LAB #12

BACKUP DEVICES, BACKUP and RESTORE of Databases

BACKUP DEVICES

Add a disk backup device named 'Base_99_Backup', with the physical name 'D:\SQL\Backup\Base_99_Backup.bak' for the database Base_99:

```
EXEC sp_addumpdevice 'disk', 'Base_99_Backup', 'D:\SQL\Backup\Base_99_Backup.bak';
```

Add a remote disk backup device named 'Base_991_Backup', with the physical name '\\Server_1\backups\Base_99_Backup.bak' for the database Base_99:

```
EXEC sp_addumpdevice 'disk', 'Base_991_Backup', '\\Server_1\Backups\Base_991_Backup.bak';
```

Display information about disk backup device 'Base_99_Backup':

```
EXEC sp_helpdevice 'Base_99_Backup';
```

Delete a disk backup device named 'Base_99_Backup':

```
EXEC sp_dropdevice 'Base_99_Backup', 'DELFILE';
```

BACKUP

Create full backup for the database Base_99:

```
USE master;
EXEC sp_addumpdevice 'disk', 'Base_99_Backup', 'D:\SQL\Backup\Base_99_Backup.bak';
BACKUP DATABASE Base_99 TO Base_99_Backup;
```

Create differential backup for database Base_99:

```
USE master;
EXEC sp_addumpdevice 'disk', 'Base_992_Backup', 'D:\SQL\Backup\Base_992_Backup.bak';

BACKUP DATABASE Base_99 TO Base_992_Backup;
BACKUP DATABASE Base_99 TO Base_992_Backup WITH DIFFERENTIAL;
```

Create full backup for the database Base_99 in folder 'D:\SQL\Backup':

```
USE master;
BACKUP DATABASE Base_99 TO DISK = 'D:\SQL\V3\Base_99.bak';
```

LOG BACKUP

Create transaction log backup for database Base_99:

```
USE master;
EXEC sp_addumpdevice 'disk', 'Base_994_Log', 'D:\SQL\Backup\Base_994_Log.bak';
EXEC sp_addumpdevice 'disk', 'Base_994_Backup', 'D:\SQL\Backup\Base_994_Backup.bak';

BACKUP DATABASE Base_99 TO Base_994_Backup;
BACKUP LOG Base_99 TO Base_994_Log;
```

Create transaction log backup for database Base_99 in two files Base_99_Log1 and Base_99_Log2:

```
USE master;
EXEC sp_addumpdevice 'disk', 'Base_995_Backup', 'D:\SQL\Backup\Base_995_Backup.bak';
EXEC sp_addumpdevice 'disk', 'Base_995_Log1', 'D:\SQL\Backup\Base_995_Log1.bak';
EXEC sp_addumpdevice 'disk', 'Base_995_Log2', 'D:\SQL\Backup\Base_995_Log2.bak';

BACKUP DATABASE Base_99 TO Base_995_Backup;
BACKUP LOG Base_99 TO Base_995_Log1;
BACKUP LOG Base_99 TO Base_995_Log2;
```

GROUPS and FILES

Create backup of the files PFile995 and PFile996, and filegroup Group_992 for the database Base_99 (files and filegroups must exists):

```
USE master;
EXEC sp_addumpdevice 'disk', 'Base_996_Backup', 'D:\SQL\Backup\Base_996_Backup.bak';

BACKUP DATABASE Base_99 TO Base_996_Backup;
BACKUP DATABASE Base_99
FILE = 'PFile995',
FILE = 'PFile996',
FILEGROUP = 'Group_992'
TO Base_996_Backup;
```

Create backup of the filegroups Group_991 and Group_992 for the database Base_99:

```
USE master;
EXEC sp_addumpdevice 'disk', 'Base_997_Backup', 'D:\SQL\Backup\Base_997_Backup.bak';

BACKUP DATABASE Base_99 TO Base_997_Backup;
BACKUP DATABASE Base_99
FILEGROUP = 'Group_991',
FILEGROUP = 'Group_992'
TO Base_997_Backup;
```

Create backup of the files PFile995 and PFile996 for the database Base_99:

```
USE master;
EXEC sp_addumpdevice 'disk', 'Base_998_Backup', 'D:\SQL\Backup\Base_998_Backup.bak';

BACKUP DATABASE Base_99
FILE = 'PFile991',
FILE = 'PFile992'
TO Base_998_Backup;
```

RESTORE

Delete database Base_99. Restore full database backup for the database Base_99:

```
USE Master;
DROP DATABASE Base_99;
```

```
RESTORE DATABASE Base_99 FROM Base_99_Backup;
```

Restore differential database backup for the database Base_99. Database Base_99 exists and it will be replaced:

```
USE Master;
RESTORE DATABASE Base_99
   FROM DISK = 'D:\SQL\Backup\Base_992_Backup.bak'
   WITH FILE = 1, NORECOVERY, REPLACE;
RESTORE DATABASE Base_99
   FROM DISK = 'D:\SQL\Backup\Base_992_Backup.bak'
   WITH FILE = 2, RECOVERY, REPLACE;
```

NORECOVERY specifies that roll back not occur. RECOVERY instructs the restore operation to roll back any uncommited transactions. After the recovery process, the database is ready for use.

