PONZIMON SEASON 2

A Collectible Card Farming Protocol on the Solana Blockchain

"Gotta Farm 'Em All!"

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Ponzimon Protocol Team

ABSTRACT

We present Ponzimon Season 2, a collectible card farming game built on the Solana blockchain that combines strategic card staking, provably fair crash-style games, and on-chain token economics into a competitive play-to-earn experience. Players collect creature cards across seven exponentially-scaled rarity tiers, stake them on upgradeable farm grids to generate proportional hashpower, and compete for shares of a daily token reward pool. Auxiliary game modes — including a crash-style multiplier game (Heists) and a legacy-token spinning mechanism (the Wheel) — provide high-risk, high-reward opportunities and ensure cross-season token utility. All economic transactions are recorded on the Solana blockchain using SPL token standards. This paper formalizes the game mechanics, derives expected values for all stochastic systems, analyzes player strategy equilibria, and describes the security model.

Keywords: blockchain gaming · Solana · SPL tokens · play-to-earn · provably fair · collectible card games · staking · automated market makers · crash games

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1. INTRODUCTION

Ponzimon Season 2 is a collectible card farming game built on the Solana blockchain. Inspired by the creature-collecting genre, Ponzimon Season 2 blends strategic card staking, provably fair crash games, and on-chain token economics into a competitive play-to-earn experience.

Players collect creatures across seven rarity tiers, stake them on upgradeable farm slots to generate hashpower, and compete for a share of a daily token reward pool. Side games — Heists and the Wheel — offer high-risk, high-reward opportunities to multiply holdings or acquire rare cards.

All economic transactions are recorded on-chain and verified on the backend. SPL token transfers and AMM liquidity can be verified independently by players at any time.

2. CORE CONCEPTS

The Ponzimon Season 2 protocol is organized around the following core primitives:

Concept	Description
PONZI Token	Native SPL token (6 decimals) on Solana. Used for slot upgrades, heist bets, and reward payouts.
Cards	Collectible creatures with rarity, color, power, and a unique visual type. The atomic unit of the game.
Farm	A 5×5 grid of 25 slots. Staked cards produce hashpower.
Hashpower	A player's proportional claim on the daily reward pool.
Heists	A crash-style game where players risk tokens for exponential multipliers.
Wheel	A spinning game that accepts legacy season tokens for cards and token rewards.
Seasons	Discrete game periods. Old-season tokens retain utility through the Wheel.

Table 1: Core protocol primitives.

3. TOKEN ECONOMICS

3.1 The PONZI Token

The PONZI token is issued as an SPL Token on the Solana blockchain with 6 decimal places of precision. It serves as the primary medium of exchange within the Ponzimon ecosystem.

3.2 Liquidity Pool

PONZI is tradeable via an **automated market maker (AMM) pool**. Players can swap SOL ↔ PONZI at any time with price determined by the constant-product AMM formula.

3.3 Token Flow

The token economy operates through three principal channels: **Slot Upgrades** (token sink — PONZI is consumed), **Heist Bets** (risk-reward — PONZI is wagered with a 20% house edge), and **Reward Claims** (token faucet — PONZI is distributed proportionally to stakers). SOL enters and exits the system through the AMM liquidity pool.

3.4 Revenue Split (Booster Packs)

Every booster pack purchased with SOL is split as follows:

Destination	Share
Game Treasury	60%
Jackpot Pool	20%
Referral Rewards	20%

Table 2: Booster pack SOL revenue allocation.

4. CARD SYSTEM

4.1 Rarity Tiers & Power

Card power follows an **exponential scaling law**:

$$P(r) = 4^r$$

where r is the rarity level (1 through 7). This exponential structure ensures that higher-rarity cards provide dramatically more hashpower, creating strong incentives for collection and trading.

Rarity	Level r	Power P	Relative
Common	1	4	1×
Uncommon	2	16	4×
Rare	3	64	16×
Double Rare	4	256	64×
Very Rare	5	1,024	256×
Super Rare	6	4,096	1,024×
Mega Rare	7	16,384	4,096×

Table 3: Rarity tiers and power scaling.

