

**LAPORAN PRAKTIKUM
SISTEM MENEJEMEN BASIS DATA**

**JOBSHEET 10: AUTOMATIC SQL
SERVER MANAGEMENT**



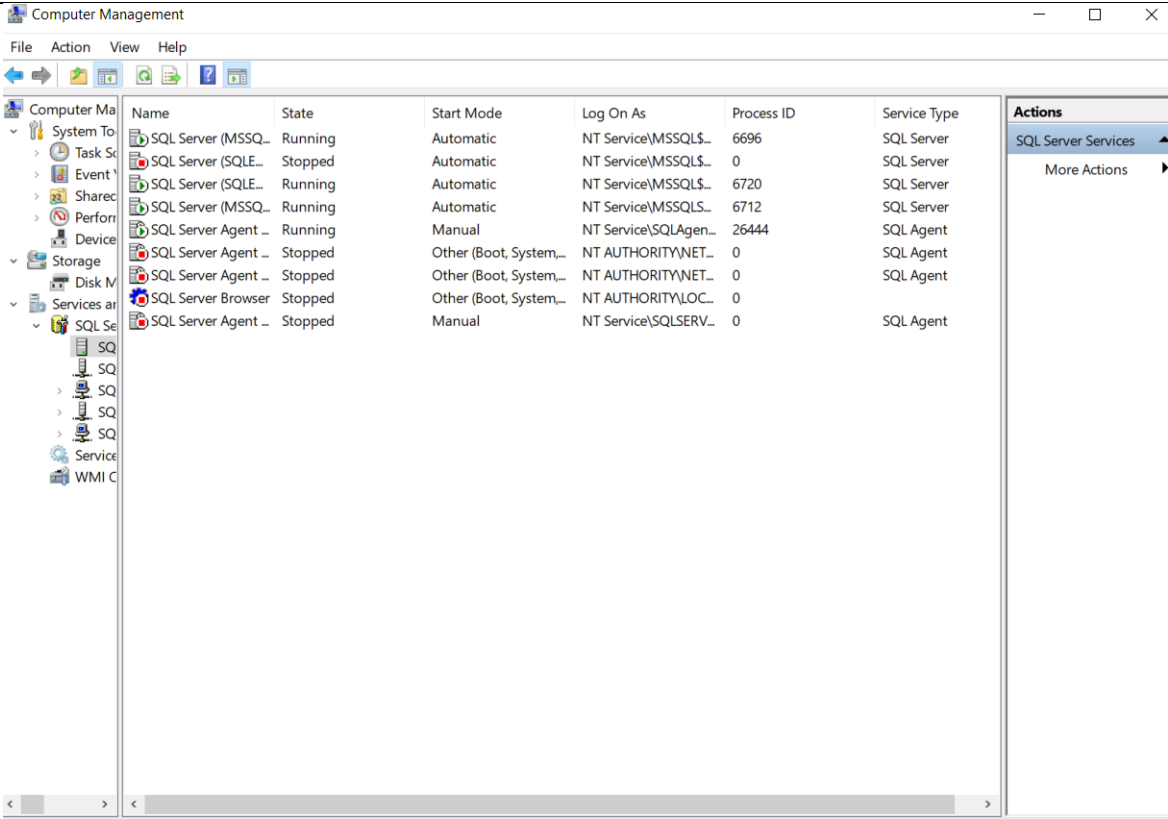
Oleh :

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NIM : 1841720105
KELAS : TI-2D
NO ABSEN : 10**

**PROGRAM STUDI TEKNIK INFORMATIKA
JURUSAN TEKNOLOGI INFORMASI
POLITEKNIK NEGERI MALANG
2020**

Tujuan Praktikum	
1.	Melakukan otomasi SQL Server Management.
2.	Menggunakan SQL Server Agent.
3.	Mengatur pekerjaan SQL Server Agent.

1.2 Otomasi SQL Server Management	
1.2.1 Langkah-langkah Percobaan	
1.	<div> <div> Buka SQL Server Management Studio dan melakukan Connect to Server sesuai Authentication masing-masing. Kemudian buka dan eksekusi file 00-Setup.sql. </div> <div> <pre> 00 - Setup.sql - LA...2T\ROG SERIES (53)) -- Job Properties @freq_subday_type=1, @freq_subday_interval=0, @freq_relative_interval=0, @freq_recurrence_factor=1, @active_start_date=20110124, @active_end_date=99991231, @active_start_time=60000, @active_end_time=235959, @schedule_uid=N'4ea63a5f-1279-4c27-a0cf-eb404eb89384' IF (@@ERROR <> 0 OR @ReturnCode <> 0) GOTO QuitWithRollback EXEC @ReturnCode = msdb.dbo.sp_add_jobserver @job_id = @jobId, @server_name = N'(local)' IF (@@ERROR <> 0 OR @ReturnCode <> 0) GOTO QuitWithRollback COMMIT TRANSACTION GOTO EndSave QuitWithRollback: IF (@@TRANCOUNT > 0) ROLLBACK TRANSACTION EndSave: GO EXEC msdb.dbo.sp_start_job 'Extract Long Page Loads'; GO USE master; GO </pre> </div> <div> <div>131 %</div> <div>Messages</div> <div>Commands completed successfully.</div> </div> </div>
2.	<div> <div> Buka SQL Server Management Studio dan melakukan Connect to Server sesuai Authentication masing-masing. Kemudian buka dan eksekusi file 00-Setup.sql. </div> </div>



Other users

Allow people who are not part of your family to sign in with their own accounts. This won't add them to your family.

