Real-Time Options Trading Engine – Live Execution Demonstration

An illustrative walkthrough of how the engine detects signals, selects strikes, applies risk rules, and executes trades.

This demo uses sample data and mock visuals. No proprietary strategy logic or real trading information is shown.

Market Data & Signal Detection

1. Live Market Feed → Signal Detection

The engine continuously listens to real-time tick data and Greeks feeds through the Market Data Processor. When a valid breakout or reversal condition forms, the Signal Engine marks it as a **trade opportunity**. The engine identifies a potential reversal pattern when price retests a key support level and shows rejection. This following image (fig1.1) illustrates a sample reversal setup (mock example for demonstration only).

Fig 1.1: Signal Detected Here (Example)

Strike Selection Snapshot

2.Strike Selection Logic (Illustration)

The Strike Selector continuously evaluates nearby CE/PE strikes using simplified scoring based on Delta, Gamma, IV, and liquidity, theta. The optimal scoring strike is chosen for execution and automatically extract Target SL for that particular strike price. User can select suitable strike price base on market condition if needed.

Strike Price	Spot Price	Call LTP	Call Delta	Call SL Diff	Put LTP	Put Delta	Put SL Diff	
24200.0	24655.6	455.0	1.0	30.0	1.2	-0.02	0.37	
24250.0	24655.6	407.7	0.99	29.8	1.2	-0.02	0.44	
24300.0	24655.6	356.75	1.0	30.0	1.4	-0.02	0.53	
24350.0	24655.6	307.2	1.0	30.0	1.8	-0.03	0.69	
24400.0	24655.6	259.7	0.99	29.75	2.5	-0.04	0.97	
24450.0	24655.6	210.0	0.95	28.18	3.7	-0.06	1.44	
24500.0	24655.6	161.4	0.91	26.75	5.95	-0.1	2.4	
24550.0	24655.6	116.7	0.84	24.3	9.75	-0.17	3.99	
24600.0	24655.6	73.5	0.72	20.14	17.95	-0.28	6.96	
24650.0	24655.6	39.25	0.53	14.04	33.25	-0.47	12.02	ATM
24700.0	24655.6	20.95	0.33	8.28	65.05	-0.67	18.35	
24750.0	24655.6	10.9	0.19	4.52	105.15	-0.8	22.9	
24800.0	24655.6	5.85	0.11	2.49	150.05	-0.88	25.63	
24850.0	24655.6	3.2	0.06	1.35	196.25	-0.93	27.48	
24900.0	24655.6	1.75	0.03	0.73	245.0	-0.95	28.06	
24950.0	24655.6	1.2	0.02	0.46	295.2	-0.96	28.61	
25000.0	24655.6	0.9	0.02	0.34	345.0	-0.95	28.31	
25050.0	24655.6	0.8	0.01	0.29	396.65	-0.96	28.5	
25100.0	24655.6	0.65	0.01	0.28	445.55	-0.97	28.89	
25150.0	24655.6	0.7	0.01	0.25	499.85	-0.94	28.14	

Fig 1.2: Strike Selector evaluates CE/PE chain using Greeks + IV and picks **24650 CE** as the optimal entry strike price(example).

Risk Engine Calculation

3. Risk & Position Sizing (Example)

For the selected strike, the Risk Engine calculates:

- Position size (based on capital %)
- RR-based Target Price
- Max-loss safeguards
- PNL base re-entry capital allocation

After a valid signal is detected, the system evaluates CE/PE strikes, runs the Risk Engine and get SL and Target, and automatically derives Position Size for the trade

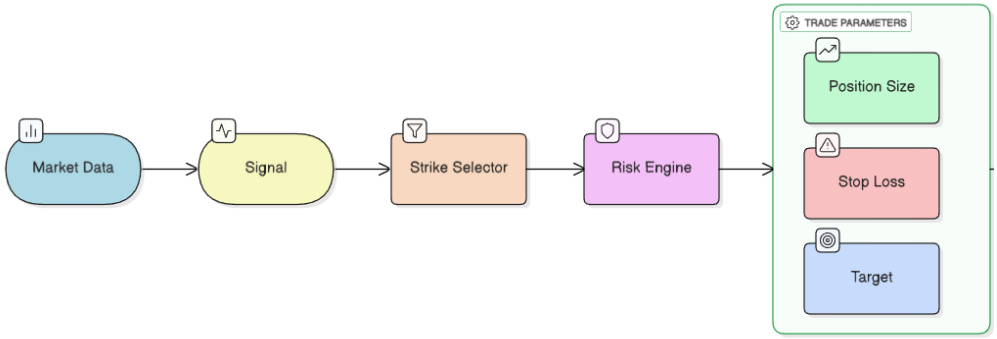


Fig 1.3: Trade parameter generation flow

Execution Layer

4. Automated Execution

The Execution Layer places the order through the Broker API using predefined settings such, BO/TSL, and validation. The slicing of iceberg order is done in Risk Engine Calculation and place multiple small single orders at optimal time and volume intervals.

