Tick-Majority - Product Idea

Product Description

A New Way to Trade Market Direction

What is it?

Predict whether the majority of upcoming price ticks will move in your chosen direction. Unlike traditional binary options that depend on final price levels, Tick-Majority rewards you for correctly forecasting market momentum.

How it works:

- Choose your contract duration (5-15 ticks)
- Set your minimum target (e.g., "at least 6 up-ticks out of 8 move up")
- Place your stake
- Win if the market moves your way for the majority of ticks
- Perfect for traders to capitalize on short-term market momentum

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Commission Application

- **Contract Price (Fair Probability):** P
- **Commission (as absolute flat value):** H
- **Client Stake:** S
- **Client chooses:**
  - Number of ticks (n), e.g. 5–15
  - Minimum up-ticks (k), e.g. 1–n

Calculation of Number of Contracts Purchased:

$$\text{Contracts} = \frac{S}{P + H}$$

Payoff: If the event happens (≥k up in n), the client's payout is number of contracts × $1 per contract (minus any fees).

Example Calculation

Suppose:

- $n = 8, k = 6$
- Calculated fair price (binomial probability): $P = 0.15$
- Commission: add 0.05 (flat value)
- Stake: $10

Contracts:

$$\text{Contracts} = \frac{10}{0.15 + 0.05} = \frac{10}{0.20} = 50$$

If event occurs, client receives: $50 \times \$1 = \$50$ (on a $10 stake; effective payout 5:1).

Proof-of-Concept UI

Tick-Majority

- **Duration:** [Slider: 5–15 ticks]
- **Minimum up-ticks:** [Slider: 1–chosen duration]
- **Stake:** [Input $]
- **Commission:** [Input flat value]

Button: **[Place Trade]**

Below, show:

- **Contract price (fair):** 0.15
- **Commission:** 0.05
- **Total price per contract:** 0.20
- **Contracts purchased:** 50.0 contracts
- **Potential payout:** $50.00

Summary Statement (dynamic):
"For a $10 stake, if there are at least 6 up-ticks in the next 8 ticks, you win $50.00."

Implementation Notes

- **Up-tick Definition:** An up-tick is counted when a tick's price is higher than the *previous* tick's price (not compared to the contract start price).
- **Real-time Updates:** Contract progress, up-tick count, and potential payout are updated in real-time.

Backend/Formula

```python
def tick_majority_contracts(stake, n, k, commission, p=0.5):
    from math import comb
    # Calculate fair price (binomial probability)
    fair_price = sum(comb(n, i) * (p**i) * ((1-p)**(n-i)) for i in range(k, n+1))
    # Total price per contract (additive commission)
    total_price = fair_price + commission
    # Number of contracts
    contracts = stake / total_price
    return contracts, fair_price, commission, total_price
```