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import yfinance as yf
import pandas as pd
from textblob import TextBlob
import matplotlib.pyplot as plt

# ========== STEP 1: Download Financial Data ==========
def get_stock_data(ticker, start_date, end_date):
    data = yf.download(ticker, start=start_date, end=end_date)
    return data

# ========== STEP 2: Calculate Trend Indicators ==========
def add_moving_averages(data):
    data['MA_50'] = data['Close'].rolling(window=50).mean()
    data['MA_200'] = data['Close'].rolling(window=200).mean()
    return data

def detect_trend(data):
    if data['MA_50'].iloc[-1] > data['MA_200'].iloc[-1]:
        return "Uptrend"
    elif data['MA_50'].iloc[-1] < data['MA_200'].iloc[-1]:
        return "Downtrend"
    else:
        return "Sideways"

# ========== STEP 3: Analyze Economic Indicators ==========
def analyze_economic_indicators(indicators):
    score = 0
    if indicators['gdp_growth'] > 2.0:
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        score += 1
    if indicators['inflation'] < 3.0:
        score += 1
    if indicators['unemployment'] < 5.0:
        score += 1
    return "Positive" if score >= 2 else "Negative"

# ========== STEP 4: Analyze Financial Reports (Text) ==========
def analyze_financial_report(text):
    blob = TextBlob(text)
    polarity = blob.sentiment.polarity
    return "Positive" if polarity > 0 else "Negative"

# ========== STEP 5: Combine All for Final Trend Detection ==========
def detect_market_trend(stock_data, economic_indicators, report_text):
    stock_data = add_moving_averages(stock_data)
    trend = detect_trend(stock_data)
    econ_sentiment = analyze_economic_indicators(economic_indicators)
    report_sentiment = analyze_financial_report(report_text)

    print("\n--- Market Trend Report ---")
    print("Stock Trend:", trend)
    print("Economic Indicators Sentiment:", econ_sentiment)
    print("Financial Report Sentiment:", report_sentiment)

    if trend == "Uptrend" and econ_sentiment == "Positive" and report_sentiment ==
"Positive":
        return "Overall Market Trend: BULLISH"
```

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    elif trend == "Downtrend" and (econ_sentiment == "Negative" or report_sentiment == "Negative"):
        return "Overall Market Trend: BEARISH"
    else:
        return "Overall Market Trend: UNCERTAIN"

# ========== MAIN PROGRAM ==========
if __name__ == "__main__":
    # Get stock data
    ticker = "AAPL"
    start_date = "2022-01-01"
    end_date = "2024-12-31"
    stock_data = get_stock_data(ticker, start_date, end_date)

    # Economic indicators (mock data)
    economic_indicators = {
        "gdp_growth": 2.5,
        "inflation": 2.0,
        "unemployment": 4.2
    }

    # Financial report sample (mock text)
    report_text = """
    The company experienced strong revenue growth and significant improvements in net income.
    Management is optimistic about the coming quarters.
    """

    # Run analysis
```

```
result = detect_market_trend(stock_data, economic_indicators, report_text)
print(result)

# Optional: Plot
stock_data[['Close', 'MA_50', 'MA_200']].plot(title=f"{ticker} Price & Trends")
plt.show()
```