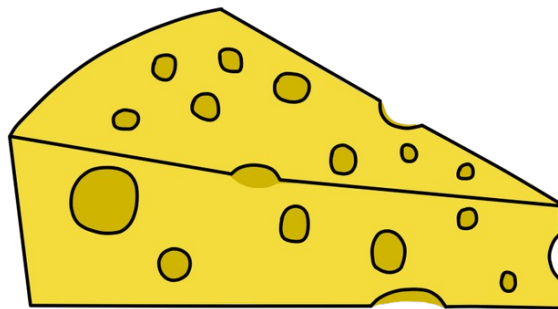# Cheeze of Insight

"I'll so offend to make offense a skill,
Redeeming the time when [Wizards]think least I
will." — Shakespearean Wizard

TECHNICAL PROPOSAL: 1.0
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1 ABSTRACT

As a team built from players of Satoshi's Treasure we're uniquely aware of the role statistics can have on gameplay and player psychology. Enter *Cheese of Insight*. The *Cheeze of Insight* DApp is a web application and browser extension designed to enrich player psychology in *Cheeze Wizards* gameplay by providing methods for realistic and test battle predictions, and a module for doing deep analytics of battle history. More specifically, *The Cheese of Insight* DApp approaches player psychology using a four-pronged method that includes: an **Analytics** component, a **Smart Contracts** component, a **Battle Predictions** component, and a **Secondary Markets** component.

- **Analytics Component:**

    1) The Analytics Component and its UI, provides players of Cheeze Wizards with a frontend for analyzing individual Wizards and tournament battle history.

- **Smart Contracts Component:**

    1) The **Smart Contracts** component adds value to the *Cheeze Wizards* platform by providing **Battle Predictions** and a **Secondary Market** with a model for making hypothetical guesses about outcomes of realistic or hypothetical Duels.
    2) This is possible because our modified Wizards contract can "re-mint" specific Mainnet Wizards by importing them into our own contract which then allows players to battle replicated versions of their Mainnet Wizards in a testnet environement against replicated versions of other Mainnet Wizards of their choosing.

- **Battle Predictions Component:**

    1) The **Battle Predictions** component is included in both **Offline** and **Online** component layers.

    2) In the **Offline Layer**, players can play their Wizards in test matches against replicated versions of Mainnet Wizards.

    3) When playing a test match, the player invoking the Duel chooses whether they wish to dictate their opponent's turn commitments, or instead by a super smart (and super dumb) AI player. The AI player we've created, analyzes a Wizard's match history, and attempts to find patterns. Like a fine cheese, our AI matures with age, so our AI's predictions become more trustworthy as the tournament progresses.

    4) In the **Online Layer**, analytics collected from tournament battle history is used by our AI to create predictions about outcomes of Duels which are pending outcomes but not yet resolved.

5) When the tournament enters Phase III, the live Duel predictions created by our AI will be used in to create LONG and SHORT weightings for the **Secondary Markets** component.

6) Since the reliability of our AI's match predictions is in many ways proportional to the data available from a tournament's match history, we can say our AI begins a tournament "dumb" and ends the tournament "smart".

- **Secondary Markets Component:**

1) Decentralized prediction markets can be used to generate sets of tokens that represent a financial stake in the outcomes of any event.

2) By combining the *0x Protocol* with an *Augur* prediction market and open source code from *Veil*, once phase Phase III of the tournament has been reached our platform will automatically launch a prediction market on *Augur* that emits LONG and SHORT predictions for the outcome of every pending Duel.

3) When Blue Mold enters the tournament and a Wizards ability to compete is at stake, the prediction market launched on *Augur* allows anyone following the tournament to place either LONG or SHORT bets on the outcome of a pending Duel.

4) If a Wizard has challenged another Wizard but the Duel is not resolved during the dueling window for that day, any bets related to the invalid Duel is automatically returned to the orignal better.

5) If a Duel takes in bets, and does resolve during the dueling window, betters who guessed correctly are rewarded in ETH. Betters who guessed incorrectly will lose some, or all, of the ETH placed as their bet.