Add someone else to this PC

April.Reagan

Local account

CorporateManagers

Local account

CreditManagement

Local account

Darren.Parker

Local account

HumanResources

Local account

ITSupport

Local account

Jeff.Hay

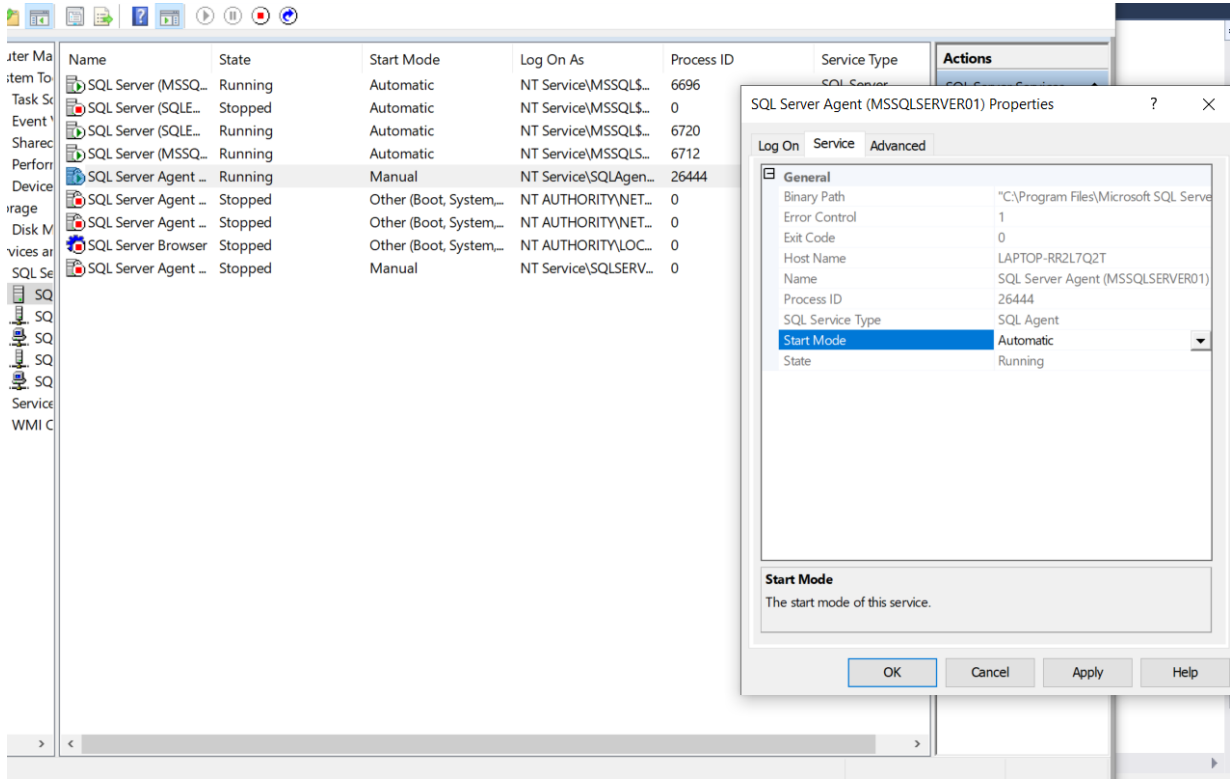
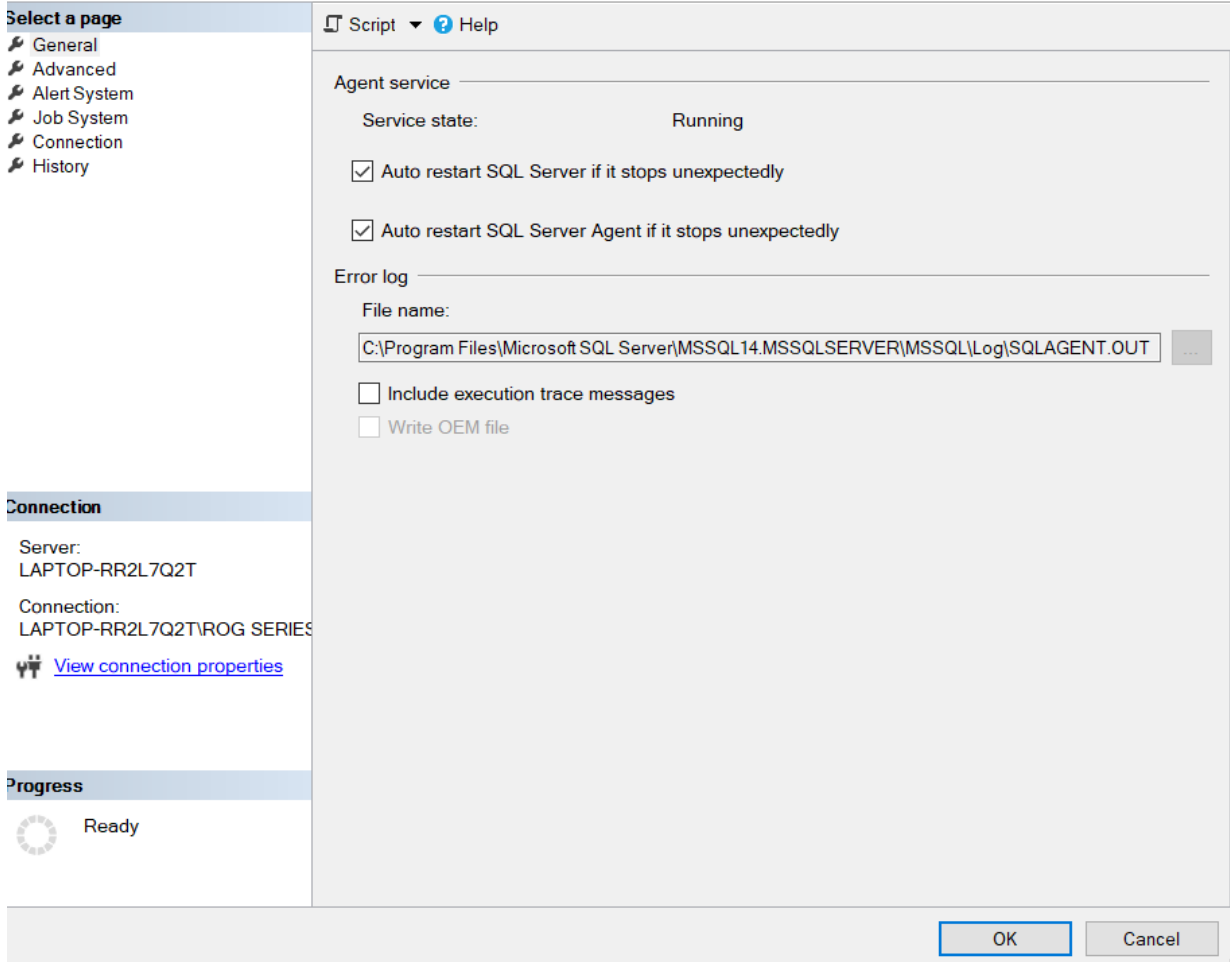
Local account



