**Leveraged Trading**

**Leveraged Trading** refers to a trading approach that allows traders to borrow funds to increase the size of their positions beyond what they could afford using only their capital. By leveraging borrowed money, traders can amplify their potential returns on investments. However, it also significantly increases the risk of losses, potentially exceeding the initial capital invested.

***Requirements :***

**1. Market Data**

* **Price Data**: Open, High, Low, Close (OHLC) prices for the asset.
* **Volume**: Total trading volume at each time interval.
* **Bid-Ask Spread**: Difference between the bid and ask price (important for liquidity).
* **Volatility**: Historical and implied volatility metrics.
* **Timeframes**: Include data across multiple intervals (e.g., 1-minute, 5-minute, hourly, daily).

**2. Technical Indicators**

* **Trend Indicators**:
  + Moving Averages (SMA, EMA).
  + MACD (Moving Average Convergence Divergence).
  + ADX (Average Directional Index).
* **Momentum Indicators**:
  + RSI (Relative Strength Index).
  + Stochastic Oscillator.
  + Rate of Change (ROC).
* **Volume Indicators**:
  + On-Balance Volume (OBV).
  + Volume Weighted Average Price (VWAP).
* **Support/Resistance Levels**:
  + Pivot Points.
  + Fibonacci Retracement Levels.
* **Volatility Indicators**:
  + Bollinger Bands.
  + ATR (Average True Range).

**3. Fundamental Data**

* **News Sentiment**:
  + Market news and social media sentiment scores (e.g., bullish/bearish signals).
* **Economic Indicators**:
  + Interest rates, inflation data, and GDP growth.
* **Earnings Reports** (for stocks): Revenue, EPS, guidance updates.
* **Macro Events**: Political and regulatory changes.

**4. Leverage-Specific Metrics**

* **Leverage Ratio**: The multiplier used for the trade.
* **Margin Level**: Percentage of equity available for trading.
* **Rollover Costs**: Swap fees or overnight charges.
* **Liquidation Threshold**: Margin level at which the position will be liquidated.

**5. Risk Management Metrics**

* **Stop-Loss and Take-Profit Levels**: Distance (in percentage or pips) from entry price.
* **Drawdown**: Maximum loss from the peak of the portfolio.
* **Risk-Reward Ratio**: Predetermined ratio for each trade.
* **Exposure**: Amount of capital at risk.

**6. External Features**

* **Market Correlations**:
  + Correlation with other assets (e.g., S&P 500, Gold, Bitcoin).
* **Economic Calendar**:
  + Major events like interest rate decisions, non-farm payrolls, or earnings releases.
* **Sentiment Analysis**:
  + Bullish/bearish sentiment derived from news, social media, or analyst reports.

**7. Derived Features**

* **Candle Patterns**:
  + Identify common patterns like Doji, Hammer, or Engulfing Candles.
* **Moving Averages Crossovers**:
  + E.g., 50-day SMA crossing above the 200-day SMA (Golden Cross).
* **Breakout Levels**:
  + Recent highs/lows or Bollinger Band breakouts.

**A. Entry Decision**

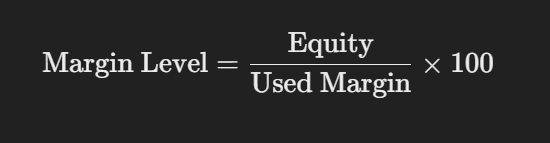
* **Trend Confirmation**:
  + Use moving averages or ADX to identify uptrends or downtrends.
  + Example: If the 50-day SMA > 200-day SMA and ADX > 25, the trend is bullish.
* **Momentum Validation**:
  + Check RSI or Stochastic Oscillator for oversold/overbought levels.
  + Example: Enter a buy position if RSI < 30 in an uptrend.
* **Volume Support**:
  + Ensure volume confirms price movement.
  + Example: Enter if breakout volume > 20-day average volume.
* **Risk-Reward Assessment**:
  + Verify that the trade offers an acceptable risk-reward ratio (e.g., 3:1).

**B. Exit Decision**

* **Stop-Loss Triggers**:
  + Exit if the price moves against you by a predefined percentage.
  + Example: Place a stop-loss at 2% below entry for a long position.
* **Take-Profit Levels**:
  + Use Fibonacci retracement levels or prior resistance levels.
  + Example: Exit if the price reaches 1.618 Fibonacci extension.
* **Reversal Signals**:
  + Exit on bearish divergence in RSI or MACD.
  + Example: Sell if RSI starts falling from overbought levels.

**C. Hold Decision**

* **Trend Continuation**:
  + If indicators suggest the trend remains strong, maintain the position.
  + Example: Hold if the price remains above the 20-day EMA in an uptrend.
* **Volume Consistency**:
  + Continue holding if volume supports the trend.
* **Volatility Consideration**:
  + Use ATR to determine if the current movement aligns with typical price action.
* For a leveraged trading strategy, it might be calculated based on the available funds in your account compared to the funds used to open a position.



* The unrealized PnL (Profit and Loss) is the profit or loss from an open position that hasn't been closed yet. It's calculated based on the difference between the entry price and the current price, taking into account the position size.