6) While LONG and SHORT outcomes are defined by Duel outcome, rewards and losses of ETH granted by the prediction market contracts, function more like changes to Wizard power levels. That means rewards and losses are determined by the sum of all 5 Turn outcomes.

7) Example, Drew bets 1 ETH on a LONG prediction and that Wizard #1614 will win a pending Duel against Wizard #1977. Once Turn commitments are revealed, it's discovered Wizard #1614 won 3 of the 5 Turns in the Duel, and Wizard #1977 has won 2 out of 5 turns. In this sceneraio Drew's account is sent back his original bet plus an increase of 3/5's of an ETH (1.6 ETH awarded). Similarly, a user who had bet 1 ETH on a SHORT prediction for Wizard #1614 to increase in power level, is sent back their original bet minus a decrease of 3/5;s of an ETH (0.4 ETH awarded).

8) As the Blue Mold begins to show its effects, this **Secondary Prediction Market** will become a place where players who know longer have Wizards in the tournament ("rind-in-the-game") can continue to follow and participate in the game.

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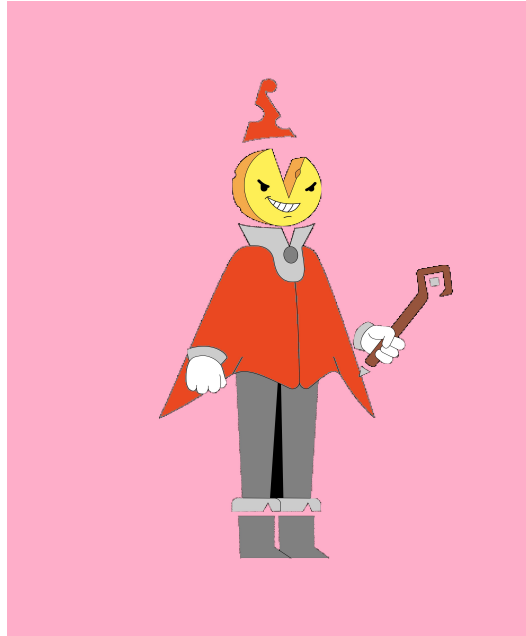
2   TERMINOLOGY

Layers:

The terms "Online" and "Offline Layer" refer to states of Duel availablity. Components which rely on the Dueling window are part of the "Online" or "Real-Time" tournament. Data and analtyics which can be generated and utilized outside of the Dueling window (example: test duels using replicated Wizards), is considered to be part of the offline layer.

Why Have an Offline Layer?

Part of the anticipation and anxiety of competing in *Cheeze Wizards*, revolves around the limited daily window for dueling. Creating a layer for Offline participation and prepartion not only encourages participation but also helps to promote a mind space for the tournament that can be enjoyed outside of dueling hours. Furthermore, the more strategies that players have for preparing for future Duels, the more likely they are to be thinking about *Cheeze Wizards* between Duel windows which reinforces a healthy player culture that will help retain player interest and financial stake in the tournament even after their Wizards have fallen victim and perished to Blue Mold.

Betting:

1. For the purposes of the **Secondary Market** component, "bets" can thought of as either **LONG** or **SHORT**, and regarding a prediction that some Wizard will prevail in a pending Duel against another Wizard. *Augur* prediction markets have two outcome shares and these are unique ERC-20 tokens representing a distinct answer to a market's question (like "LONG" or "SHORT"), which must be transacted as complete sets. Example set: 0.2 ETH LONG, 0.8 SHORT).

Given the above, we can take the terms LONG and SHORT to mean as follows.

LONG BETS:

"Prevail" or expecting an increase in the underlying asset (e.g. you're betting a particular Wizard will prevail in their pending Duel)

SHORT BETS:

"Lose" or expecting a decrease in the underlying asset (e.g. you're betting a particular Wizard will lose in their pending Duel)

COMPLETE SETS:

A perfect factor of 1 ETH transacted as a pair. Another way to think about this transaction is it is like a sliding scale between SHORT and LONG that always balances to 1 ETH.