> *A single Mega Rare card produces the same hashpower as 4,096 Common cards.*

4.2 Card Properties

Each card is characterized by four attributes: **Rarity** (one of seven tiers determining power), **Color** (Red, Blue, Green, Yellow, or Purple — cosmetic only), **Card Type** (a unique visual creature ID drawn from 191 total creatures), and **Power** (hashpower contribution when staked).

4.3 Rarity Probability Distribution

Cards drawn from booster packs follow the probability distribution given in Table 4.

Rarity	Probability
Common	60.00%
Uncommon	25.90%
Rare	10.00%
Double Rare	3.00%
Very Rare	1.00%
Super Rare	0.09%
Mega Rare	0.01%

Table 4: Booster pack rarity probabilities.

4.4 Expected Power per Booster Card

The expected hashpower contribution of a single randomly drawn booster card is computed as:

$$E[P] = \Sigma_{r=1}^{7} p_r \cdot 4^r$$

Evaluating: E[P] = (0.60 × 4) + (0.259 × 16) + (0.10 × 64) + (0.03 × 256) + (0.01 × 1024) + (0.0009 × 4096) + (0.0001 × 16384) ≈ **36.19**.

Each booster pack contains 5 cards, yielding an expected hashpower per pack of $E[P_{pack}] = 5 \times 36.19 \approx$ **180.95**.

5. THE FARM — STAKING & HASHPOWER

5.1 Farm Structure

Every player owns a **5×5 farm grid** with 25 slots. Each slot has a level (0–7) that determines the maximum rarity card it can hold. New players start with 2 unlocked slots at level 1.

Slot Level	Max Card Rarity	Max Power
0	Locked	—
1	Common	4
2	Uncommon	16
3	Rare	64
4	Double Rare	256
5	Very Rare	1,024
6	Super Rare	4,096
7	Mega Rare	16,384

Table 5: Farm slot levels and capacity.

5.2 Slot Upgrade Costs

Upgrade costs follow a **geometric progression** with multiplier 3:

$$C(l) = 100 \times 3^{(l-1)}$$

where l is the target level.

Upgrade	Cost (PONZI)	Cumulative
Locked → Common	100	100
Common → Uncommon	300	400
Uncommon → Rare	900	1,300
Rare → Double Rare	2,700	4,000
DR → Very Rare	8,100	12,100
VR → Super Rare	24,300	36,400
SR → Mega Rare	72,900	109,300

Table 6: Slot upgrade cost schedule.

Total cost to fully upgrade a single slot:

$$\Sigma_{l=1}^{7}\ 100 \times 3^{(l-1)} = 100 \times (3^7 - 1) / 2 = 109{,}300\ PONZI$$

Total cost to max all 25 slots: 25 × 109,300 = **2,732,500 PONZI**.

5.3 Hashpower Calculation

A player's total hashpower is the sum of all staked card powers:

$$H_{player} = \Sigma_{i=1}^{n}\ P(r_i)$$

Maximum theoretical hashpower (25 Mega Rare cards): H_{max} = 25 × 16,384 = **409,600**.

6. REWARD DISTRIBUTION MODEL

6.1 Daily Reward Pool

Each season lasts **30 days**. During this period, the game distributes a fixed pool of **700,000 PONZI tokens per day** to all staking players, proportional to their hashpower share.

6.2 Reward Formula

Rewards accrue continuously. For a given time interval Δt (in seconds):

$$R_{player} = (H_{player} / H_{global}) \times (D / 86{,}400) \times \Delta t$$

where R_{player} is tokens earned, H_{player} and H_{global} are the player's and total hashpower respectively, D = 700,000 is the daily pool, and Δt is elapsed seconds.

6.3 Season Yield

A player's total season income: $Y_{season} = (H_{player} / H_{global}) \times D \times 30$. Total season emission: 700,000 × 30 = **21,000,000 PONZI**.

Example: A player with 10% of global hashpower earns Y = 0.10 × 700,000 × 30 = 2,100,000 PONZI per season.

6.4 Diminishing Returns

As more players stake cards, individual shares decrease. If total global hashpower doubles, each existing player's reward rate halves — creating a natural equilibrium where the marginal cost of acquiring hashpower approaches the marginal reward.

$$\partial R/\partial H_{player} = (D / 86{,}400) \times (H_{global} - H_{player}) / H_{global}^{2}$$

For small players (H_{player} ■ H_{global}): $\partial R/\partial H_{player} \approx D / (86{,}400 \times H_{global})$.

