

CURRENCY EXCHANGE RATE

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Ideation Phase

1. Project Objective and Scope Definition:

- Define the specific goals of your project, such as predicting exchange rate movements, identifying trends, or optimizing currency exchange strategies.
- Decide the scope of your analysis, which currencies and timeframes you want to focus on.

2. Data Collection:

- Identify reliable data sources for historical and real-time exchange rate data. Sources can include APIs, financial data providers, and central banks.
- Determine the frequency of data updates (daily, hourly, etc.) and establish a data collection pipeline.

3. Data Preprocessing:

- Clean and normalize the data by handling missing values and outliers.
- Convert data into a suitable format, such as time-series data, for analysis.

4. Feature Engineering:

- Create relevant features for your analysis, such as moving averages, relative strength indices (RSI), and volatility indicators.
- Consider incorporating macroeconomic indicators (e.g., GDP, interest rates) that can impact exchange rates.

5. Exploratory Data Analysis (EDA):

- Visualize the data to identify patterns, trends, and correlations.
- Perform statistical analysis to gain insights into the data's characteristics.

6. Model Selection and Development:

- Choose appropriate machine learning or statistical models for your analysis. Time series models like ARIMA and machine learning models like LSTM and XGBoost are common choices.
- Train and validate your models using historical data.

7. Evaluation Metrics:

- Determine how you'll evaluate the performance of your models. Common metrics include Mean Absolute Error (MAE), Mean Squared Error (MSE), and accuracy.

8. Backtesting and Validation:

- Backtest your model on historical data to assess its performance and profitability.

- Implement cross-validation techniques to avoid overfitting.

9. Predictive Analytics:

- Use your model to make exchange rate predictions for future time periods.
- Visualize and interpret the results.

10. Risk Management and Strategy Development:

- Develop trading or investment strategies based on your predictions.
- Implement risk management techniques to minimize potential losses.

11. Reporting and Visualization:

- Create a user-friendly dashboard or reports to communicate your findings and predictions.
- Utilize data visualization tools like Matplotlib, Seaborn, or Tableau to convey your insights.

12. Continuous Monitoring and Updating:

- Implement a system for continuous data collection and model updates.
- Stay updated on market dynamics and adjust your models accordingly.

13. Ethical Considerations:

- Ensure your project complies with legal and ethical standards in financial analytics, especially if you plan to use it for trading or investment decisions.

14. Documentation and Sharing:

- Document your methodology, code, and findings for future reference and collaboration.
- Share your project with the data analytics community or potential stakeholders.

15. Security and Privacy:

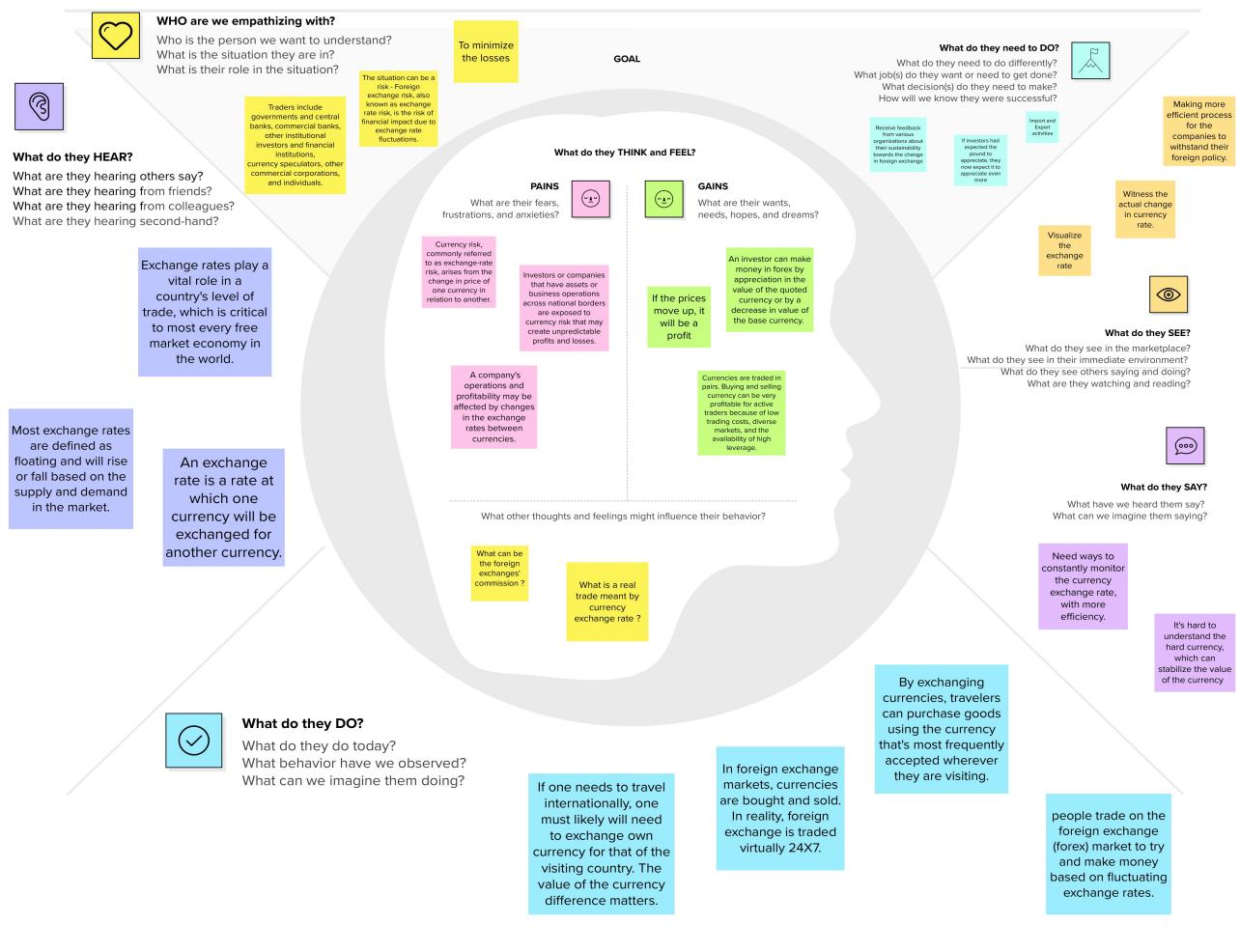
- Secure the data sources and the project's infrastructure to protect sensitive information.

Currency Exchange Rate - Data Analytics using IBM Cognos and Tableau

Companies that do business in more than one currency are exposed to exchange rate risk – that is, changes in the value of one currency versus another. Exchange rate risk (also known as foreign exchange risk, risk, or currency risk) is especially high in periods of high currency volatility.

Currency analytics are technology tools that enable global companies to manage the risk associated with currency volatility. Currency analytics often involve automation that helps companies access and validate currency exposure data and make decisions that mitigate currency risk.

Exchange rates are important indicators and metrics for every economy. For countries, they affect bilateral and multilateral trade and financial flows. Import and export businesses rely heavily on prevailing exchange rates in doing business. Hence, understanding the trend and fluctuations of FX is almost as important as seeking for new business prospects. Companies that monitor and obtain information on foreign exchange rates will stand a lower chance of losing out and a better chance of making profits.



Reference Link:

<https://app.mural.co/t/dataanalyticsproject5678/m/dataanalyticsproject5678/1698852210653/9b37a3d80bc021ede55c0e17f38c34edd5abea8a?sender=u3411af4ab6753e69950f2253>