I'm currently building one of these, and@monteluna asked me what the optimum strategy is- for example, if I think that X outcome has a 20% chance of winning, under what conditions should I be adding money to the system? And I realised that I had no idea what the answer is.

Here is how it works. There is one NFT for each outcome of an event. Let's say, the event is the US Presidential Election, and there are two outcomes- Trump or Biden [let's assume Biden gets the nomination]. So there's a Trump NFT and a Biden NFT.

Anyone is free to 'rent' each token at any time, by stating a daily rental price and submitting Dai to fund the rent. Anyone else is free to take the token off them at any time, if they quote a higher price. If the current owner's deposit runs out, it returns to the previous owner, at the previous price. If there are no previous owners, the token price drops to zero and is unowned.

So this is effectively a Harberger Tax where the 'tax' is 100% a day. The concept of 'daily rent' is just a way of abstracting this. There is one fundamental difference to normal Harberger rules- when you wish to purchase a token, you do NOT pay anything to the current owner. Arguably, this means that the tax rate is infinite, depending on how you define such things.

Anyway. The total rent paid among both tokens is held by the contract, at the end of the competition, it is paid out to all the owners of the winning token, in proportion to how long they owned it. If 1000 Dai is paid in rent among both tokens, and I own the Trump token for 25% of the total time, and Trump wins, I would win 250 Dai.

This is the question: assume I think trump has a 50% chance of winning. Under what conditions should I rent the Trump token? Perhaps, the Trump token is currently being rented for 25 Dai a day, with the Biden token being rented for 75 Dai a day. These translate to implied odds of a 25% chance of a Trump victory- so it would seem that, if I think that Trump has a 50% chance of winning, I should rent the Trump token at the lowest possible price until the implied odds rise to 50%.

But it is not as simple as that, because it ignores a) the total rent already held by the contract and b) how long I am likely to own the Trump token for.

Anyone have any ideas what a slightly better, if not optimum strategy would be?