7. THE HEIST — CRASH-STYLE MULTIPLIER GAME

The Heist is a provably fair crash game where players risk PONZI tokens (and optionally SOL) for the chance to multiply their bet.

7.1 Heist Tiers

Tier	PONZI Bet	SOL Bet	Max Mult.
Small	100	0	7.0×
Medium	500	0.1	10.0×
Big	2,000	1.0	15.0×

Table 7: Heist tier parameters.

7.2 Multiplier Curve

The multiplier grows exponentially over time:

$$m(t) = e^{\alpha t}$$

where $\alpha = \ln(10)/80 \approx 0.02878$ and t is elapsed seconds. The multiplier is capped at the tier's maximum.

Time (s)	Multiplier
0	1.00×
10	1.33×
30	2.37×
60	5.63×
80	10.00×

Time (s)	Multiplier
94	15.00×

Table 8: Multiplier growth over time.

7.3 Crash Point Generation

Each heist has a cryptographically determined crash point using provably fair generation:

$$crashPoint = max(1.0, (1 - h) / r)$$

where h = 0.20 (house edge) and r ∈ [0, 1) is derived from HMAC-SHA256(serverSeed, clientSeed). The crash point is further capped at the tier's maximum multiplier.

7.4 Expected Value Analysis

With a 20% house edge, the expected return on any heist bet is:

$$E[return] = (1 - h) \times stake = 0.80 \times stake$$

The probability of reaching multiplier *m* (before tier cap):

$$P(X \geq m) = (1 - h) / m = 0.80 / m$$

Target Mult.	P(Reaching)
1.0× (break-even)	80.0%
2.0×	40.0%
5.0×	16.0%
7.0×	11.4%
10.0×	8.0%
15.0×	5.3%

Table 9: Probability of reaching target multipliers.

7.5 Payout Formula

If a player cashes out at multiplier *m*:

$$payout_{PONZI} = \blacksquare B_{PONZI} \times m \blacksquare$$

$$payout_{SOL} = B_{SOL} \times m$$

7.6 Crashout Card Reward

If a player crashes out (loses the heist), they receive a **consolation card** with 100% probability across all tiers. This card uses the reward rarity distribution, which is more heavily weighted toward Common.

8. THE WHEEL — LEGACY TOKEN SINK

8.1 Overview

The Wheel is a 20-position spinning game designed as a **token sink for previous-season tokens**, giving legacy holders continued utility.

8.2 Spin Cost

Each spin costs **250 legacy PONZI tokens** (flat rate, no escalation), using the Season 1 legacy token.

8.3 Wheel Outcomes

Outcome	Positions	Prob.	Reward
Nothing (✗)	10	33%	—
Card	9	65%	Random card
PONZI Tokens	1	2%	5–100 current PONZI

Table 10: Wheel outcome distribution.

8.4 Expected Value

$$E[spin] = 0.33 \times 0 + 0.65 \times E[card] + 0.02 \times E[tokens]$$

where E[tokens] = (5 + 100) / 2 = 52.5 PONZI. The Wheel converts deprecated tokens into current-season assets, ensuring no token generation is ever truly wasted.

9. BOOSTER PACKS

9.1 Pricing

Quantity	Cost (SOL)
1 pack	0.001
5 packs	0.005
10 packs	0.010
20 packs	0.020
50 packs	0.050

Table 11: Booster pack pricing (linear).

Each pack contains **5 cards** drawn independently from the booster rarity table (Table 4).

9.2 Probability of Target Rarity in N Packs

The probability of obtaining at least one card of rarity *r* in *n* packs:

$$P(\text{at least one}) = 1 - (1 - p_r)^{5n}$$

Packs	Cards	P(≥1 Mega Rare)
10	50	0.50%
50	250	2.47%
100	500	4.88%
500	2,500	22.12%
1,000	5,000	39.35%
1,500	7,500	52.76%

Table 12: Mega Rare acquisition probability.

Approximately 1,500 packs (7,500 cards) are needed for a coin-flip chance at a single Mega Rare.

10. CARD RECYCLING — RISK-BASED EVOLUTION

10.1 Mechanics

Players can recycle unwanted cards with the following outcomes:

Outcome	Probability	Result
Destroyed	80%	Card permanently removed
Upgraded	20%	Card evolves to next rarity

Table 13: Recycling outcomes.