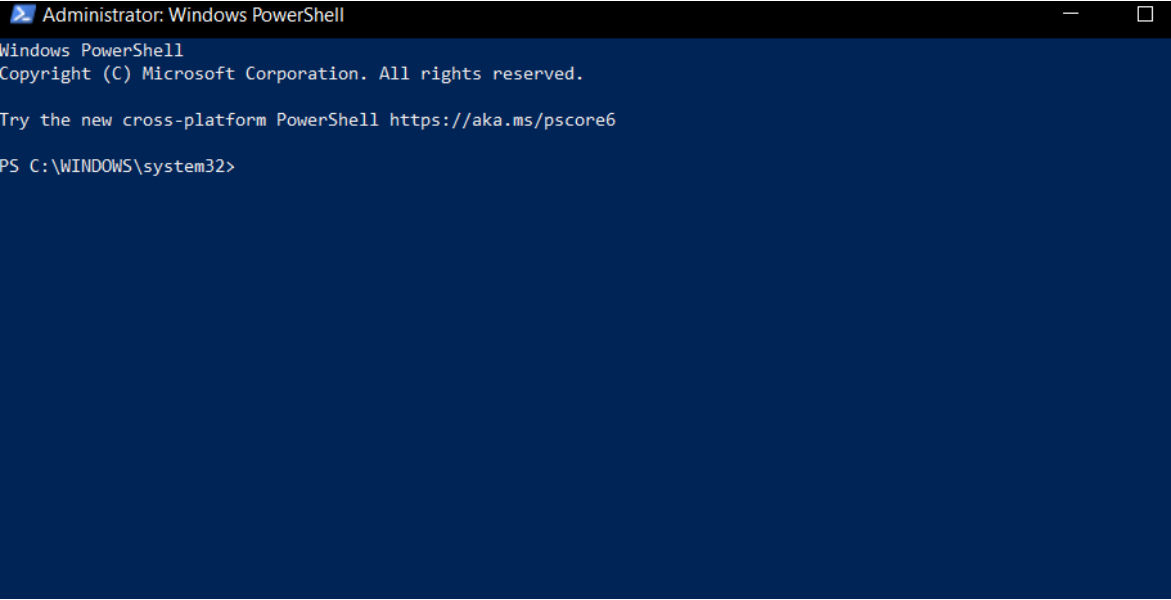
SalesPeople

Local account

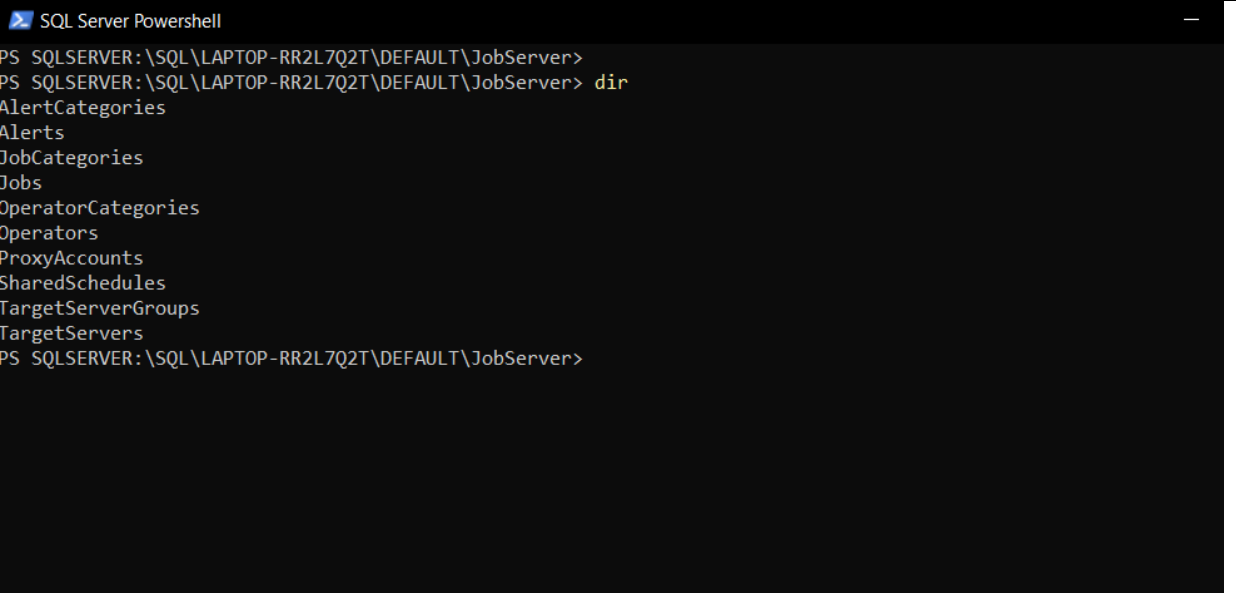
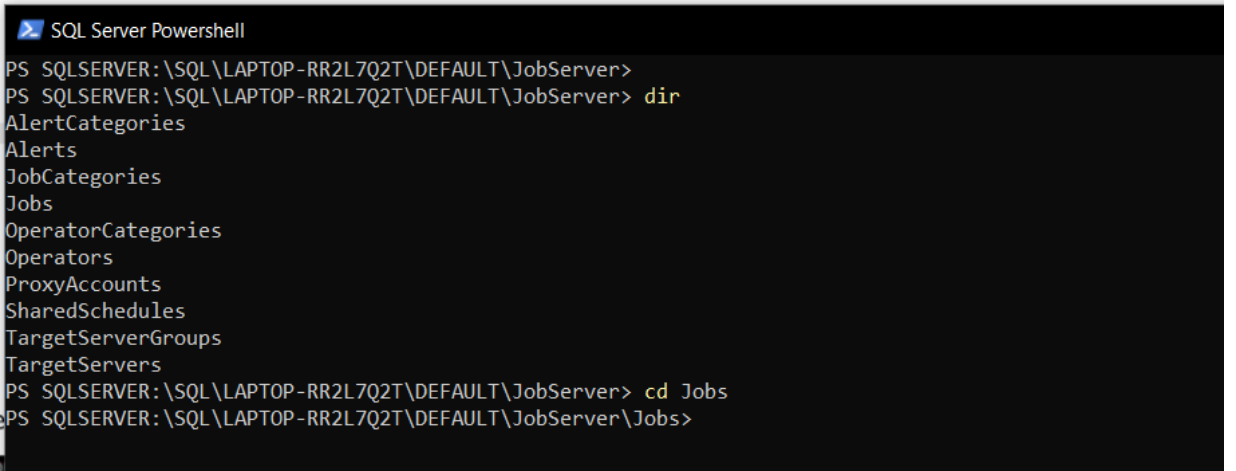
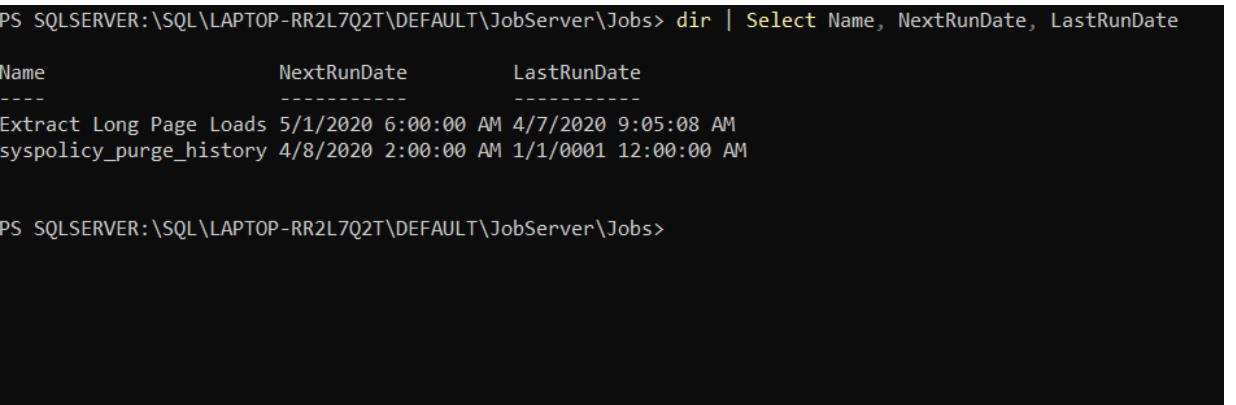
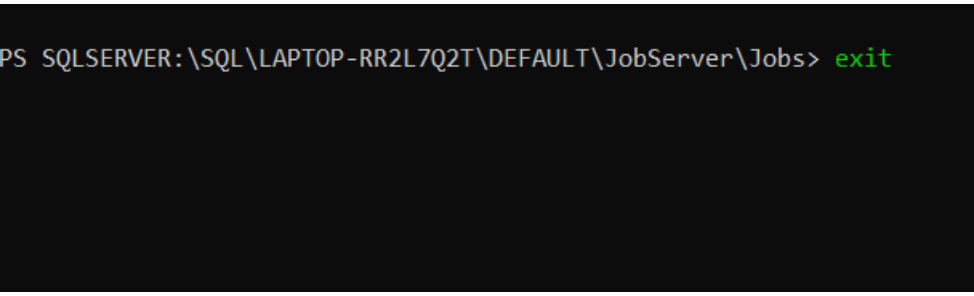
3

