Semester A181 Lab Test 1 - Installation and Managing Database (Solution)

Your SQL Server Instance name (Example: SE05\Farah)

Question 1: There are **TWO** (2) ways to login into SQL Server Engine. What are these **TWO** (2) ways, and perform tasks to login into the SQL Server Engine using both ways (write your answer and print the screen. Only one screen required for each task).

(2 Marks)

Two ways

Window Authentic	Connect to Server	×
Microsoft S	SQL Server 2014	
Server type:	Database Engine	¥
Server name:	N-44	~
Authentication:	SQL Server Authentication	~
Login:	sa	~
Password:		
	Remember password	

2. Mixed Mode Authentication

9	Connect to Server			
Microsoft SQL Server 2014				
Server type:	Database Engine	~		
Server name:	N-44	~		
Authentication:	Windows Authentication	~		
User name:	N-44\end user1	¥		

Question 2: Show your SQL Server instance **DATA** directory in **TWO (2)** ways? (Only one screen required for each task).

(2 Marks)

Two ways:

1. Using SQL Server -> Properties in SQL Server -> Database Setting	1.	Using SOL Server	-> Properties in S	SOL Server ->	Database Setting
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Database default locations		
Data:	C:\Program Files\Microsoft SQL Server\MSSQL12.MSSQLSERVER\MSSQL\DATA\	
Log:	C:\Program Files\Microsoft SQL Server\MSSQL12.MSSQLSERVER\MSSQL\DATA\	
Backup:	C:\Program Files\Microsoft SQL Server\MSSQL12.MSSQLSERVER\MSSQL\Backup	

2. Using Directory explorer in Window systems

퉪 ≪ Local Disk (C:) → Program Files → Microsoft SQL Server → MSSQL12.MSSQLSERVER → MSSQL → DATA						
	Name	Date modified	Туре	Siz		
its	📴 AdventureWorksLT2008_Data	14-04-2018 12:16 PM	SQL Server Database Primary Data File			
chments	📴 AdventureWorksLT2008_Log	14-04-2018 12:16 PM	SQL Server Database Transaction Log File			
	📴 Books	14-04-2018 12:16 PM	SQL Server Database Primary Data File			
р	📴 Books_log	14-04-2018 12:16 PM	SQL Server Database Transaction Log File			

Question 3:

3.1 Calculate the size of database VEHICLE_LICENSE for supporting 10000 rows based on the following schemas:

(2 Marks)

1. Space of single row for Table DRIVER

DriverID (PK)	Integer	=4
No IC	Char(12)	= 12
Name	Varchar(100)	= 100
DOB	Date	= 8
Address	Varchar(100)	= 100
City	Varchar(50)	= 50
Postcode	Char(6)	= 6
Telephone	Char(20)	= 20
Overhead		= 2
Total Size		= <u>302 Bytes / row</u>

2. Rows per page:

= 8060 / 302

= <u>27 rows/page</u>

3. Pages needed for 10000 rows:

= 10000 / 27

= <u>370 pages</u>

4. Extents to hold pages

= 370 / 8

= <u>46 extents</u>

5. Estimated size for table DRIVER

= 46/16

= <u>3 MB</u>

1. Space of single row Table LICENSE

LicenseNumber (PK) License Class	0	= 4 = 5
	Char(5)	
License Expiry Date	Date	= 8
Restriction	Varchar(100)	= 100
Education	Varchar(50)	= 50
Cost	Money	= 8
DriverID (FK)	Integer	= 4
Overhead		= 2
Total Size		= <u>181 Bytes / row</u>

2. Rows per page:

= 8060 / 181

= <u>45 rows/page</u>

3. Pages needed for 10000 rows:

- = 10000 / 45
- = <u>222 pages</u>

4. Extents to hold pages

- = 222 / 8
- = <u>28 extents</u>

5. Estimated size for table DRIVER

= 28 /16 = <u>2 MB</u>

Total estimated spaces = 3+2 = 5 MB

3.2 Based on question 3.1, create a new database with the Log size is 20 percent from database size, recovery model is "Full-Recovery", and only can be accessed by **SINGLE USER**.

