iPhone Review Sentiment Analysis - MCP Server + Claude UI

Objective

Build a pipeline that analyzes iPhone reviews using rule-based sentiment analysis (TextBlob), integrates with MCP Server as a tool, and uses Claude UI for human-guided reasoning.

System Architecture

The system includes:
- MCP Server to define and expose tools
- TextBlob for simple rule-based sentiment analysis
- Optional FastAPI for API access
- Claude UI for human interpretation

Dataset

Source: iphone.csv
- Main column: reviewDescription
- Preprocessed by dropping missing values and converting to strings
- Renamed to 'review' for processing

Sentiment Analysis Logic

Used TextBlob to determine sentiment polarity:
- Polarity > 0.1 -> Positive
- Polarity < -0.1 -> Negative
- Else -> Neutral

MCP Tool

Tool `get_docs(query)` filters reviews containing the query, computes sentiment distribution, and shows samples. Exposed via MCP Server.

API Option

FastAPI can be used to expose the tool for programmatic access via a `/sentiment?query=` endpoint.

Claude UI Integration

Claude UI cannot invoke APIs. Human users manually paste tool outputs into Claude to receive high-level business insights.

Benefits

Simple, lightweight, interpretable system. Rule-based sentiment allows fast deployment. Claude provides strategic insights.

Recommendations

Future improvements:

- Replace rule-based sentiment with ML model
- Add charts or trend graphs
- Automate Claude response ingestion