What's the difference between full, differential and transactional back up?

1. Full Backup

- **What it does:** Backs up the **entire database** (data + part of transaction log).
- **Usage:** It's the **base** backup required before any differential or log backups.
- **Recovery:** Can be used alone to restore the database **up to the time of the full backup**.
- **Size:** Largest among the three.

Example Use Case: Weekly full backups every Sunday.

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2. Differential Backup

- **What it does:** Backs up **all changes since the last full backup** (not the last differential).
- **Usage:** Requires the **last full backup** to restore. Faster to create than full, but grows over time.
- **Recovery:** You need the **full backup + the latest differential backup**.
- **Size:** Medium (grows as more changes happen since the last full).

Example Use Case: Daily differential backups between weekly full backups.

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3. Transaction Log Backup

- **What it does:** Backs up all **changes recorded in the transaction log** since the last log backup.
- **Usage:** Allows **point-in-time recovery**.
- **Recovery:** You need:
    - Last full backup
    - Optional differential
    - **All log backups** up to the point you want to restore
- **Size:** Small (usually), very frequent.

Example Use Case: Log backups every 15 minutes for high-availability systems.

Backup Type	Day	Notes
Full Backup	Sunday	Complete base backup
Differential	Monday	Changes since Sunday
Differential	Tuesday	Changes since Sunday
Log Backup	Every hour	Fine-grained changes tracking

What is permission and What's the difference between grant and deny and used on what level?

Difference Between GRANT, DENY, and REVOKE

Command	What it does	Overrides	Purpose
GRANT	Gives a user permission to perform an action	Nothing	Allow access
DENY	Explicitly blocks a user from performing an action	GRANT	Block access even if granted elsewhere
REVOKE	Removes a previous GRANT or DENY	N/A	Neutralize previous permission

What's sql profiler and when using it?

With SQL Profiler, you can:

- See which queries are being executed
- Monitor stored procedures, T-SQL commands, and errors
- Track login/logoff activity
- Measure query performance (duration, reads/writes, CPU time)
- Catch slow or expensive queries
- Detect deadlocks and blocking issues
- Analyze security issues or unauthorized access

What is trigger and why use it and on what level and what makes it different from normal Stord procedure

Triggers are used to:

- Enforce business rules automatically
  (e.g., no negative salaries)
- Audit changes (who updated what, when)
- Log changes into history tables
- Prevent invalid operations
- Cascade actions (like automatically updating related rows)