**Implementing EWMA Volatility in Our Trading Algorithm**

1. **Objective**: Enhance our trading algorithm by incorporating Exponentially Weighted Moving Average (EWMA) volatility to dynamically adjust position sizing and control risk.
2. **EWMA Volatility Formula**:
   * EWMA(t) = a \* x(t) + (1-a) \* EWMA(t-1)
   * Where:
     + EWMA(t) = moving average at time t
     + a = degree of mixing parameter value between 0 and 1
     + x(t) = value of signal x at time t (daily returns in our case)
3. **Implementation in Our Algorithm**:
   * Calculate daily returns of the stock using historical data (past 84 days)
   * Define lambda\_ = 0.9, so a (alpha) = 1 - lambda\_ = 0.1
   * Compute EWMA volatility using the ewm() function with alpha=0.1
   * Calculate expanding window average of historical 20-day volatility as target volatility
   * Adjust position size based on the ratio of target volatility to EWMA volatility (leverage)
   * Limit maximum leverage to 2 to control risk exposure
4. **Outcome**: By incorporating EWMA volatility, our trading algorithm can now dynamically adjust position sizes based on the changing market conditions, helping to better manage risk and improve overall performance.