**BWT Task-08 Exercise**

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**ELT VS ETL**

**ELT:**

* Stands for Extract, Load and Transform
* Transformation happens after loading into the target database which is why the target database needs more computing power
* It is used in scenarios where speed of data loading is crucial which means ELT are used in big data and real time applications
* ELT provides the flexibility to transform data based on the use cases.
* ELT can be used where flexible data exploration and cloud based solutions are needed.
* **Use Case:** Real-time analytics for business intelligence.

**ETL:**

* Stands for Extract, Transform and Load.
* Transformation happens before loading into the target database which is why the target database needs less computing power.
* It is used in scenarios where complex transformations are required before the data can be used.
* ETL is used in scenarios when the target database lacks the computing power to efficiently handle large scale transformations.
* Used in historical data processing.
* **Use Case:** Daily Sales Reports

**Batch VS Streaming Pipeline**

**Batch Pipeline:**

* Its an approach to process and analyze large volumes of data in the form of batches which have been collected over a period
* It involves stages like data collection, storage, process and reporting.
* It is used when the analysis of large sets of data is to be carried out to find trends and patterns.
* Time insensitive complex calculations can be carried out with the help of batch ideology.

**E-Commerce Sales Analysis**

* Analysis of monthly sales data to understand trends can be a use case for this.
* Collect sales data from all sources.
* Store sales data in a warehouse.
* Aggregate and analyse monthly data in form of batches.
* Generate reports and make dashboards.

**Streaming Pipeline:**

* It is an approach to process data in real-time as the data is generated.
* It involves stages like data ingestion, real-time processing, data storage and real-time monitoring and reporting.
* It is used in scenarios of event detection.
* For the purposes of tracking and responding to user interactions in real time.

**Real-Time Fraud Detection**

* Detection of fraudulent activities in real-time to minimize financial loss can be a use case for this.
* Continuously ingest real-time transaction data.
* Analyze each transaction as it occurs.
* Detect fraud in real time.
* Block and notify.