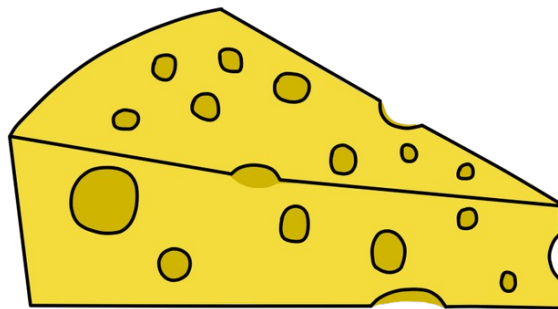


Cheeze of Insight



*"I'll so offend to make offense a skill,
Redeeming the time when **Cheeze 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 *Cheese of Insight* DApp is a web application and browser extension designed to enrich player psychology in *Cheese 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 *Cheese Wizards* with a frontend for analyzing individual Wizards and tournament battle history.

- **Smart Contracts Component:**

- 1) The **Smart Contracts** component adds value to the *Cheese 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 environment against replicated versions of other Mainnet Wizards of their choosing.

- **Battle Predictions Component:**

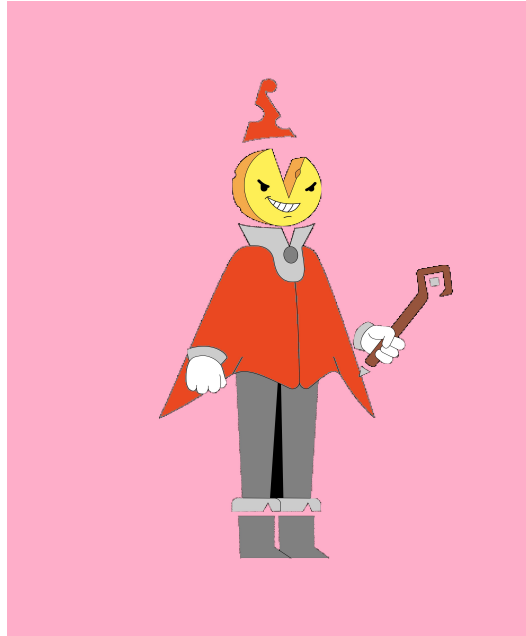
- 1) The **Battle Predictions** component is included in both **Offline** and **Online** component layers.
- 2) In the **Offline Layer**, players can play their Wizards in test matches against replicated versions of Mainnet Wizards.
- 3) When playing a test match, the player invoking the Duel chooses 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 *Ox 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) Using *Ox*, the order book for the prediction market is kept offline to limit gas transactions and both LONG and SHORT tokens are merged into a single order book.
- 4) 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.
- 5) 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 original better.
- 6) 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.
- 7) As the Blue Mold begins to show its effects, this **Secondary Market** will become a place where players who no longer have Wizards in the tournament ("rind-in-the-game") can continue to follow and participate in the game.

"Like a fine cheese, our AI matures with age"



2 TERMINOLOGY

Layers:

The terms "**Online**" and "**Offline**" layer" refer to Duel availability. Components which rely on the Dueling window are part of the "Online" or "Real-Time" tournament integration. However, data and analytics tools which are usefully outside of the Dueling window (example: test duels using replicated Wizards), are considered to be part of the "offline" layer.

Why Have an Offline Layer?

Creating an environment for participation outside of the dueling window promotes a player culture where the tournament remains interactive outside of duels. It also gives summoners the ability to prepare and train their Wizards for future battles.

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 who loses. *Augur* prediction markets have two outcome shares and these are unique ERC-20 tokens representing a distinct answer to a market's question which we can call "LONG" and "SHORT" tokens. LONG and SHORT tokens must be transacted as complete sets that equate to 1 ETH. 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.

ORDER BOOK:

The "order book" can be thought of as the total transactions of a prediction market of a given Duel. Since Augur enables you buy and sell complete sets of shares for ETH. By buying and selling complete sets on behalf of the betting user, the *Cheeze of Insight* smart contract (taken from Veil <https://github.com/veilco/veil-market-creation>) will merge orders for LONG and SHORT tokens into a single order book. Using the *Ox Protocol*, our contract executes trades on behalf of our user base off-chain, which dramatically reduces the overall gas required to power the prediction market. The on-chain transactions that will need to occur are:

1. Initial placement of any LONG or SHORT bet
2. Final settlement of the order book after a particular Duel has resolved and the market is expired