**Current Trading Strategies**

**Moderate Retain Mode (v1.0)**

**Detailed Description:**  
Version 1.0 implements a classic grid‑trading strategy optimized for simplicity and reliability. It maintains a fixed grid of buy and sell thresholds relative to the previous price tick and uses a profit‑locking mechanism to secure gains. On each price update:

* If the percentage change since the last tick falls below **baseBuyThreshold** (default –0.5%), the bot executes a buy order of a calculated size.
* Conversely, if the change exceeds **baseSellThreshold** (default +5%), it executes a sell.

Bought lots are recorded in a per‑coin grid array, and the cost basis is recomputed as the weighted average of all holdings. Locked profit (20% by default) is withheld in a separate reserve, ensuring incremental cash preservation.

**Configuration Variables:**

* **baseBuyThreshold** (–0.5%): Trigger level for initiating a buy when the market dips below the prior tick.
* **baseSellThreshold** (+5%): Trigger level for initiating a sell when the market rallies above the prior tick.
* **maxTradePercent** (50%): Caps the maximum USD allocation per trade relative to available cash.
* **profitLockPercent** (20%): Percentage of each realized profit reserved (locked) and excluded from further trading.
* **minTradeAmount** (0.01 USD): Floor for the USD size of any trade to ensure meaningful order sizes.
* **cashReservePercent** (15%): Portion of cash never deployed, maintaining a liquidity buffer.
* **checkInterval** (30s): Polling frequency for price updates.
* **grid behavior:** Buys are appended to the grid array; sells consume the oldest lots (FIFO) and adjust holdings.

**Moderate Retain Mode (v2.0)**

*Building on v1.0, adds risk controls and dynamic thresholding.*

**Detailed Description:**

* Enforces daily caps on buys, profit‑sells, and stop‑loss sells to prevent overtrading.
* Calculates an Average True Range (ATR) over the last 14 ticks. When ATR exceeds fixed thresholds, trades use ATR‑derived thresholds; otherwise, they fall back to base thresholds.
* Implements a stop‑loss mechanism (price falls 30% below cost basis → market sell).
* Computes a minimum profit per transaction as dailyProfitTarget / sellLimit, ensuring each sell contributes toward the daily goal.

**Configuration Variables (adds to v1.0):**

* **buyLimit** (22 trades/day)
* **sellLimit** (23 trades/day)
* **stopLossLimit** (5 trades/day)
* **stopLossPercent** (–30%)
* **dailyProfitTarget** (configurable USD)
* **atrLookbackPeriod** (14 ticks)
* **gridLevels** (5 levels)
* **defaultSlippage** (2%)

**Moderate Retain Mode (v3.0)**

*Refines v2.0 with volatility‑adapted thresholds and trend confirmations.*

**Detailed Description:**

* Shortens ATR lookback to 7 ticks and sets dynamic thresholds = ±ATR when ATR > base thresholds.
* Requires 2‑of‑3 tick majority confirmation before executing trades, filtering false breakouts.
* Employs three grid levels for staggered entries/exits, preserving weighted cost basis integrity.

**Configuration Variables (v3.0 specifics):**

* **atrLookbackPeriod**: 7 ticks
* **dynamicBuyThreshold / dynamicSellThreshold**: Derived from ATR
* **trendConfirmation**: 2‑of‑3 tick rule
* **gridLevels**: 3 tiers

**Moderate Retain Mode (v4.0)**

*Relaxes entry criteria for deeper pullbacks while maintaining disciplined exits and confirmations.*

**Detailed Description:**

* Retains v3.0’s ATR‑based thresholds, 2‑of‑3 confirmations, and grid slicing.
* **Flat Profit Exit:** Immediately sells any position at +5% over cost basis, regardless of ATR or grid level.
* **24h Pullback Entry:** Buys when current price is ≥10% below the 24h average price (computed from stored tick history).

**Configuration Variables (v4.0 specifics):**

* **flatSellThreshold** (+5%)
* **pullbackPct** (–10%)
* **recent24h array:** Maintains (price, timestamp) for 24h‑average calculation

**Simple Buy Low/Sell High (v1.1)**

*Streamlined momentum strategy with cost‑basis gating.*

**Detailed Description:**

* **Buy Trigger:** Executes when the price dips at least **baseBuyThreshold** below the coin’s costBasis on a single tick.
* **Sell Trigger:** Executes when the price rises at least **baseSellThreshold** above costBasis on a single tick.
* Trades flow through the shared execution engine: grid array updates, cost‑basis recomputed after buys, FIFO selling of lots, profit recording, and slippage applied.

**Customizing Thresholds**

* To use **2%** thresholds instead of defaults, set:
* baseBuyThreshold = -0.02; // –2%
* baseSellThreshold = 0.02; // +2%
* **Why 2%?** A 2% threshold filters out noise from small, random price fluctuations and ensures trades capture more substantial moves, improving signal‑to‑noise ratio.

**Configuration Variables (v1.1 specifics):**

* **baseBuyThreshold** (default –0.5%)
* **baseSellThreshold** (default +5%)
* **maxTradePercent** (25%): Caps USD allocation per trade relative to available cash to limit exposure on each entry.
* Shares sizing, slippage, and limit settings (minTradeAmount, buyLimit, sellLimit, etc.) with the grid engine.

**Shared Execution Engine**

**Responsibilities:**

* **Buy Execution:** Allocates USD ≤ maxTradePercent of available cash (respecting minTradeAmount), applies slippage, appends new lot to grid[], and updates costBasis.
* **Sell Execution:** Sells FIFO from grid[], calculates realized profit, locks a percentage via profitLockPercent, updates cash, and holdings.
* **Limit Enforcement:** Monitors daily buy/sell/stop‑loss counters; resets in demo mode on start and every 24h in production.
* **Operation:** Polls prices every checkInterval (default 30s) and logs values with priceDecimalPlaces precision.

*This document reflects all current strategy versions and updates to Simple Buy Low/Sell High v1.1, including threshold customization and trade sizing controls.*