Mechanical Trading Logic for Nifty 50 Intraday Option Buying

This strategy is designed to exploit the identified intraday Impulse-Digestion-Exhaustion pattern, filtered through the higher-timeframe 5-day mean-reversion rhythm. The logic is built purely on measurable price, volume, and derivatives data.

---

1. Detecting the Wall (Exhaustion of the Slow Grind)

The Wall is the point where the slow, grinding extension of the morning impulse loses mechanical energy. This is identified by a divergence between price velocity and participation (volume & open interest).

Price Velocity (V) The instantaneous rate of point change, calculated as the slope of a linear regression over the last 5 minutes on a 2-minute chart.
Volume Ratio (VR) Current 2-minute volume divided by the 30-minute rolling average volume.
Open Interest (OI) Z-Score A normalized measure of futures positioning crowding. A high positive Z-score indicates extended leverage[reference0].

Exhaustion Signal (The Wall) is confirmed when ALL of the following conditions are met

1. Velocity Decay `V(current) 0.5 V(5 minutes ago)`. The speed of the grind has halved.
2. Volume Divergence `VR 0.8`. Participation is below average during the attempted extension.
3. OI Divergence Price makes a higher high on the 2-minute chart, but the OI Z-Score makes a lower high. This is a classic Regular Bearish divergence, signaling trend exhaustion as price advances without fresh leverage[reference1].
4. Option Chain Sentiment (Confirmation) For an up-move exhausting at a resistance wall, the Put-Call Ratio (PCR) by open interest begins to rise, and the delta of at-the-money (ATM) call options starts to decline while put delta rises, indicating hedging or outright bearish positioning.

---

2. Convergence Logic Aligning Intraday Exhaustion with the 5-Day Macro Swing

The bot's Daily Bias is determined by the 1-hour trend, which proxies the 5-day rhythm.

5-Day Rhythm Proxy Use Heikin-Ashi candles on the 1-hour chart. A trend is defined as a sequence of 10 consecutive Heikin-Ashi closes above their opens (bullish) or below their opens (bearish).

Generated with https://kome.ai

Cycle Day Approximation The bot counts the number of 1-hour bars in the current trend. Given ~6.5 trading hoursday, a 5-day cycle spans ~32 hours. Day 4 of an Up rotation is approximated when the trend has lasted 25-30 consecutive bullish 1-hour bars.

Distinguishing a Healthy Pullback from a Cycle Reversal at the Wall

Signal	Healthy Pullback (Within 5-Day Trend)	Cycle Reversal (End of 5-Day Trend)
Price Action	Retracement holds the 1-hour 20-period EMA or the daily VWAP.	Break and close below the 1-hour 50-period EMA with authority (next candle confirms).
Volume	Volume contracts on the pullback.	Volume expands on the break lower.
Option Chain	Put OI increases moderately, primarily at lower strikes (hedging). Call OI does not collapse.	Aggressive Put Buildup at ATM and higher strikes. ATM Call OI drops sharply (long unwinding).
Delta Flow	Net options delta remains positive (underlying buying interest persists).	Net options delta turns negative and accelerates.

---

3. Mechanical Detection of a Cycle Break

The 5-day mean-reversion rhythm is broken when a new, directional, momentum-driven regime begins. This is detected by a synchronous expansion across price range, volume, and derivatives activity.

A Cycle Break is declared if AT LEAST TWO of the following three conditions trigger

1. Range Expansion The 1-hour candle's range (High - Low) exceeds 2.0 times the 20 period Average True Range (ATR).
2. Volume Climax The 1-hour volume is greater than 2.5 standard deviations above its 20 period moving average.
3. Derivative Shift The 25 delta risk reversal (implied volatility of 25 delta calls minus 25 delta puts) changes sign and moves 1 vol point in the direction of the break within one hour, indicating a repricing of tail risk.

Bot Action Upon detecting a Cycle Break, all mean-reversion bias is suspended. The bot will only trade in the direction of the break after a subsequent consolidation, using the Trap vs. Breakout filter below.

---

4. The Trap vs. Breakout Filter

When price pierces a known structural level (the Wall), this filter distinguishes a false liquidity grab from a genuine structural breakout.

A Liquidity Trap (False Break) is likely if

Volume Break occurs on volume below the 30 min average.
Option Chain No corresponding OI build-up at the breakthrough strike. For a breakout above resistance, ATM call OI change is flat or negative.
Delta The net spot-futures basis remains weak or negative during the break.
Price Behavior The break fails to sustain a 2-minute close beyond the level by more than 0.1% ("H 25 points for Nifty).

A Structural Breakout is likely if

Volume Break occurs on volume 1.5x the 30 min average.
Option Chain Clear OI accumulation at the breakthrough strike (e.g., call OI builds for an upside break).
Delta The net spot-futures basis strengthens in the direction of the break.
Price Behavior The break is validated by a follow through 2-minute candle that closes beyond the level by 0.15% ("H 40 points).

---

5. Execution Strategy Entry, Exit & Risk

Daily Bias Set at market open based on the 1-hour Heikin-Ashi trend. No trades are taken against the bias until a Cycle Break is confirmed.
Entry Signal Wait for the intraday Wall exhaustion signal (Section 1) to align with the 5-day cycle extreme. For example, on Day 4 of a 5-day Up rotation, upon detecting exhaustion at a resistance wall, buy ATM or slightly OTM put options. Entry is triggered on the first 2-minute close after all exhaustion conditions are met.
Position Size With ₹10,000 capital, risk no more than ₹1,000 (10%) per trade. For an ATM Nifty option with a delta of ~0.5, this typically allows 1-2 lots.
Exit Logic
Profit Target 20 points of index movement ("H ₹1,000 per lot).
Stop Loss 10 points against the trade ("H ₹500 per lot).
Trailing Stop If profit reaches 15 points, trail by the 3 period ATR (2 min).
Mechanical Exit Immediate exit if the 1-hour 50-period EMA is breached in the direction against the trade (for a put, a close above this EMA).
Option Chain Guardrails
Delta Threshold Exit if the net delta of the option position moves against you by 0.3 (e.g., put

delta goes from -0.5 to -0.2).
OI Unwind Exit if the OI at your strike decreases by 15% within 15 minutes, indicating rapid position unwinding.

Summary

This mechanical framework translates the observed structural behavior into a rule-based trading system. It uses the confluence of price-velocity decay, volumeOI divergences, and option-chain sentiment to identify high-probability exhaustion points. These intraday signals are then filtered through the 5-day rhythm context and protected by clear cycle-break and trapbreakout filters. The result is a disciplined, p h y s i c s b a s e d approach to intraday option buying on the Nifty 50.

Generated with https://kome.ai