(2 Marks)

Log size = 20% x 5 MB= <u>1 MB</u>

1. Click Database -> New Database in SQL Server (Size 5 MB, Log Size 1 MB, Full-Recovery)

8		New	Database			×
Select a page	🖾 Script 🝷 🚺) Help				
Poptions Filegroups	Database name:		StaffDB			
	Owner:		<default></default>			
	Database files: Logical Name	File Type	Filegroup	Initial Size (MB)	Autogrowth / Maxsize	-
	StaffDB	ROWS	PRIMARY	5	By 1 MB, Unlimited	
	StaffDB_log	LOG	Not Applicable	1	By 10 percent, Unlimited	
				\sim		
			20	% out of 5 I	MR.	0

2. Using SQL Server -> Properties in SQL Server -> Set State Restrict Access to "SINGLE-USER"

۵	State	
	Database Read-Only	False
	Database State	NORMAL
	Encryption Enabled	False
	Restrict Access	SINGLE_USER

Question 4:

What is T-SQL command to produce information about a database object (any object listed in the sys.sysobjects)? Give example by produce information about the VEHICLE_LICENSE database.

(2 Marks)

- 1. exec sp_helpdb (RESULTS SCREEN)
- 2. exec sp_helpdb StudentDB (RESULTS SCREEN)

Question 5: Show how to view the SQL Server activity log?

(2 Marks)

There are three (3) ways to view:

- ▼ ₽ × Object Explorer Log File Viewer - N-44 Connect 🕶 🛃 📑 👕 📝 🛃 Select logs 📴 Load Log 👌 Export 😰 Refresh 🍸 Filter ... 🔍 Searc N-44 (SQL Server 12.0.2269 - sa) 🖃 🗹 S Log file summary: No filter applied Current - 14-04-2018 2:07:00 PM 🗄 🚞 Databases Archive #1 - 14-04-2018 12:16:00 PI Date 🛡 Source Message 🗄 🚞 Security spid54 Setting database Archive #2 - 14-04-2018 6:25:00 AM 14-04-2018 4:10:10 PM 🗉 🚞 Server Objects Archive #3 - 12-04-2018 4:40:00 PM 14-04-2018 4:10:10 PM spid54 Setting database 🕀 🚞 Replication Archive #4 - 12-04-2018 8:12:00 AM spid54 14-04-2018 4:10:10 PM Setting database 🗄 🚞 AlwaysOn High Availability Archive #5 - 11-04-2018 2:40:00 PM 14-04-2018 4:10:10 PM spid54 Setting database 🖃 🚞 Management Archive #6 - 10-04-2018 10:46:00 Al 14-04-2018 4:10:10 PM spid54 Setting database 🗉 🔮 Policy Management SQL Server Agent 14-04-2018 4:10:10 PM spid54 Setting database 표 🛃 Data Collection 표 🗌 Database Mail 🗉 🔄 Resource Governor Windows NT 14-04-2018 4:10:10 PM spid54 Setting database 표 📝 Extended Events 14-04-2018 4:10:10 PM spid54 Setting database 😹 Managed Backup 14-04-2018 4:10:10 PM Setting database spid54 🗄 🚞 Maintenance Plans 14-04-2018 4:10:10 PM Setting database spid54 😑 🚞 SQL Server Logs 14-04-2018 4:10:10 PM spid54 Setting database 🔢 Current - 14-04-2018 2:07:00 PM 14-04-2018 4:10:10 PM Setting database spid54 આ Archive #1 - 14-04-2018 12:16:00 PM 14-04-2018 4:10:10 PM spid54 Setting database Archive #2 - 14-04-2018 6:25:00 AM 14-04-2018 4:10:10 PM spid54 Setting database
- 1. Click SQL Server Engine -> Management -> SQL Server Logs

2. Using T-SQL : EXEC sp_readerrorlog

	III Results Messages				
	LogDate	ProcessInfo	Text		
1	2018-04-14 14:06:32.210	Server	Microsoft SQL Server 2014 - 12.0.2269.0 (X64) Jun 1		
2	2018-04-14 14:06:32.210	Server	UTC adjustment: 8:00		
3	2018-04-14 14:06:32.210	Server	(c) Microsoft Corporation.		
4	2018-04-14 14:06:32.210	Server	All rights reserved.		
5	2018-04-14 14:06:32.210	Server	Server process ID is 3492.		
6	2018-04-14 14:06:32.210	Server	System Manufacturer: 'Hewlett-Packard', System Mode		
7	2018-04-14 14:06:32.210	Server	Authentication mode is MIXED.		

3. Open log files at SQL Server Log directory: C:\Program Files\Microsoft SQL Server\MSSQL12.MSSQLSERVER\MSSQL\Log