


“Alphashots.AI Currency Analysis”

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Assignment Part 1

Alphashots.ai likely employs a combination of *time-series analysis and machine learning algorithms* to identify historical market patterns and project potential trends. Common algorithms in this field include:

1. **ARIMA (AutoRegressive Integrated Moving Average)**: This statistical model analyzes time-series data, making it effective for linear trend and seasonality forecasting.
 2. **LSTM (Long Short-Term Memory networks)**: A type of recurrent neural network, LSTM handles sequential data well, capturing non-linear patterns by remembering long-term dependencies in stock prices.
 3. **Decision Trees and Random Forests**: These machine learning algorithms are often used to classify and predict outcomes based on historical data features.
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Assignment Part 2: Python script


Step 1: Data Extraction

- Use the yfinance library to scrape EUR/INR currency data.
- Download historical data for the period from January 1, 2023, to September 30, 2024.

Step 2: Technical Analysis: Calculate the indicators for one-day and one-week periods:

- **Moving Average (MA):** Average of the closing prices over a specific period. The moving average helps smooth out price action, reducing volatility and noise.
- **Bollinger Bands (BB):** Calculate the 20-day moving average and use the standard deviation to create upper and lower bands.
- **Commodity Channel Index (CCI):** Measures price deviation from its average. CCI compares the current price to an average price over a certain period, indicating overbought or oversold conditions.

Step 3: Decision-making: Compare results to determine BUY, SELL, or NEUTRAL signals for each timeframe.

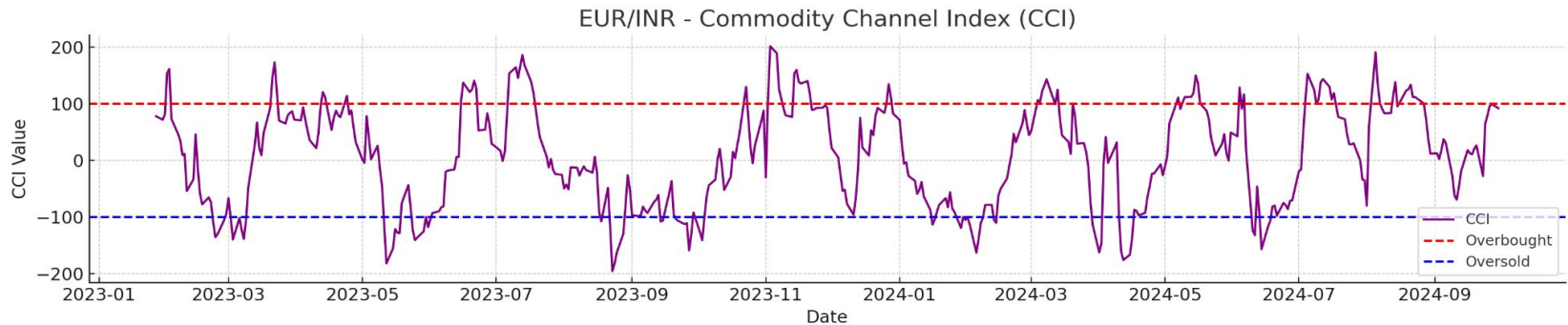
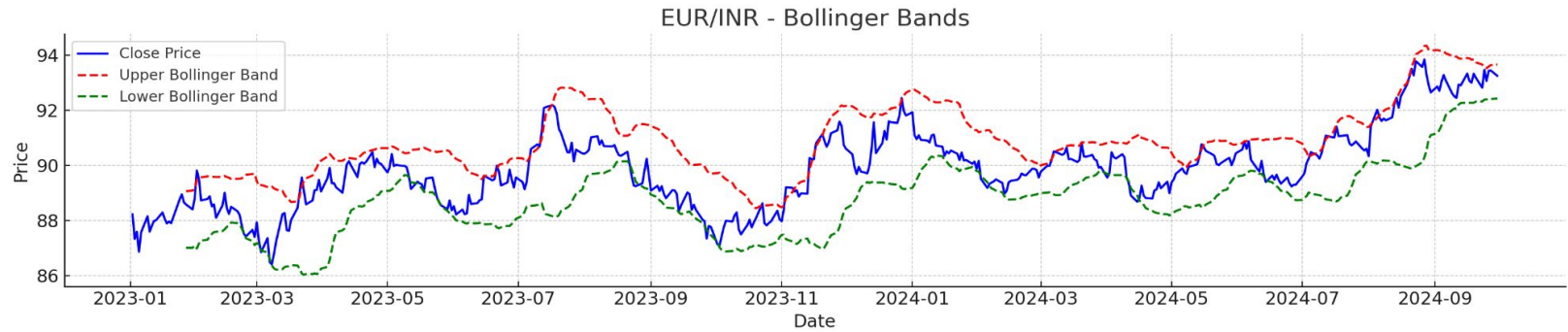
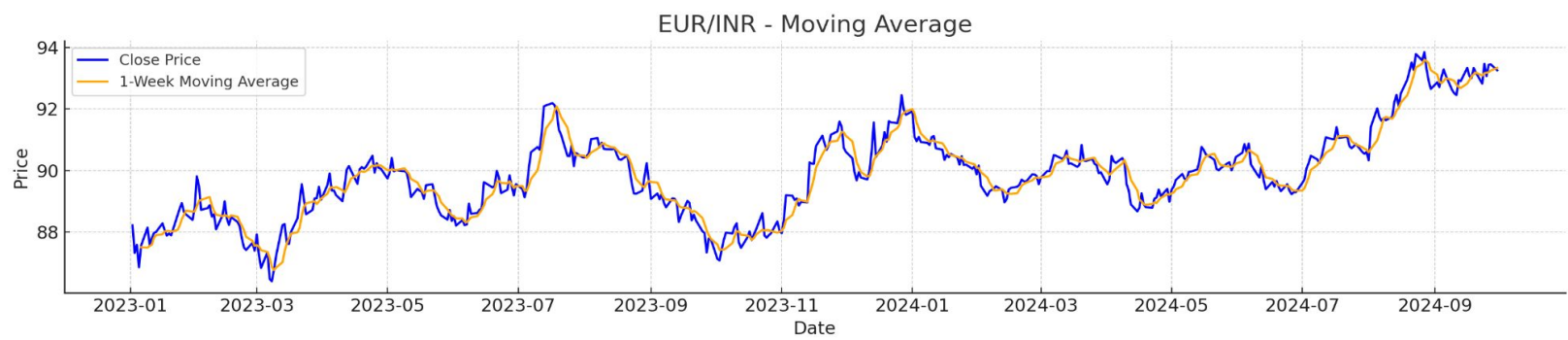


