Overview of the Platform

This platform enables users to create a Smart Contract for betting on two possible outcomes. The contract creator is tasked with:

- Setting the Odds: These determine the probability of each event and, consequently, the payout ratio. For instance, if Event A is three times more likely than Event B, the odds would be set at 1/3, reflecting that Event A is more probable and therefore offers a lower payout.
- Managing the Betting Phase: The contract owner decides how long the betting period will last and is also responsible for declaring the winning event, either A or B.
- Determining The Winner or a Tie
- Handling Bets: The platform features a user-friendly interface that allows the contract owner to easily manage and return bets.
- Compensation for the Owner: As a reward for managing the contract, the owner receives a small percentage of the total betting pool, offering more favorable terms compared to traditional betting setups.

Understanding Betting Odds

- Odds in betting are a crucial measure that indicates the probability of an event occurring and consequently, the potential payout. For instance, if Event A has a threefold higher likelihood of happening compared to Event B, the odds would be set at 1/3. This ratio reflects that Event A, being more probable, offers a lower payout compared to Event B.
- To set specific odds, consider the relative likelihood of each event. For example, if you want the odds to favor Event A as half as likely as Event B, you would set the odds at 2/1. This means that the probability of Event A happening is half that of Event B, and if Event A does occur, the payout would be twice the amount that you bet.

Defining the Action Phase

The Action Phase is a critical period in the betting process where all betting activities are locked. During this phase:

- Betting Freeze: No new bets can be placed, and existing bettors cannot withdraw or modify their bets.
- Event Occurrence: This phase coincides with the actual occurrence of the event on which the bets are placed. For instance, if the bet is on a tennis match between two players, the Action Phase is in effect while the match is in progress.
- Role of the Owner: It is the responsibility of the contract owner to conclude the Action Phase. This involves officially ending this phase and declaring the outcome of the event, thereby determining the winner of the bet.

Explaining the Voting Phase

- The Voting Phase commences once the betting period concludes. During this phase, the contract owner has a predefined duration, known as the Action Phase, to decide the outcome of the bet — they must declare either a winner, a loser, or a no contest situation. If, as a bettor, you find yourself disagreeing with the decision made by the contract owner, you have the option to cast a vote expressing your disagreement.

- In the event that a bet garners dissenting votes, it will be reviewed by the team of the platform (insert the company name here). Should the review conclude that the contract owner's decision was incorrect or unfair, their decision will be overridden. Following this, an accurate and fair result will be determined, and the bets will be settled and distributed accordingly based on this revised outcome.

Explanation of Payout Mechanism

The payout process in this platform is designed based on the order in which bets are placed. If a user places a bet on an event through the smart contract, the order of their bet determines both the payout and deduction sequence. Specifically:

- First Come, First Served Basis: The user who bets first on an event will be the first to receive their payout if their chosen event wins. Conversely, in the event of a loss, this user will also be the first to have their bet amount deducted.
- Sequence for Late Bettors: Conversely, a user who places a bet later, closer to the end of the betting window, will find themselves last in the payout queue if their event is victorious. Similarly, in case of a loss, their deduction will occur last.
- This structured payout system ensures a clear and sequential process, correlating the timing of a user's bet with their position in the payout or deduction order.

What Happens If There Is Not Enough Money In A Pot To Pay Everyone Out?

- This was really important to me
- Imagine you and your friends are playing a game where you all bet on which of two teams will win a match. Let's call them Team A and Team B. Everyone who bets on the winning team will win money from the total bets placed on the losing team. Now, here's how the payout works, keeping in mind that the risk-to-reward ratio is the same whether you're paid first or last:

    - The 'Pie' of Money: Think of the total money collected from the losing bets as a big pie. This pie is what will be shared among all the winners.

    - Order of Payment: The winners are paid in the order they placed their bets. It's like standing in line to get a slice of the pie.

    - Determining Slice Size: Each winner's 'slice' of the pie (their payout) is based on how much they bet and the odds of their team winning. So, if you bet more money or your team was less likely to win (making it a riskier bet), you're supposed to get a bigger slice of the pie.

    - Fairness in Payout: Here's the crucial part: whether you're first or last in line, the size of your slice relative to your bet stays consistent. This means the risk-to-reward ratio remains the same.

