

Foreign Exchange Analysis

Function : #Risk Management | Industry : #Finance

Goal

- To enable effective management of foreign exchange risk.
- To analyse exchange rate trends that helps in making informed decisions.
- To forecast accurate exchange rate for different countries.

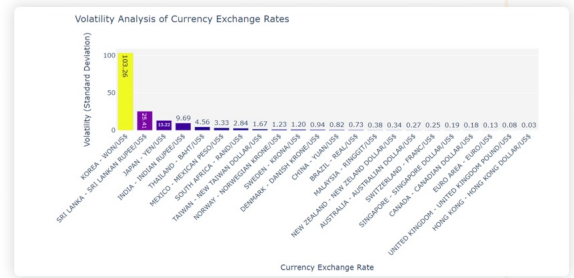
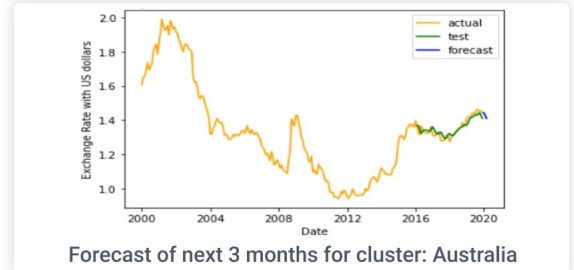
Technique

- Statistical Analysis
- Data Modelling
- Time Series Forecasting
- Visualization

Impact

- Prescriptive analysis to make informed recommendations and decisions for optimising future outcomes.
- Improved risk management.
- Better liquidity optimisation.

Result



Value Points

Understand the what, why, when, where & how

Exploratory Analysis

Exploratory Data Analysis On The Preprocessed Data To Derive Meaningful Data Insights



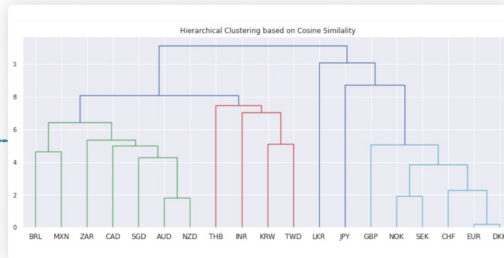
Heat map illustrating correlation among attributes

Exploratory data analysis enables business owners to derive meaningful insights and making better data-driven decisions as opposed to intuitive ones.

Cluster Analysis

Clustering

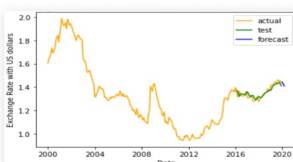
- Centroid Based Clustering
- Hierarchical Clustering
- Distance Based Clustering
- Incremental Learning



Cluster analysis resulting in clusters of countries exhibiting similar exchange rate patterns.

Cluster analysis provides valuable insights about the dynamics of exchange rates among different countries, enables in decision-making.

Forecasting



Cluster	KPI'S	LSTM	GRU
Cluster	MAE	0.0414	0.1212
	RMSE	0.04800	0.1233
	Time	1164.40 41 sec	1190.2 233 sec

Forecasting results as per the clusters using the LSTM model for next three months

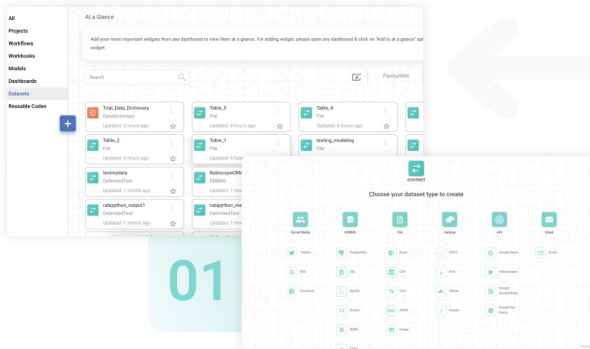
Using the forecasting insights, prescriptive analysis can be conducted to make informed recommendations and decisions for portfolio management.

Multi Persona DSML Platform

For all your data needs- Data Engineering, Data Science, Data Visualisation, IoT



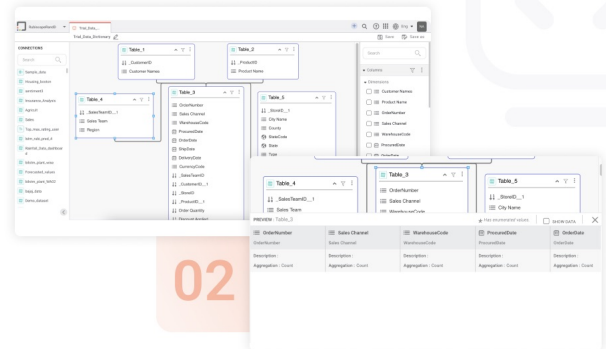
Data Connect



01

Data Source: Foreign_exchange_dataset

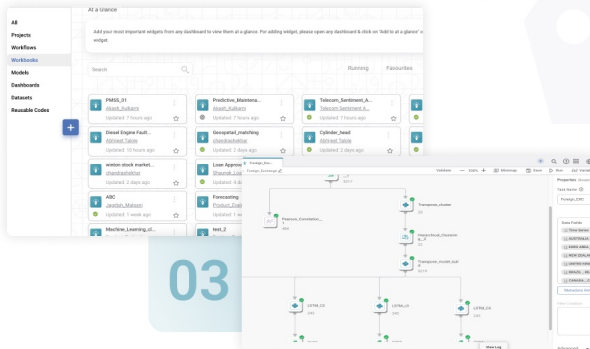
Metadata Manger



02

Comprehensive Data Operations, encompassing Metadata Management

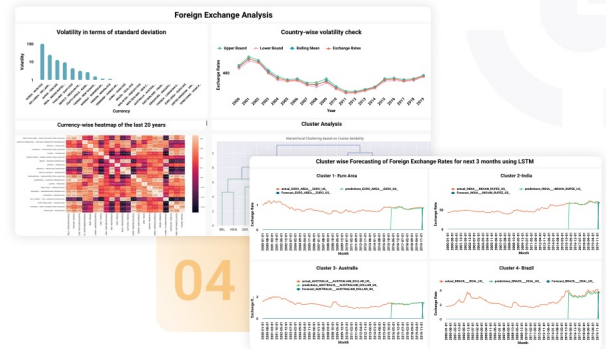
Model Studio



03

Modeling, encompassing the selection and configuration of models

Visualisation



04

Viz Ops, Illustrating The Core Trends And Graphical Representations

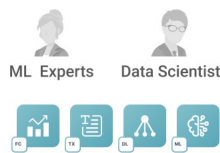
Agile Data Science

Encapsulating best practices, tools and methods

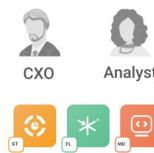
Data Ops



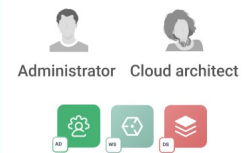
ML Ops



Viz Ops



Tech Ops



Ideate

- What is the **goal**?
- How can you leverage the **data**?
- What do you want to **predict**?

Acquire

- How is data **sampled**?
- Which data is **relevant**?
- Any data **privacy** issue?

Explore

- Plot the **data**
- Are there **anomalies**?
- Are there **patterns**?

Model

- **Build** a model
- **Fit** the model
- **Validate** the model

Present

- What did we **learn**?
- Do the results make **sense**?
- Can we tell a **story**?

Deploy

- Where to **Deploy**?
- What is the **Structure** of Pipeline?
- How to **Optimise** and **Scale**?