Klik kanan pada SQL Server Agent dan klik properties. Pilih tab Service, klik 'automatic in start mode', pilih automatic pada start

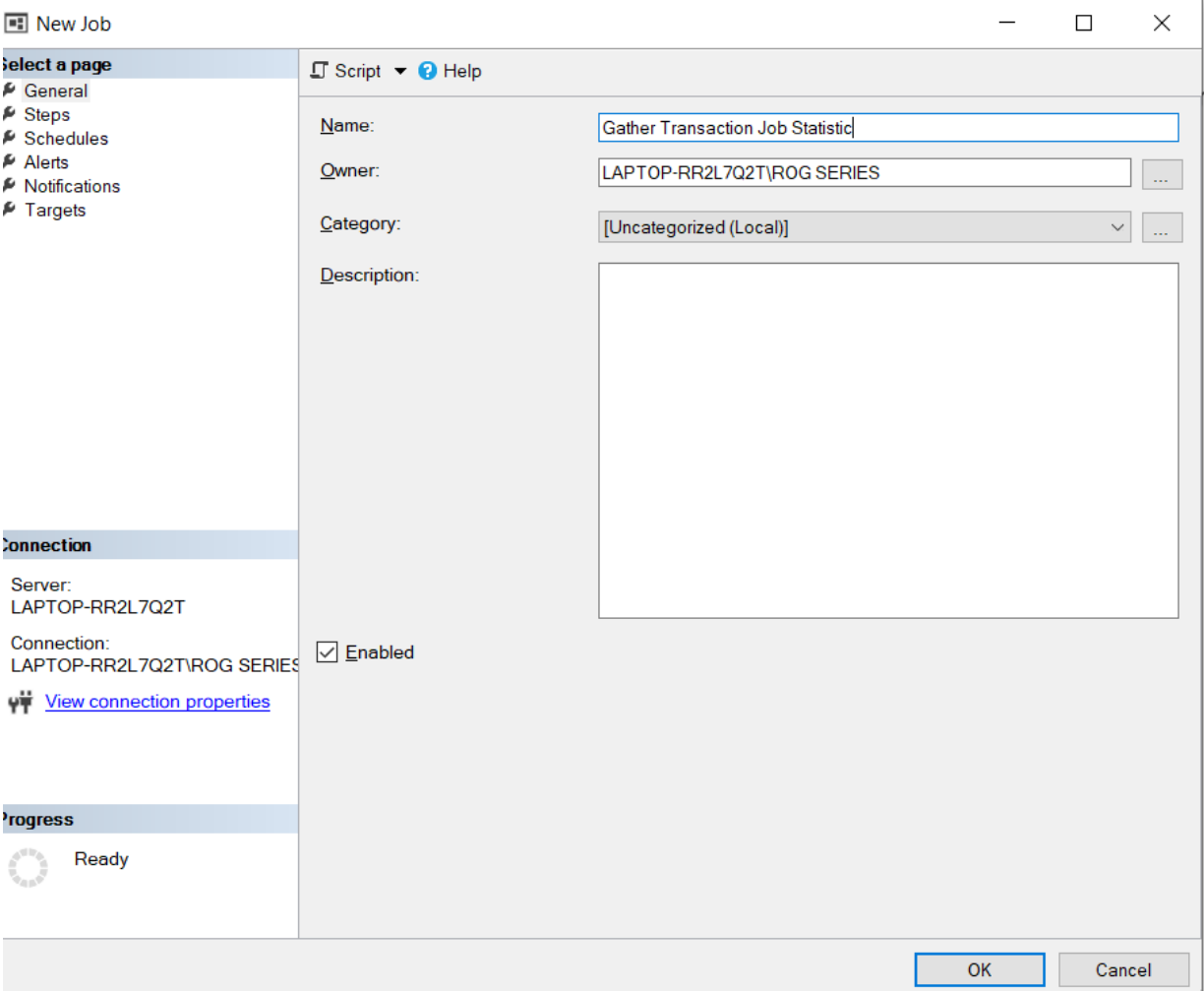
	<p>mode, dan klik ok. Kemudian tutup SQL Server Configuration Manager.</p>  <p>The screenshot shows the SQL Server Configuration Manager interface. On the left, the 'SQL Server Agent' service is highlighted. On the right, the 'SQL Server Agent (MSSQLSERVER01) Properties' dialog box is open, showing the 'General' tab. The 'Start Mode' is set to 'Automatic' and the 'State' is 'Running'. The 'Log On' tab is also visible, showing the service is configured to run as 'NT AUTHORITY\NETWORK SERVICE'.</p>
4	<p>Pada SSMS, klik kanan pada SQL Server Agent yang tertera pada object explorer, kemudian pastikan opsi auto restart dipilih semua.</p>  <p>The screenshot shows the SQL Server Enterprise Manager interface. On the left, the 'SQL Server Agent' object is selected. On the right, the context menu is open, showing the 'Auto restart' options checked. The 'Agent service' section shows the 'Service state' as 'Running'. The 'Error log' section shows the 'File name' as 'C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\MSSQL\Log\SQLAGENT.OUT'. The 'Include execution trace messages' and 'Write OEM file' options are unchecked.</p>
5	<p>Buka pada menu history, perhatikan dan catat setting log size, kemudian tutup window tersebut</p>

