Lab Test 1 - Installation and Managing Database (Solution)
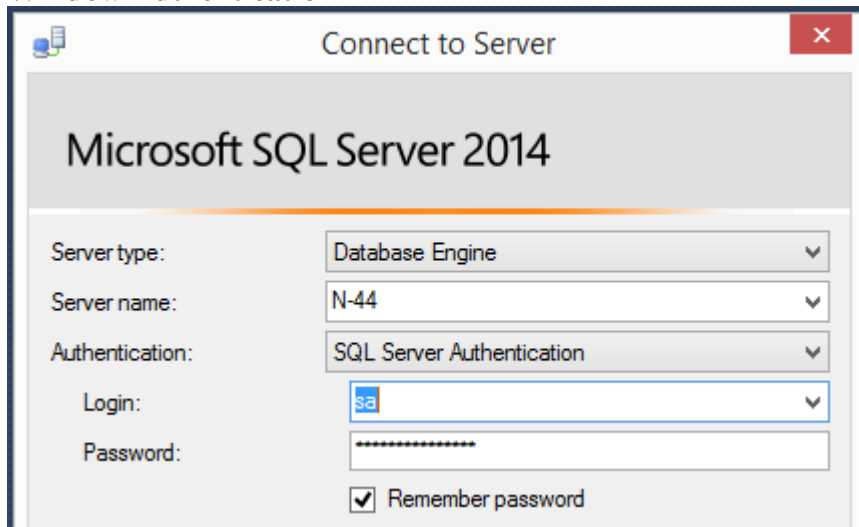
Your SQL Server Instance name (Example: SE05\Farah)

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).
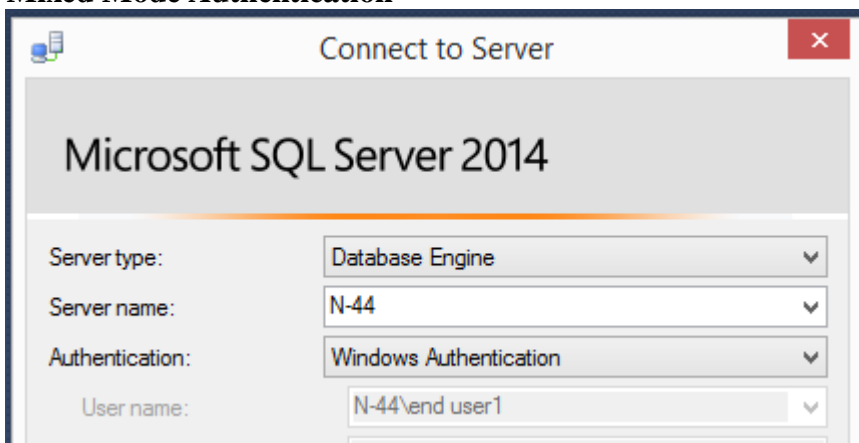
(2 Marks)

Two ways
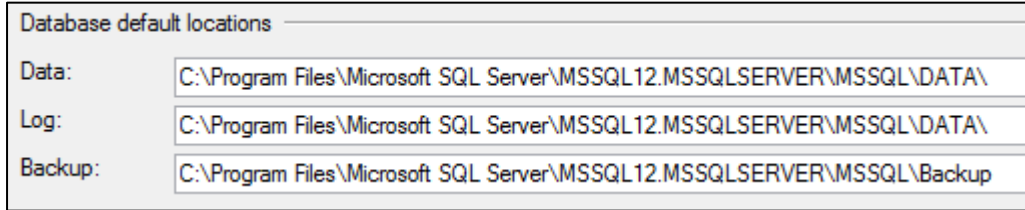1. **Window Authentication**

2. **Mixed Mode Authentication**

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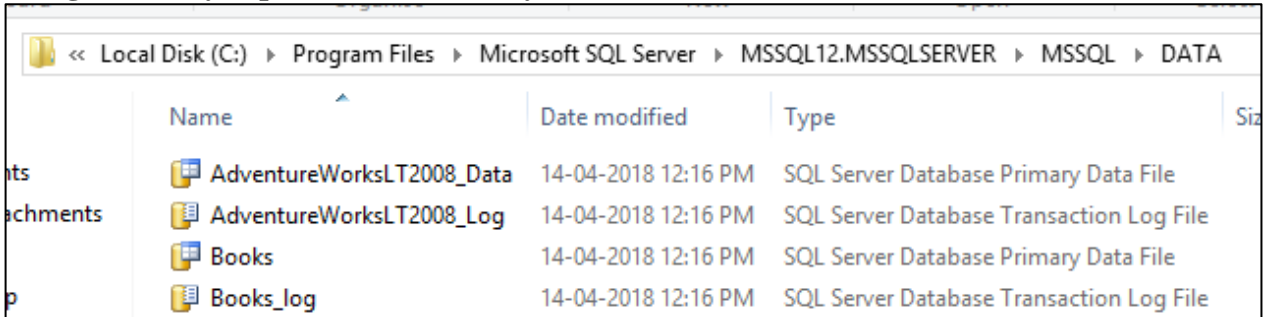
(2 Marks)

Two ways:

