**Backup plan for AdventureWorks (PROJETO DATABASE)**

We created Two Backup devices named “**BackupsOfProjects**” and **“BackupsOfPROJECTDiffAndLog”** which will contain/store all backups crucial for the restoring operation to run smoothly.

The full backups will be performed at the end of each day (00:00 am) in order to fully store all of the day’s actions. In this full backup we have chosen the ***REWIND*** option in order to remove all the unnecessary accumulative backup data stored from the passage of time

The differential backups will be done every 4 hours except during the time of a full-backup (04:00 am / 08:00 am / 00:00 pm / 04:00 pm / 08:00 pm), resulting in 5 differential backups every day which will serve as a way to save all the information that occurred in between that small time frame, since only the last differential is needed we also have chosen to use the ***REWIND*** option.

Besides this we will also have backup logs being made every 40 mins not counting the time a Differential or a Full backup is being made meaning we will have 5 log backups every 4 hours resulting in a total of 25 backup logs every day.

The log backups have the **NOREWIND** option in order to accumulate all of the day’s actions without any flaw since they are necessary for a proper restore.

Though it wasn’t asked, we also made a way to create a backup tail to save actions that the backups did not save.

Possible ways to restore the database:

* If the database got damaged right after a full then we only need to execute the **BackupsOfProjects** device with FILE = 1.
* If the database got damaged right after a Differential then we need to execute the **BackupsOfProjects** device followed by the **BackupsOfPROJECTDiffAndLog,** both with FILE = 1.
* If the database got damaged right after a Log backup then we need to execute the **BackupsOfProjects** device followed by the **BackupsOfPROJECTDiffAndLog**, depending on how many logs are needed the FILE = (location of the log we want) can vary from 2 to 6 necessary logs since FILE = 1 belongs to the differential always.
* If database got damaged while some information wasn’t stored/backed up properly then we must also use the trail of logs.

**Why did we use two backup devices instead of just one:** We opted for two due to complications with the differential backups. Though it is perfectly feasible to only have one to store it all, since we only need the latest differential and if we were to use the rewind option to only keep said last one, such action would result in losing the full-backup in the process, thus to be able to save space and to not be overwhelmed by backups if we chose to have a secondary backup device, besides this way also turns the restore differential code (2nd option in the “Possible ways to restore the database:”), as static as possible, not needing any alteration to the number put next to FILE= , and maintains the number of log backups in check (always ranging from 2 to 6 (5 log backups per differential)).