	<div><div><div>Select a page</div><div><div>General</div><div>Advanced</div><div>Alert System</div><div>Job System</div><div>Connection</div><div>History</div></div></div><div><div>Connection</div><div>Server: LAPTOP-RR2L7Q2T</div><div>Connection: LAPTOP-RR2L7Q2T\ROG SERIES</div><div> View connection properties</div></div><div><div>Progress</div><div> Ready</div></div></div> <div><div>Script ? Help</div><div><div>Current job history log size (in rows):</div><div><input checked="" type="checkbox"/> Limit size of job history log</div><div>Maximum job history log size (in rows): 1000</div><div>Maximum job history rows per job: 100</div><div><input type="checkbox"/> Remove agent history:</div><div>Older than: 4 Week(s)</div></div><div><div>OK</div><div>Cancel</div></div></div>
6	<div><div>Buka Powershell dari SQL Server Agent. Klik kanan pada SQL Server Agent dan pilih start powershell.</div><div></div><div><div>Kemudian masukkan perintah berikut dan eksekusi. Ketika selesai, tutup windowpowershell dan buka kembalipowershell dari SQL Server Agent</div></div></div>

	<div><div>Windows PowerShell Copyright (C) Microsoft Corporation. All rights reserved.</div><div>Installing package 'SqlServer' Downloaded 0.00 MB out of 23.65 MB. []</div><div>At line:1 char:32 + Install-Module -Name SqlServer -AllowCowbar + ~~~~~ + CategoryInfo : InvalidArgument: (:) [Install-Module], ParameterBindingException + FullyQualifiedErrorId : NamedParameterNotFound,Install-Module</div><div>PS C:\WINDOWS\system32> Install-Module -Name SqlServer -AllowCowber Install-Module : A parameter cannot be found that matches parameter name 'AllowCowber'. At line:1 char:32 + Install-Module -Name SqlServer -AllowCowber + ~~~~~ + CategoryInfo : InvalidArgument: (:) [Install-Module], ParameterBindingException + FullyQualifiedErrorId : NamedParameterNotFound,Install-Module</div><div>PS C:\WINDOWS\system32> Install-Module -Name SqlServer -AllowCober Install-Module : A parameter cannot be found that matches parameter name 'AllowCober'. At line:1 char:32 + Install-Module -Name SqlServer -AllowCober + ~~~~~ + CategoryInfo : InvalidArgument: (:) [Install-Module], ParameterBindingException + FullyQualifiedErrorId : NamedParameterNotFound,Install-Module</div><div>PS C:\WINDOWS\system32> Install-Module -Name SqlServer -AllowClobber</div><div>NuGet provider is required to continue PowerShellGet requires NuGet provider version '2.8.5.201' or newer to interact with NuGet-based repositories. The NuGet provider must be available in 'C:\Program Files\PackageManagement\ProviderAssemblies' or 'C:\Users\ROG SERIES\AppData\Local\PackageManagement\ProviderAssemblies'. You can also install the NuGet provider by running 'Install-PackageProvider -Name NuGet -MinimumVersion 2.8.5.201 -Force'. Do you want PowerShellGet to install and import the NuGet provider now? [Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): Y</div><div>Untrusted repository You are installing the modules from an untrusted repository. If you trust this repository, change its InstallationPolicy value by running the Set-PSRepository cmdlet. Are you sure you want to install the modules from 'PSGallery'? [Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "N"): Y</div></div>
7	<div>Gunakan perintah 'dir' untuk menampilkan semua objek.</div> <div><div>SQL Server Powershell</div><div>PS SQLSERVER:\SQL\LAPTOP-RR2L7Q2T\DEFAULT\JobServer> PS SQLSERVER:\SQL\LAPTOP-RR2L7Q2T\DEFAULT\JobServer></div></div>

	
8	<p>Eksekusi perintah 'cd jobs', kemudian eksekusi 'dir', maka list dari jobs akan tampil</p> 
9	<p>Eksekusi perintah 'dir Select Name, NextRunDate, LastRunDate'</p> 
10	<p>Tutup powershell dengan mengeksekusi perintah 'exit'</p> 

1.2.2 Soal	
1.	Apa fungsi auto restart SQL Server Agent? Untuk restart SQL Server Agent dan guna refresh
2	Data apa yang ditampilkan pada langkah praktikum nomor 9? Extract Long Page Loads nextrun 5/1/2020 lastrundate 4/7/2020 Syspolicy_purge_history nextrun 4/8/2020 lastrundate 1/1/0001

1.3 Menggunakan SQL Server Agent	
1.3.1 Langkah-langkah Percobaan	
1.	<p>Buat job baru dengan nama “GatherTransaction Log Statistics”. Buka SQL Server Agent, klik kanan Jobs, kemudian klik kanan pilih new job. Masukkan nama job sesuai perintah.</p> 
2	<p>Eksekusi Procedure GatherLogSpace. Pilih menu Steps, kemudian New, masukkan ‘Execute dbo.GatherLogSpace’. Pada dropdown database, pilih AdminDB. Pada textbox Command, ketikkan ‘EXEC dbo.GatherLogSpace’, kemudian klik Parse dan OK. Setelah itu buka menu Advanced, perhatikan opsi yang tertera, kemudian klik OK.</p>

