Progress Report: Predicting Global Food Prices

Project Title: Predicting Global Food Prices

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Business Question: How can predictive analytics be used to forecast global food prices accurately to enhance market stability and inform policymakers?

Datasets: The dataset for this project will be obtained from publicly available sources such as:

- Food and Agriculture Organization (FAO)
- World Bank
- International Monetary Fund (IMF)
- United Nations Commodity Trade Statistics Database (UN Comtrade)
- Kaggle and other open-source financial databases

The dataset will include historical food price indices, macroeconomic indicators, weather patterns, supply chain disruptions, and geopolitical influences.

Data Dictionary:

- **Date:** The timestamp of recorded food prices
- **Food Commodity:** Type of food (e.g., wheat, rice, corn, etc.)
- **Price:** The recorded market price per unit (in USD or local currency)
- **Region:** The geographical location of the price data
- **Inflation Rate:** Percentage increase in the general price level
- **GDP Growth Rate:** The economic growth rate of the country
- **Supply Chain Disruptions:** Events that impacted food transportation and storage
- **Weather Conditions:** Temperature, rainfall, and other climate-related factors
- **Trade Policies:** Tariffs, import/export restrictions, and subsidies

Methodology:

1. **Data Collection:** Gather data from FAO, World Bank, and other sources.
2. **Data Preprocessing:** Handle missing values, normalize data, and perform feature engineering.
3. **Exploratory Data Analysis (EDA):** Generate visualizations and statistical summaries.
4. **Model Development:** Implement predictive models including Multiple Regression, Random Forest Regression.
5. **Model Evaluation:** Measure accuracy using RMSE, MAE, and other relevant metrics.

Business Value: This project aims to assist policymakers, supply chain managers, and financial analysts by providing reliable food price forecasts. This will enhance global food security, support inflation control measures, and optimize agricultural and trade policies.