Summary Table: Table for each indicator's BUY, SELL, or NEUTRAL signals for one day and one week.

	Date	Moving Average	1-Day Bollinger Bands	1-Day CCI	1-Day
6	2024-09-20		BUY	NEUTRAL	NEUTRAL
5	2024-09-23		SELL	NEUTRAL	NEUTRAL
4	2024-09-24		BUY	NEUTRAL	NEUTRAL
3	2024-09-25		SELL	NEUTRAL	NEUTRAL
2	2024-09-26		BUY	NEUTRAL	NEUTRAL
1	2024-09-27		BUY	NEUTRAL	NEUTRAL
0	2024-09-30		SELL	NEUTRAL	NEUTRAL

	Moving Average	1-Week Bollinger Bands	1-Week CCI	1-Week
6	BUY	NEUTRAL	NEUTRAL	
5	BUY	NEUTRAL	NEUTRAL	
4	BUY	NEUTRAL	NEUTRAL	
3	BUY	NEUTRAL	NEUTRAL	
2	BUY	NEUTRAL	NEUTRAL	
1	BUY	NEUTRAL	NEUTRAL	
0	BUY	NEUTRAL	NEUTRAL	

Graphs:



Assumptions and Approaches:

- **Timeframes:** One day and one week are used to provide short-term insights.
- **Thresholds:** Thresholds chosen for each indicator (e.g., ± 100 for CCI, Bollinger Bands as overbought/oversold levels).
- **Approach:** Chosen indicators are commonly used for short-term currency trend analysis and that the values were cross-checked to ensure accuracy.

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