1. **Using SQL Server -> Properties in SQL Server -> Database Settings**

2. **Using Directory explorer in Window systems**

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		= 302 Bytes / row

2. **Rows per page:**
= 8060 / 302
= 27 rows/page

3. **Pages needed for 10000 rows:**
= 10000 / 27
= 370 pages

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)	Integer	= 4
License Class	Char(5)	= 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>
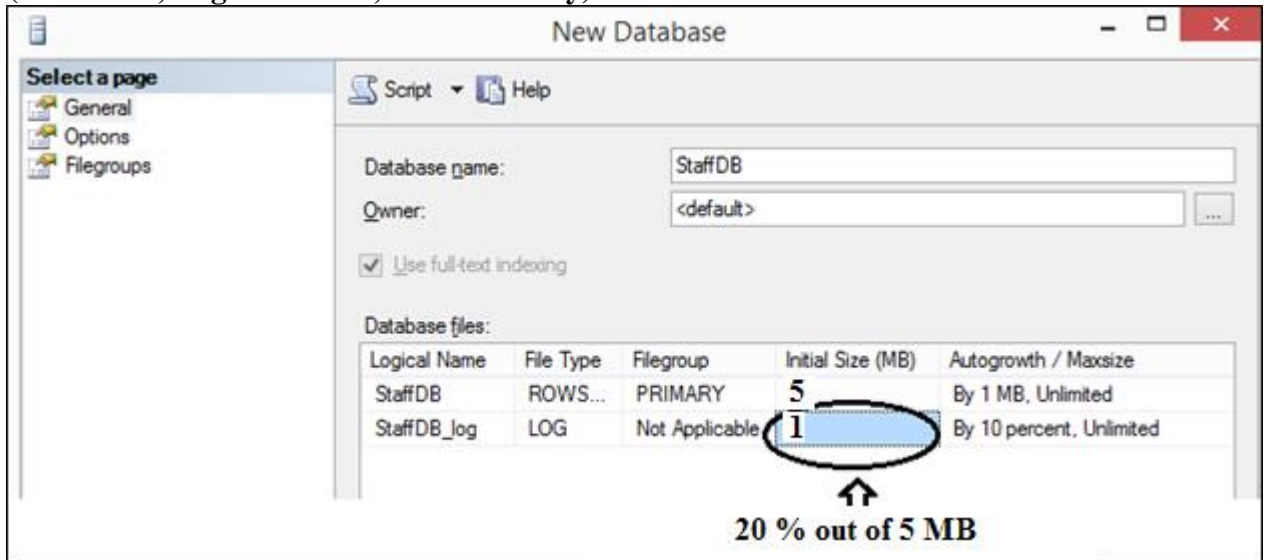
Total estimated spaces = 3+2 = **5 MB**

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)

2. **Using SQL Server -> Properties in SQL Server ->**
   Set State Restrict Access to "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.
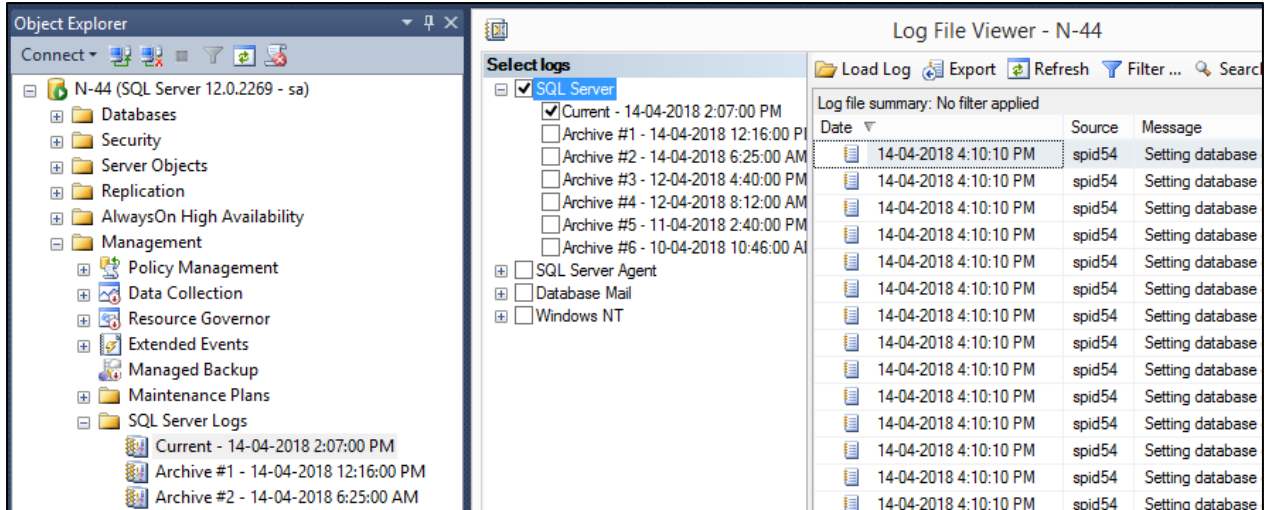
(2 Marks)

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:

1. **Click SQL Server Engine -> Management -> SQL Server Logs**

2. **Using T-SQL : EXEC sp_readerrorlog**

	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**