What Is a Trading Bot?

A trading bot is an automated software that executes trades on behalf of a user based on predefined criteria like:

- Technical indicators (e.g., RSI, MACD, Moving Averages)
- Market conditions
- Price thresholds
- Time-based rules

🕘 Trading Bot as a State Machine

🔄 Basic States:

State	Description
Idle	Waiting for market signal
Buy Signal	Criteria met to enter trade
Buying	Executing the buy order
Holding	Holding the asset, monitoring exit rule
Sell Signal	Exit condition met
Selling	Executing the sell order
Cooldown	Optional pause before next cycle

Example State Flow (Trend-following Strategy):

Idle

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Buy Signal ⟶▶ Buying ⟶▶ Holding ⟶▶ Sell Signal ⟶▶ Selling ⟶▶ Idle

🔍 Example Strategy:

Moving Average Crossover

- Buy when **50-day MA crosses above 200-day MA** (bullish crossover)
- Sell when **50-day MA crosses below 200-day MA** (bearish crossover)