Score in the Analyze Tab output is used to sort for the best Option. Here is how it is calculated.

The "Score" column in your options data is calculated in the analyze route of the provided code. It represents a composite metric used to rank options based on their attractiveness, combining several factors. Here's a concise summary of how it's computed:

For each option in the options DataFrame (options_df), the score is calculated as follows:

1. **Inputs**:
    - prob: The probability of capturing 60% of the premium, calculated by the probability_60_percent_premium function, which uses the Black-Scholes model and adjusts for delta.
    - premium_weight: The option's premium divided by the current stock price (premium / S), normalizing the premium relative to the stock price.
    - delta_penalty: A penalty term based on the option's delta, calculated as 1 / (1 + 5 * delta) for calls or 1 / (1 + 5 * abs(delta)) for puts, which reduces the score for options with higher delta (less favorable risk/reward).
    - strike_adjustment: A factor adjusting for the option's strike price relative to the stock price, calculated as 1 - 0.1 * cmf * (K - S) / S for calls or 1 + 0.1 * cmf * (S - K) / S for puts, where cmf is the Chaikin Money Flow, K is the strike price, and S is the current stock price. This adjusts the score based on the direction and magnitude of the stock's momentum.
    - T: Time to expiration in years (days_to_exp / 365.0).
2. **Formula**: score=T+0.01prob×premium_weight×delta_penalty×strike_adjustment
    - The numerator combines the probability, premium weight, delta penalty, and strike adjustment to evaluate the option's potential profitability and risk.
    - The denominator (T + 0.01) penalizes longer-dated options to favor those with shorter expirations, with a small constant (0.01) to avoid division by zero for very short expirations.
3. **Purpose**:
    - The score balances the likelihood of profit (prob), the premium's value relative to the stock price (premium_weight), the risk associated with delta (delta_penalty), and the impact of the stock's momentum on the strike price (strike_adjustment).
    - Dividing by T + 0.01 prioritizes options that achieve these characteristics in a shorter time frame, as they typically offer better annualized returns.

This score is used to rank options, with the top 20 calls and puts (sorted by score in descending order) returned in the analyze route's response.