New Job Step

Select a page

- General
- Advanced

Script ? Help

Step name:
Execute dbo.GatherLogSpace

Type:
Transact-SQL script (T-SQL)

Run as:

Database:
AdminDB

Command:
EXEC dbo.GatherLogSpace

Open...
Select All
Copy
Paste
Parse

Connection

Server:
LAPTOP-RR2L7Q2T

Connection:
LAPTOP-RR2L7Q2T\ROG SERIES

[View connection properties](#)

Progress

Ready

Next Previous

OK Cancel

3	Jadwalkan pekerjaan SQL Server Agent tiap 10 menit. Pilih Menu Schedules, klik Pick. Pada windowpick schedule, perhatikan jadwal yang tampil, klik cancel. Klik New, isi nama schedule dengan 'Every 10 Minutes', pilih opsi 'Daily' pada dropdown, pilih opsi Occurs Every, ubah nilainya menjadi 10 Menit, kemudian klik OK.
---	--

New Job Schedule

— □ ×

Name:

Every 10 Menit

Jobs in Schedule

Schedule type:

Recurring ▾

☒ Enabled

One-time occurrence

Date: 4/ 7/2020 📅 Time: 10:08:20 AM ⬆⬇⬆

Frequency

Occurs: Daily ▾

Recurs every: 1 ⬆⬇⬆ day(s)

Daily frequency

☐ Occurs once at: 12:00:00 AM ⬆⬇⬆

☒ Occurs every: 10 ⬆⬇⬆ hour(s) ▾

Starting at: 12:00:00 AM ⬆⬇⬆

Ending at: 11:59:59 PM ⬆⬇⬆

Duration

Start date: 4/ 7/2020 📅

☐ End date: 4/ 7/2020 📅

☒ No end date:

Summary

Description:

Occurs every day every 10 hour(s) between 12:00:00 AM and 11:59:59 PM. Schedule will be used starting on 4/7/2020.


OK

Cancel



Help

4	Klik OK untuk membuat job baru
---	--------------------------------

5	Eksekusi job secara manual. Pada Object Explorer, expand Jobs, klik kanan Gather Transsaction Log Statistics, dan klik Start Job at Step.
---	---

	Success	2 Total	0 Error
		2 Success	0 Warning

Details:

Action	Status	Message
 Start Job 'Gather Transaction Log...	Success	
 Execute job 'Gather Transaction ...	Success	

[Close](#)

6	Review output dari job yang dihasilkan, yaitu akan menampilkan statistik log transaksi pada tabel dbo.LogSpace. Tampilkan data dari tabel tersebut!
---	---

SQLQuery1.sql - LA...T\ROG SERIES (51))* 00 - Setup.sql - LA...2T\ROG SERIES (53))

use AdminDB

EXEC dbo.GatherLogSpace

131 %

Messages

DBCC execution completed. If DBCC printed error messages, contact your system administrator.

(22 rows affected)

SQLQuery1.sql - LA...T\ROG SERIES (51))* 00 - Setup.sql - LA...2T\ROG SERIES (53))