Restore full database backup for the database Base_99. Full backup is placed in folder 'D:\SQL\Backup\'. Database Base_99 exists and it will be replaced:

```
USE Master;
RESTORE DATABASE Base_99 FROM DISK = 'D:\SQL\Backup\Base_99_Backup.bak' WITH REPLACE;
```

LOG

Restore full database backup and transaction log backup for database Base_99:

```
USE Master;
RESTORE DATABASE Base_99 FROM Base_994_Backup WITH NORECOVERY, REPLACE;
RESTORE LOG Base_99 FROM Base_994_Log;
```

Restore full database backup and transaction log backup for database Base_99 and move the restored database in folder 'D:\SQL\V1':

```
USE master;
RESTORE FILELISTONLY FROM DISK = 'D:\SQL\Backup\Base_995_Backup.bak';
RESTORE DATABASE Base_99 FROM Base_995_Backup WITH REPLACE,
MOVE 'PFile991'      TO 'D:\SQL\V1\PFile991.mdf',
MOVE 'Base991_log' TO 'D:\SQL\V1\Base991_log.ldf';
```

GROUPS and FILES

Restore the database Base_99 from files and filegroups backup:

```
USE Master;
RESTORE DATABASE Base_99
FILE = 'PFile995',
FILE = 'PFile996',
FILEGROUP = 'Group_992'
FROM Base_996_Backup WITH FILE = 1, NORECOVERY, REPLACE;
RESTORE DATABASE Base_99 FROM Base_996_Backup WITH FILE = 1, RECOVERY, REPLACE;
```

Restore the database Base_99 from filegroup backup:

```
USE Master;
RESTORE DATABASE Base_99
FILEGROUP = 'Group_991',
FILEGROUP = 'Group_992'
FROM Base_997_Backup WITH FILE = 1, NORECOVERY, REPLACE;
RESTORE DATABASE Base_99 FROM Base_997_Backup WITH FILE = 1, RECOVERY, REPLACE;
```

Restore the database Base_99 from file backup:

```
USE Master;
RESTORE DATABASE Base_99
FILE = 'PFile991',
FILE = 'PFile992'
FROM Base_998_Backup WITH FILE = 1, RECOVERY, REPLACE;
```

Create Log backup for database Base_99. Determine the number and names of the files in the database being restored. Restore database Base_99 in folder 'D:\SQL\V9\' (this folder must exists).

```
USE master;
EXEC sp_addumpdevice 'disk', 'Base_999_Backup', 'D:\SQL\Backup\Base_999_Backup.bak';
EXEC sp_addumpdevice 'disk', 'Base_999_Log', 'D:\SQL\Backup\Base_999_Log.bak';

BACKUP DATABASE Base_99 TO Base_999_Backup;
BACKUP LOG Base_99 TO Base_999_Log;

RESTORE FILELISTONLY FROM DISK = 'D:\SQL\Backup\Base_999_Backup.bak';
RESTORE DATABASE Base_99
   FROM Base_999_Backup
   WITH NORECOVERY, REPLACE,
   MOVE 'PFile991' TO 'D:\SQL\V9\PFile991.mdf',
   MOVE 'Base991_log' TO 'D:\SQL\V9\Base991_log.ldf';
RESTORE FILELISTONLY FROM DISK = 'D:\SQL\Backup\Base_999_Backup.bak';
RESTORE LOG Base_99
   FROM Base_999_Log
   WITH RECOVERY, REPLACE;
```

Exercises.

1. Add a disk backup device named 'Base3_Backup', with the physical name 'D:\SQL\Backup\Base3_Backup.bak' for the database Base3.
2. Add a remote disk backup device named 'MyDisk', with the physical name '\\Server_1\backups\Base3_Backup.bak' for the database Base3.
3. Display information about disk backup device 'Base3_Backup'.
4. Delete a disk backup device named 'Base3_Backup'.
5. Create full backup for the database Base3.
6. Create differential backup for database Base3.
7. Create full backup for the database Base3 in folder 'D:\SQL\Backup3'.
8. Create transaction log backup for database Base3.
9. Create transaction log backup for database Base3 in two files Base3_Log1 and Base3_Log2.
10. Create backup of the files and filegroups for the database Base_99 (files and filegroups must exists).
11. Create backup of the filegroups for the database Base3.
12. Create backup of the files for the database Base3.
13. Create the database B and it full backup. Delete database B. Restore full database backup for the database B.
14. Restore full database backup for the database B. Database B exists and it will be replaced.
15. Restore full database backup for the database B from folder 'D:\SQL\Backup\'. Database B exists and it will be replaced.
16. Create the backup for the database B into 'D:\SQL\Backup3' folder. Determine the number and names of the files in the database being restored (RESTORE FILELISTONLY statement). Restore the database into 'D:\mssql\data' folder (this folder must exists). The new name of the database is B_1.
17. The following example restores a full database and transaction log fot the database B.
18. The following example restores a full database and transaction log and moves the restored database into the 'D:\mssql\data'.
19. Restore the database Base3 from two files. One file is Base3_Backup, second file is transaction log – Base3_Log.
20. Restore the database Base3 from filegroup Group11.