# Week 13 Lab 1 Practical

# Duties of a DBA - Backup and Restore

**Completing this worksheet will help prepare you for the next mini assessment. This is a checkpoint, you may work in pairs.**

1. **What are some common tasks a DBA can be expected to complete? For each also list how often they should occur**

Backup the database – Hourly for small backup and every night for full backup

Create new users – Whenever new user is required for the database

Grant/Restrict permission from users

1. **How would you automate your production backups?**

Create a script that will perform a backup script which can be run periodically

1. **How would you check your backups to validate that they were successfully created?**

Run a restore using the backup to make sure that the backup is functioning probably

1. **List the three backup models in SQL Server and the associated pros and cons.**

*Full backup* – Capture the whole database at a point in time, additional transaction log backup may be required. Pro of this is that it is less complex as the whole database is backup. The con of this is that it takes a long time to complete the backup.

*Differential backup* - A differential backup captures only the data that has changed since that full backup. Pro is that it is quick but the cons is that there you need to restore the base of the differential backup before restoring the differential backup itself. This means that two restore will have to be conducted.

*Transaction log backup* – can be perform frequently as it is quick. This will back up the transaction that has occurred to the database. This will require an initial full backup to be perform. The con of is that If a transaction log is damaged, work that is performed since the most recent valid backup is lost. Transaction backup will have to be restored in order and is only advice to be use when a small error has occurred during the current transaction.

1. **List the two ways these backup models can be set (include any syntax)**

Using the GUI to create a backup or using a script

For full backup

BACKUP DATABASE AdventureWorks TO DISK = 'C:\AdventureWorks.BAK'

GO

For differential backup

BACKUP DATABASE AdventureWorks TO DISK = 'C:\AdventureWorks.DIF' WITH DIFFERENTIAL

GO

**Let have a quick run through. Files on the I: drive and in Gitlab.**

**Install the Pubs database on your containerised MSSQL Server (installpubs.sql).**

**Take a full backup of your Pubs database (make sure you have closed any query windows).**

**Insert the Pubs data.**

**Take a differential backup.**

**Insert a new author <YourName> (or update an existing author).**

**Take a differential backup.**

**Restore the full backup only (explore the Options and the Timeline)**

**Verify there is no data.**

**Restore the full backup + differential + transactions logs.**

**Confirm your data is in its most recent state.**

**DBCC CHECKDB for allocation or consistency errors.**