 - SQL Server Agent job is scheduled to run : Occurs every first Monday of every 1 month(s) at 12:00:00 A
- Define Rebuild Index Task
 - Rebuild index on
 - Databases: lab1DB-2
 - Object: Tables and views
 - 10% of free space
- Define Update Statistics Task
 - Update Statistics on
 - Databases: lab1DB-2
 - Object: Tables and views
 - All existing statistics
 - Scan type: Full scan
- Define History Cleanup Task
 - Cleanup history on

 Help  < Back  Next >  Finish  Cancel

Scan type: Full scan

Define History Cleanup Task

Cleanup history on

History type: Backup, Job, Maintenance Plan

Age: Older than 6 Weeks


Selected reporting options

Report will be generated in folder: D:\MyDocs\SQL_reports

Maintenance Plan Wizard






Maintenance Plan Wizard Progress

Click Stop to interrupt the operation.

 **Success**

5 Total 0 Error
5 Success 0 Warning

Details:

Action	Status	Message
 Creating maintenance plan "Reconstruire index"	Success	
 Adding tasks to the maintenance plan	Success	
 Adding scheduling options	Success	
 Adding reporting options	Success	
 Saving maintenance plan "Reconstruire index"	Success	

Stop Report

Close

View Report

File Edit

Maintenance Plan Wizard Progress

- Creating maintenance plan "Reconstruire index" (Success)
- Adding tasks to the maintenance plan (Success)
- Adding scheduling options (Success)
- Adding reporting options (Success)
- Saving maintenance plan "Reconstruire index" (Success)

Stop Report

Conclusions:

After performing the laboratory work no. 2, I learned how to create a new data base in SQL Server 2017 and modify it's proprieties as well I found out how to create a mantaince plan for the data bases using Mantaince Wizard and Manualy. The practical exercises strengthened the basis of the theoretical knowledge accumulated in chapter 2