Advanced Stock Predictor AI — FAQ & Unique Features

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Unique Features

- Beautiful, modern UI with animated gradients and glass-morphism components.
- Real-time market overview cards (top gainers/losers, volumes) with caching.
- Robust technical indicator calculations that handle edge cases and NaNs gracefully.
- AI-powered insights with pluggable providers: Local Ollama, OpenRouter, and Google Gemini.
- Smart prompt context: historical summaries, date-specific highlights, ticker parsing from questions.
- Comprehensive ML pipeline: feature engineering, model training, evaluation, and ensemble prediction.
- Interactive Plotly charts: price with moving averages, RSI, MACD lines and histogram.
- Export predictions to CSV and show per-model confidence based on RMSE/current price heuristics.
- FastAPI companion API for health, stock series, trends, and a simple heuristic 'ask' endpoint.
- Defensive data handling: multi-index flattening, dtype coercion, safe defaults when data is sparse.

Frequently Asked Questions

What is Advanced Stock Predictor AI?

A Streamlit-based web app that provides real-time stock analysis, technical indicators (RSI, MACD, Moving Averages, Bollinger Bands), and AI-driven price predictions using multiple ML models.

Which markets or symbols are supported?

The app includes a preset list of Indian stocks (e.g., YESBANK.NS, SUZLON.NS) and also supports global search via Yahoo Finance. You can analyze any symbol that Yahoo Finance provides data for.

How do I run the app?

Install dependencies from requirements.txt, then run: streamlit run main.py (port 8501 by default).

Do I need API keys?

Only for optional AI providers. Local Ollama requires a running server; OpenRouter and Google Gemini require OPENROUTER_API_KEY or GEMINI_API_KEY respectively in your .env or Streamlit secrets.

What ML models are used?

Random Forest, Gradient Boosting, and Linear Regression. The app engineers 20+ technical features and evaluates models with RMSE, MAE, and R², plus an ensemble option.

How accurate are the predictions?

Accuracy varies by symbol and timeframe. The app shows test metrics and a confidence heuristic. Use results for educational purposes; they're not financial advice.

How do I change the prediction target date?

Use the date picker in the sidebar (Prediction Settings). The app forecasts up to 365 days ahead with adjustable model settings.

Can I compare two stocks?

Yes. In AI Insights, you can add a comparison symbol and time window. The app will provide a summarized comparison for the model context.

Why do I see 'AI error: Cannot connect to Ollama'?

The local Ollama server isn't running on 127.0.0.1:11434. Start it with 'ollama serve', or switch to OpenRouter/Gemini with valid API keys.

What if Yahoo Finance returns empty data?

It can be a symbol typo, network issue, or a temporary API change. Try a different period, verify the symbol, or check your network/proxy settings.

How do I deploy this app?

You can containerize with Docker or deploy via cloud (AWS/GCP/Azure). The repo includes docs with a deployment guide and a FastAPI service (api.py) for REST endpoints.

Is user authentication supported?

Yes. A login page with Firebase integration is included, plus a demo mode for quick access without registration.

Where are the logs and errors shown?

Within the Streamlit UI (warnings/errors) and in your terminal running Streamlit. The app tries to catch/guard common pandas/NumPy typing issues.