use AdminDB

EXEC dbo.GatherLogSpace

select * from dbo.LogSpace

131 %

Results

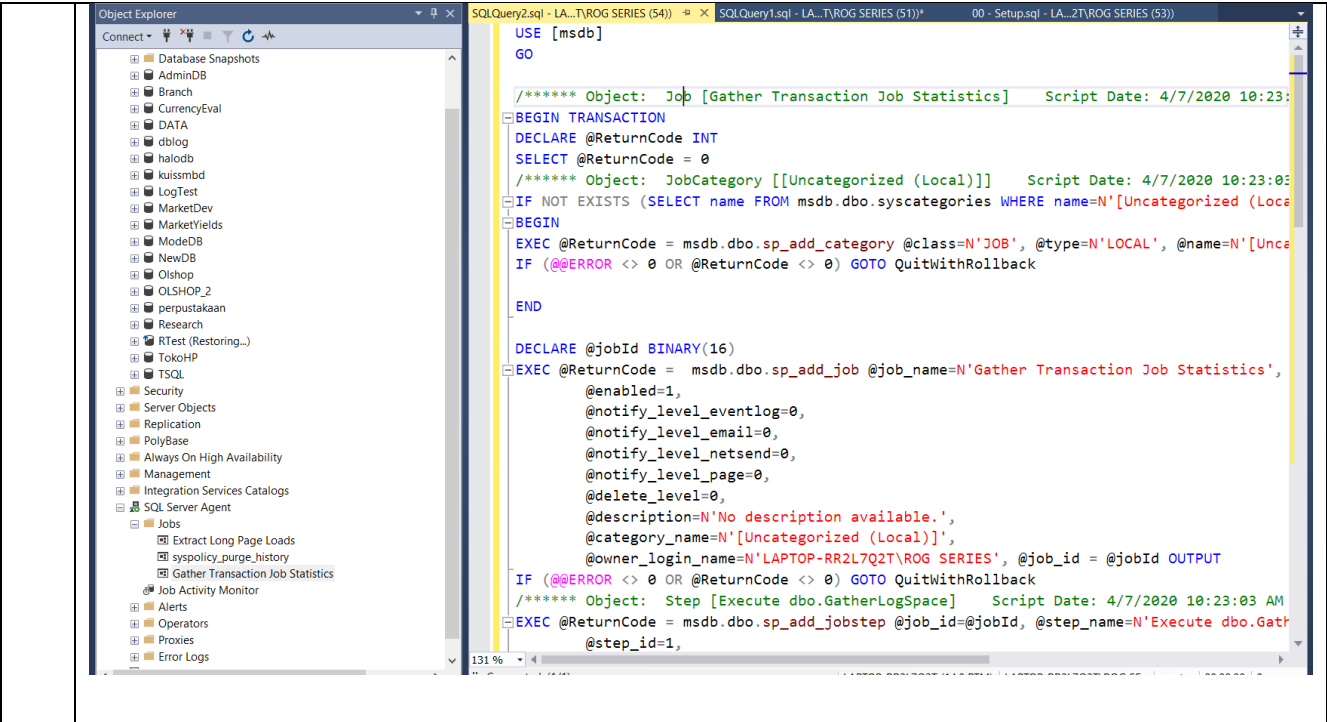
Messages

	LogSpaceID	SnapshotDatetime	DatabaseName	LogSizeMB	LogUsedPercent	Status
1	1	2020-04-07 10:16:48.267	master	1.9921875	33.3333320617676	0
2	2	2020-04-07 10:16:48.267	tempdb	7.9921875	18.4750728607178	0
3	3	2020-04-07 10:16:48.267	model	7.9921875	27.2238521575928	0
4	4	2020-04-07 10:16:48.267	msdb	0.7421875	82.6315765380859	0
5	5	2020-04-07 10:16:48.267	TSOL	71.9921875	6.57080841064453	0
6	6	2020-04-07 10:16:48.267	Olshop	7.9921875	21.9452590942383	0
7	7	2020-04-07 10:16:48.267	OLSHOP_2	7.9921875	13.3919839859009	0
8	8	2020-04-07 10:16:48.267	perpustakaan	7.9921875	22.6783962249756	0
9	9	2020-04-07 10:16:48.267	NewDB	7.9921875	14.7116327285767	0
10	10	2020-04-07 10:16:48.267	Branch	7.9921875	14.7116327285767	0
11	11	2020-04-07 10:16:48.267	CurrencyEval	1.9921875	31.5686283111572	0
12	12	2020-04-07 10:16:48.267	dblog	21.5546875	8.30010890960693	0
13	13	2020-04-07 10:16:48.267	Research	0.9921875	50	0
14	14	2020-04-07 10:16:48.267	LogTest	4.9921875	21.9092330932617	0
15	15	2020-04-07 10:16:48.267	kuissmbd	71.9921875	7.93814420700073	0
16	16	2020-04-07 10:16:48.267	MarketYields	42.1796875	6.11224317550659	0
17	17	2020-04-07 10:16:48.267	DATA	7.9921875	12.9521017074585	0
18	18	2020-04-07 10:16:48.267	MarketDev	1102.1171875	1.34542179107666	0

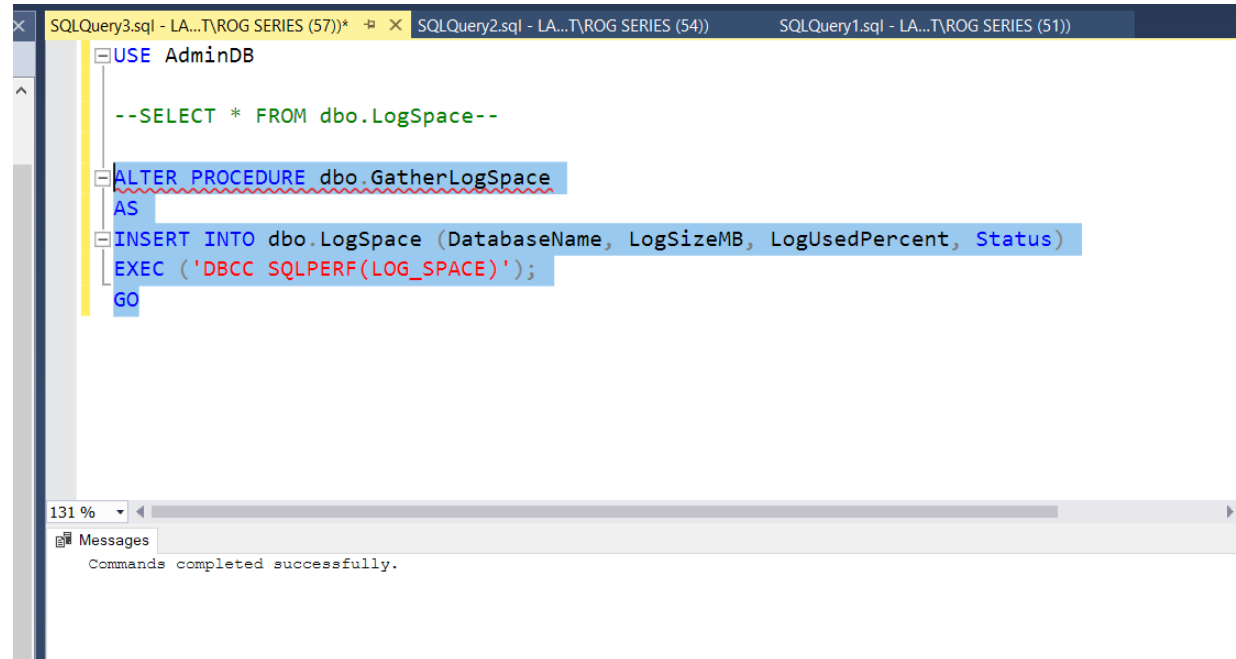
Query executed successfully.

LAPTOP-RR2L7Q2T (14.0 RTM) | LAPTOP-RR2L7Q2T\ROG SE... | AdminDB | 00:00:00 | 22 rows

7	Lakukan Job Scripting pada panel query. Klik kanan pada Gather Transaction Log Statistics, klik Script Job as, klik CREATE To New Query Editor Window. Perhatikan pada Script yang di-generate.
---	---



1.3.2 Soal	
1.	<p>Setelah melakukan percobaan, apa yang anda pahami tentang Job pada SQL Server Agent?</p> <p>SQL Server Agent menggunakan SQL Server untuk menyimpan informasi Job yang dibuat. Sebuah Job bisa mengandung satu atau lebih Step. Sebagai contoh, misalnya Anda ingin melakukan backup database dalam kurun waktu sebulan sekali. Anda dapat membuat sebuah Job untuk mengotomatisasi tugas tersebut. Misalnya jadwal dari backup database tersebut adalah setiap tanggal satu. Dan jika terjadi kesalahan dapat memberi tahu Anda dengan memberikan record.</p>
2	<p>Apa fungsi scheduler? Apa yang terjadi jika sebuah Job tidak dibuat schedule-nya?</p> <p>Biasanya ini perlu dilakukan jika kita punya semacam reporting system yang datanya tidak ditampilkan realtime karena pertimbangan performance ataupun keperluan-keperluan lain.</p> <p>Tidak memiliki reporting system apabila tidak buat schedule</p>

1.4 Mengatur Job pada SQL Server Agent	
1.4.1 Langkah-langkah Percobaan	
1.	<p>Ubah stored procedure dbo.GatherLogSpace dengan mengeksekusi script dibawah.</p> 

2

Eksekusi kembali job Gather Transaction Log Statistics seperti pada praktikum sebelumnya. Percobaan ini akan menghasilkan error.

Log File Viewer - LAPTOP-RR2L7Q2T

Select logs

☒ Job History

☐ Extract Long Page Loads

☒ Gather Transaction Job Statistics

☐ syspolicy_purge_history

☐ SQL Server Agent

☐ Database Mail

Status

Last Refresh:
4/7/2020 10:33:52 AM

Filter: None

View filter settings

Progress

Done (3 records).