    - If you're at the front of the line, you get your slice based on the full pie. If the pie is big enough to cover your expected slice, you get the full amount.
    - If you're at the end of the line, your slice size is still calculated the same way, but it's now based on what's left of the pie. If the pie has gotten smaller because earlier people took their slices, your slice will be smaller too. However, the key is that the proportion of your slice to your original bet remains consistent.
    - Risk is Equal for Everyone: Whether you're first or last to be paid, the proportion of the money you get compared to what you risked (your bet) is the same. It's like agreeing to get a certain percentage of the pie no matter its size when it's your turn. If the pie is large, everyone gets larger slices, but if it's small, everyone's slices shrink proportionally.

    - So, in this game, no matter when you get paid, the principle is the same: the amount you win is proportional to your bet and the remaining money. This ensures that the game is fair for everyone, whether you're first or last in line. It's all about maintaining a consistent relationship between what you risk (your bet) and what you stand to gain (your slice of the pie).

Proof: Everyone Has the Same Risk/Reward Ratio in the Betting System

Definitions:

1. **Bet Amount (B):** The amount of money each person bets.
2. **Odds (O):** The odds given for the bet, expressed as a ratio (e.g., 2:1 odds written as 2).
3. **Potential Payout (P):** The amount a person expects to win, calculated based on their bet and the odds.

Basic Formula:

The potential payout (P) for each bet is calculated as follows:

$$P = B \times O$$

Risk/Reward Ratio:

The risk/reward ratio is the relationship between the amount risked (B) and the potential reward (P).

Proving the Same Risk/Reward for Everyone:

1. **For the First Person:**
   - Bet: B_1
   - Odds: O_1
   - Potential Payout: $P_1 = B_1 \times O_1$
   - Risk/Reward Ratio: $\frac{B_1}{P_1} = \frac{1}{O_1}$
2. **For the Last Person:**
   - Bet: B_n
   - Odds: O_n
   - Potential Payout: $P_n = B_n \times O_n$
   - Risk/Reward Ratio: $\frac{B_n}{P_n} = \frac{1}{O_n}$

Conclusion:

- The risk/reward ratio for each bettor is determined solely by the odds of their bet.
- Since the bet amount (B) cancels out in the risk/reward ratio calculation, the position in the payout order (first, last, or middle) does not affect this ratio.
- Therefore, each bettor in the system, regardless of their position in the payout order, has the same risk/reward ratio. This demonstrates the fairness of the payout system in terms of risk and reward.

Guide to Deploying a Betting Smart Contract as the Owner

1. Contract Deployment:
    - Access the “Deploy A Contract” page at “Path/To/Page.”
    - Fill in all necessary details of the Betting Contract.
    - Pay the required small Ethereum fee for deployment.
2. Time Input Significance:
    - These inputs determine the betting period duration. For instance, if it takes four days to identify a winner, set the betting time to four days.
    - In cases where there's a specific event duration, such as a one-hour game in a four-day bet, adjust the time to 3 days and 23 hours.
3. Voting Duration for Users:
    - Bettors have a 24-hour window to vote and express disagreement with the outcome after the decision is made.
4. Defining the Action Phase:
    - This is the period set for determining the winning event and selecting the winning side (either A or B).
    - Adjust the Action Phase duration to suit the event's timeframe, such as setting it to 1 hour for a 30-minute game.
5. Choosing an Image:
    - Select an image that is eye-catching and relevant to the bet.
6. Setting Betting Odds:
    - Odds represent the probability of each event and their respective payouts. For example, if Event A is thrice as likely as Event B, set odds at 1/3.
    - Adjust odds based on relative event probabilities, like 2/1 odds if Event A is half as likely as Event B.
7. Payout Calculation:
    - For odds X/Y, the payout for Event A is calculated as (Bet * X)/Y, and for Event B, it's (Bet * Y)/X.
8. Market Title Creation:
    - Create a compelling title that quickly communicates the essence of the bet, like “C9 vs SKT 3/1 Odds!!”
9. Detailing Conditions:
    - Clearly state the requirements for an event to be declared as the winner or loser.
    - Include sources for outcome verification, e.g., “https://lol.fandom.com/wiki/2023_Season_World_Championship.”
10. Selecting a Category:
    - Choose from available categories to facilitate easy discovery of your contract by other users.
11. Using Tags:
    - Implement tags to help users locate your Betting Contract, for example, “SKT, Faker, 2023, Worlds,…”
    - There is a limit of 20 tags per contract.