Safety Framework in Action

5.Safety & Discipline Controls

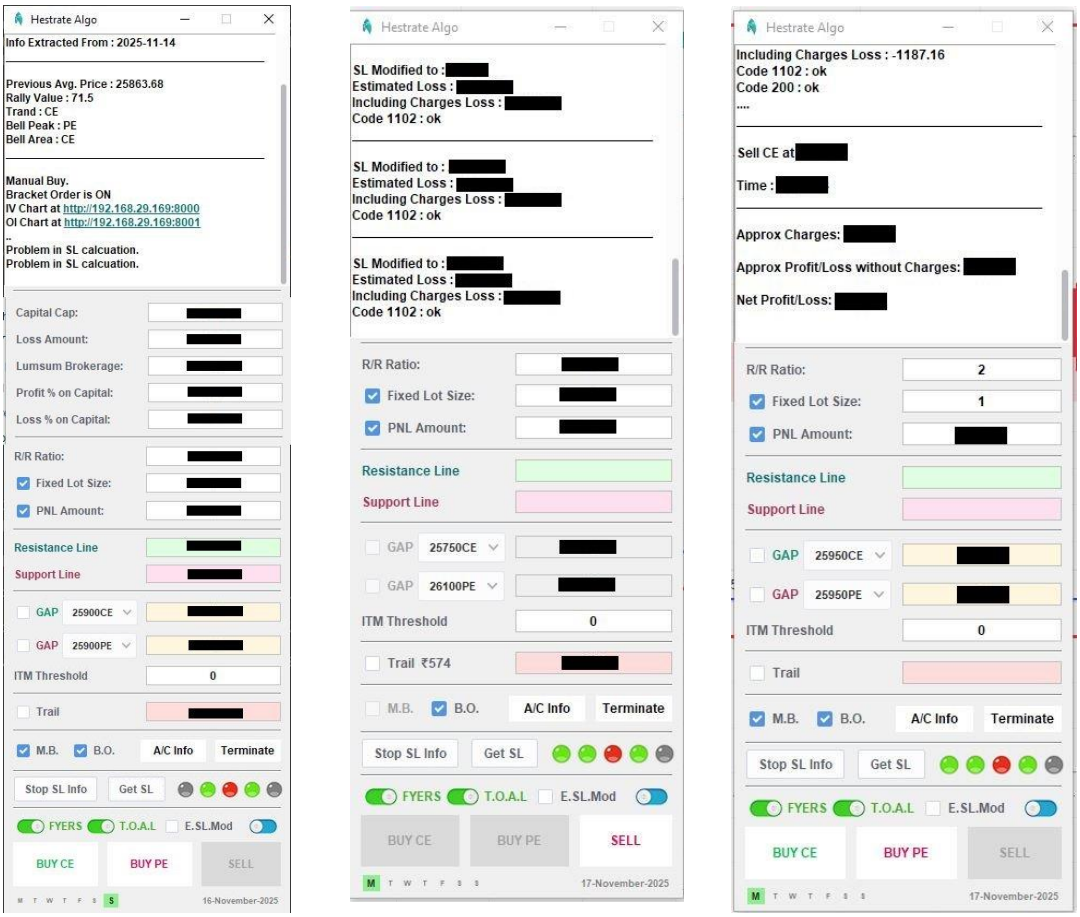
The Safety Framework prevents emotional overrides by enforcing:

- Stop-loss integrity
- Daily max-loss protection
- Lockout in extreme conditions
- Reduce capital optimally if one trade book loss

Logging & GUI Updates

6. Logging & Monitoring

All engine actions are logged and reflected in the GUI for transparency.



a. b. c.

Fig 1.4: (a.) The software automatically detects configuration issues and reports them in the GUI, while successfully validating and assigning all required trade parameters. (b The GUI updates immediately when the stop-loss (SL) is modified. (c.) After the trade is completed, the profit/loss is displayed in the dashboard.

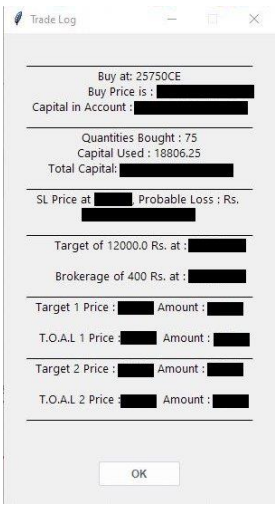


Fig 1.5: Trade Log immediate after Trade is taken confirmation

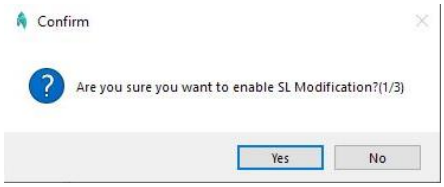


Fig 1.6: SL modification prevention

Conclusion

Summary of the Demonstration

This demonstration shows how the trading engine autonomously:

- Reads real-time market data
- Detects high-quality signals
- Selects the optimal strike
- Applies dynamic risk management
- Executes trades automatically
- Updates logs and GUI in real-time

All examples shown in this document are mock illustrations and do not reflect proprietary trading logic.