Log file summary: No filter applied

Date	Step ID	Server	Job Name	S
4/7/2020 10:13:54 ...		LAPTOP-RR2L7Q2T	Gather Transaction Job Statistics	
4/7/2020 10:11:43 ...		LAPTOP-RR2L7Q2T	Gather Transaction Job Statistics	
4/7/2020 10:11:14 ...		LAPTOP-RR2L7Q2T	Gather Transaction Job Statistics	

Selected row details:

Date

4/7/2020 10:13:54 AM

Log

Job History (Gather Transaction Job Statistics)

Step ID

Server

LAPTOP-RR2L7Q2T

Job Name

Gather Transaction Job Statistics

3

Buka job history pada job tersebut. Perhatikan history-nya, kemudian tampilkan detail masing-masing Log error yang terjadi.

Log File Viewer - LAPTOP-RR2L7Q2T

Select logs

☒ Job History

☐ Extract Long Page Loads

☒ Gather Transaction Job Statistics

☐ syspolicy_purge_history

☐ SQL Server Agent

☐ Database Mail

Status

Last Refresh:
4/7/2020 10:54:04 AM

Filter: None

View filter settings

Progress

Done (3 records).

Log file summary: No filter applied

Date	Step ID	Server	Job Name	St
4/7/2020 10:13:54 ...		LAPTOP-RR2L7Q2T	Gather Transaction Job Statistics	
4/7/2020 10:13:5...	1	LAPTOP-RR2L7Q2T	Gather Transaction Job Statistics	E
4/7/2020 10:11:43 ...		LAPTOP-RR2L7Q2T	Gather Transaction Job Statistics	
4/7/2020 10:11:4...	1	LAPTOP-RR2L7Q2T	Gather Transaction Job Statistics	E
4/7/2020 10:11:14 ...		LAPTOP-RR2L7Q2T	Gather Transaction Job Statistics	
4/7/2020 10:11:1...	1	LAPTOP-RR2L7Q2T	Gather Transaction Job Statistics	E

Selected row details:

Date

4/7/2020 10:11:14 AM

Log

Job History (Gather Transaction Job Statistics)

Step ID

Server

LAPTOP-RR2L7Q2T

Job Name

Gather Transaction Job Statistics

4

Eksekusi perintah T-SQL dibawah ini, tampilkan hasilnya!

ResultsMessages

	name	run_date	run_time	message	run_status	run_duration
1	Gather Transaction Log Statistics	20200407	100850	The job succeeded. The Job was invoked by User ...	1	1
2	Gather Transaction Log Statistics	20200407	101000	The job succeeded. The Job was invoked by Sched...	1	0
3	Gather Transaction Log Statistics	20200407	102000	The job succeeded. The Job was invoked by Sched...	1	1
4	Gather Transaction Log Statistics	20200407	103000	The job succeeded. The Job was invoked by Sched...	1	3

5

Eksekusi perintah T-SQL dibawah ini dan tampilkan hasilnya!

SQLQuery3.sql - LA...T\ROG SERIES (57))SQLQuery2.sql - LA...T\ROG SERIES (54))SQLQuery1.sql - LA...T\ROG SERIES (51))00 - Setup.sql - LA...2T\ROG SERIES (53))

```

+stuff(stuff(substring(cast(100000 + sjh.run_time AS nchar(7)),
2,6),
5,0,':'),
3,0,':'),
120)
END) AS RunDate,
sjh.message,
sjh.run_status,
sjh.run_duration
FROM msdb.dbo.sysjobhistory AS sjh
INNER JOIN msdb.dbo.sysjobs AS sj
ON sjh.job_id = sj.job_id
WHERE sjh.step_id = 0
)
SELECT * FROM jobhistory j WHERE j.RunDate > dateadd(d,-1,sysdatetime());
GO

SELECT sj.name, sjh.run_date, sjh.run_time, sjh.message,
sjh.run_status, sjh.run_duration
FROM msdb.dbo.sysjobhistory AS sjh
INNER JOIN msdb.dbo.sysjobs AS sj

```

131 %ResultsMessages

(4 rows affected)
Msg 242, Level 16, State 3, Line 19
The conversion of a nvarchar data type to a datetime data type resulted in an out-of-range value.

6

Eksekusi perintah T-SQL dibawah ini dan tampilkan hasilnya!

SQLQuery3.sql - LA...T\ROG SERIES (57))SQLQuery2.sql - LA...T\ROG SERIES (54))SQLQuery1.sql - LA...T\ROG SERIES (51))00 - Setup.sql - LA...

```

INNER JOIN msdb.dbo.sysjobs AS sj
ON sjh.job_id = sj.job_id
WHERE sjh.step_id = 0
)
SELECT * FROM jobhistory j WHERE j.RunDate > dateadd(d,-1,sysdatetime());
GO

SELECT sj.name, sjh.run_date, sjh.run_time, sjh.message,
sjh.run_status, sjh.run_duration
FROM msdb.dbo.sysjobhistory AS sjh
INNER JOIN msdb.dbo.sysjobs AS sj
ON sjh.job_id = sj.job_id
WHERE sjh.step_id > 0
AND sjh.run_status <> 1
ORDER BY sjh.run_date DESC;
go

```

131 %ResultsMessages

	name	run_date	run_time	message	run_status	run_duration
1	Gather Transaction Job Statistics	20200407	101115	Executed as user: NT SERVICE\SQLSERVERAGENT. Inc...	0	0
2	Gather Transaction Job Statistics	20200407	101143	Executed as user: NT SERVICE\SQLSERVERAGENT. Inc...	0	0
3	Gather Transaction Job Statistics	20200407	101354	Executed as user: NT SERVICE\SQLSERVERAGENT. Inc...	0	0

1.4.2 Soal				
1.	Pada langkah nomor 4,	data apa yang dihasilkan?	Berikan penjelasan dan	
	analisis tentang hasil eksekusi langkah tersebut!			
	Gather Transaction Job Statistic message The job succeeded			
2	Pada langkah nomor 5,	data apa yang dihasilkan?	Berikan penjelasan dan	
	analisis tentang hasil eksekusi langkah tersebut!			
	Nvarchar data type resulted			
3	Pada langkah nomor 6,	data apa yang dihasilkan?	Berikan penjelasan dan	
	analisis tentang hasil eksekusi langkah tersebut!			
	Gather Transaction Job Statistic message as user succeeded			

-- Terimakasih --