

Data Transformation & Cleaning in SQL for Reporting and Analytics

Project Title:

Data Transformation & Cleaning in SQL for Reporting and Analytics

Overview:

This project demonstrates advanced SQL capabilities in data formatting, cleaning, string manipulation, and transformation — key to building clean dashboards, analytics reports, and user-friendly data pipelines.

The challenges reflect real-world issues in customer, product, and sales datasets — like messy text, missing values, inconsistent formats, and semi-structured fields.

Skills Demonstrated:

- Data Type Conversion using CAST, CONVERT, TRY_CAST
- NULL Handling with ISNULL, COALESCE, and CASE
- Text Standardization: UPPER, LOWER, Title Case
- Pattern Matching with LIKE and PATINDEX
- Date Calculations: DATEDIFF, GETDATE, Date Bucketing
- Formatting Currency and Percentages
- Delimited String Parsing: STRING_SPLIT, STRING_AGG
- Custom Tags Analysis
- Clean Report Output Design
- Phone number normalization and CSV transformation
- Preparing export-ready, dashboard-safe reporting datasets

Key Highlights:

1. Format purchase values into clean currencies (₹, \$, €).
2. Clean up dirty text fields using REPLACE, TRIM, LTRIM/RTRIM.
3. Split and normalize CSV fields into clean tags for filtering.
4. Calculate customer tenure and loyalty segments.
5. Generate user-friendly exports with formatted strings.
6. Flatten price history into readable rows for audit trail.
7. Build full customer profile output with transformed, cleaned fields.

Ideal For:

Clients needing SQL-based reporting, ETL transformation, or dashboard-ready datasets. Perfect for BI projects, marketing reports, and customer data cleanup.