

Data Collection and Preprocessing Phase

| | |
|---------------|--------------------|
| Date | 28 July 2025 |
| Project Title | Inflation Analysis |
| Maximum Marks | 10 Marks |

Data Exploration and Preprocessing

Identifies data sources, assesses quality issues like missing values and duplicates, and implements resolution plans to ensure accurate and reliable analysis.

| Section | Description |
|---------------------|---|
| Data Overview | <p>Two datasets were used:</p> <ol style="list-style-type: none"> Global Inflation Dataset containing inflation rates from 1980 to 2024 across various countries with each year as a separate column. Country-Region Mapping Dataset providing the region classification for each country. These datasets were combined to enable both temporal and geographical inflation analysis. |
| Data Cleaning | <ul style="list-style-type: none"> - Handled missing values by transforming year columns into rows (unpivoting), which helped isolate and remove nulls more effectively. - Corrected formatting issues, including date type conversion from text. - Ensured country names were consistent across both datasets to allow clean joins. - Removed duplicate records post-merging and cleaning |
| Data Transformation | <p>Applied Power Query to perform:</p> <ul style="list-style-type: none"> - Filtering: Focused on years post-1980 and removed records with incomplete values. - Sorting and Pivoting: Rearranged data to support decade-wise and region-wise analysis. - Calculated Columns: Adjusted Inflation Rate Decade Column Max Inflation Year Average Inflation Before & After COVID Inflation Averages |

| | |
|------------------------------|---|
| | Inflation Delta (YoY and Country-wise) |
| Data Type Conversion | Converted all year and inflation fields to appropriate numeric and datetime types for consistent aggregation and comparison. |
| Column Splitting and Merging | Split year fields from wide to long format (one year per row). Merged country-region mapping using country as the primary key. |
| Data Modeling | Established relationships in Power BI: - One-to-One between the Region Table and Inflation Table using the country index. - One-to-Many between the Decade Table and the Inflation Table using the year-to-decade mapping. - Created Date Hierarchies and Region-based filters to support drill-down visualizations. |
| Save Processed Data | Cleaned and transformed data was saved as a new query/table in Power BI for all downstream use including report visuals, dashboards, and measures. |