Overview:

The strategy involves initiating a short strangle position at a specific time during the trading day by selling an OTM Call and an OTM Put on the NIFTY index, with both options equidistant from the ATM strike. Each option has a fixed stop loss. The trade exits either on SL hit or at a defined exit time, whichever comes first.

Data Inputs:

- Spot Data: Nifty spot price 1-minute candle data.
- Call Option Data: CE options 1-minute candle data with timestamp and strike.
- Put Option Data: PE options 1-minute candle data with timestamp and strike.

Preprocessing:

- Convert timestamp to datetime.
- Extract date from the timestamp to filter daily data easily.

Parameters:

- entry_time: 13:00:00 (when the strangle is initiated)
- exit_time: 15:00:00 (final trade exit time if SL is not hit)
- quantity: 25 (lot size)
- sl_pct: 0.30 (30% stop loss per option)

Strategy Logic:

1. Daily Loop: For each unique trading day in the spot data:
   - Skip the day if entry timestamp doesn't exist.
   - Get the ATM spot price rounded to nearest 50.
   - CE Strike = ATM + 100, PE Strike = ATM - 100.
2. Option Price Selection:
   - Get 1-minute data for selected CE and PE strikes.
   - Select entry price at entry_time.
   - Set SL price = entry price * (1 + sl_pct).
3. Intraday Monitoring:
   - Loop through all timestamps between entry and exit.
   - If CE high crosses SL, record SL hit, exit CE, and move PE SL to cost.
   - If PE high crosses SL, record SL hit, exit PE, and move CE SL to cost.
   - If both options hit SL, break the loop.
4. Exit Handling:
   - If option is still open by exit_time, exit at that time's close price.
5. Trade Recording:
   - For each option, log:
     - Key (entry timestamp), Exit time, Symbol, Entry/Exit Price, P&L, Quantity
     - Exit Type: "stoploss hit" or "expiry over"

Risk Management Steps:
1. Percentage Based Stop Loss for both the options
2. If one of the two options hits stop loss, we tighten the stop loss of the other option by making stop loss equal to the buying price

Output:

- Trade Log CSV: All trades are saved with the above fields.
- Filename: short_strangle_trade_log.csv
- Added visualization (PnL, drawdown).

Cumulative PnL Over Time

Drawdown Over Time