Constraints: staked cards cannot be recycled; Mega Rare cards cannot be upgraded further. Upgraded cards receive a new random creature type and color.

10.2 Expected Recycling Chains

The probability of upgrading a Common card all the way to Mega Rare through successive recycling:

$$P(\text{Common} \rightarrow \text{Mega Rare}) = 0.20^6 = 0.000064 = 0.0064\%$$

That is roughly 1 in 15,625 — but at zero token cost beyond the original card.

10.3 Expected Cards Needed

For one successful upgrade at each tier, the expected number of attempts is 1/0.20 = 5. For a full chain:

$$E[\text{commons needed}] = 5^6 = 15{,}625$$

The recycling system creates a massive **card sink** that controls inflation while providing a free-to-play path to higher rarities.

Commons Recycled	E[Uncommon]	E[Rare]	E[Double Rare]
100	20.0	4.0	0.80
500	100.0	20.0	4.00
1,000	200.0	40.0	8.00

Table 14: Expected recycling yields by volume.

11. THE JACKPOT

11.1 Pool Growth

The jackpot pool accumulates 20% of all booster pack SOL revenue:

$$J = 0.20 \times \Sigma_{all\ boosters}\ 0.001\ SOL$$

11.2 Claim Conditions

To claim the jackpot, a player must simultaneously satisfy two conditions: (i) all 25 farm slots upgraded to level 7 (Mega Rare), and (ii) all 25 slots filled with staked Mega Rare cards.

This requires 2,732,500 PONZI in slot upgrade costs, 25 Mega Rare cards (exceedingly rare), and the first eligible player wins the entire pool.

11.3 Jackpot Difficulty

Given the Mega Rare booster probability of 0.01%, obtaining 25 Mega Rare cards through boosters alone:

$$E[packs\ for\ 25\ MR] = 25 / (5 \times 0.0001) = 50{,}000\ packs = 50\ SOL$$

This makes the jackpot an extreme endgame goal requiring substantial investment or extraordinary luck with recycling.

12. REFERRAL SYSTEM

12.1 Rewards

Referrers earn **20% of booster pack revenue** from referred players, paid in SOL:

$$R_{ref} = 0.20 \times n_{packs} \times 0.001\ SOL$$

12.2 Structure

Referral links are tracked with click analytics. Rewards accumulate and can be claimed at any time. The system uses a **single-tier structure** — direct referrals only, no multi-level component.

13. SEASON MECHANICS & TOKEN REUSE

13.1 Season Lifecycle

Each season introduces a fresh PONZI token mint. When a season ends: the old token's LP remains on-chain (tradeable forever), farming rewards switch to the new token, and old tokens become **legacy tokens**.

13.2 Legacy Token Utility

Legacy tokens serve as the **exclusive currency for Wheel spins** (250 tokens per spin), yielding current-season cards and tokens. This creates a cross-season bridge ensuring: (a) old tokens retain floor value proportional to Wheel EV, (b) new players can buy cheap legacy tokens for Wheel access, and (c) the game never fully abandons previous participants.

13.3 Legacy Token Floor Price

The theoretical floor value of a legacy token is bounded by:

$$V_{legacy} \geq E[spin\ value] / 250$$

As long as the Wheel's expected value exceeds zero, legacy tokens have non-zero intrinsic worth.

14. PLAYER STRATEGIES & TACTICS

14.1 The Farmer (Low Risk)

Goal: Maximize passive hashpower income. Buy booster packs, upgrade farm slots progressively (prioritizing cheapest unlocks first), stake highest-power cards, and compound earned PONZI into further upgrades.

Slot Efficiency Analysis

The cost-per-hashpower ratio varies by slot level. Higher upgrades are more cost-efficient per unit of hashpower gained — but require correspondingly rarer cards to fill.

Upgrade	Cost	Power Gain	Cost/Power
Lock → Common	100	4	25.00
Com → Uncommon	300	12	25.00
Unc → Rare	900	48	18.75
Rare → DR	2,700	192	14.06
DR → VR	8,100	768	10.55
VR → SR	24,300	3,072	7.91
SR → MR	72,900	12,288	5.93

Table 15: Cost efficiency by slot upgrade level.

14.2 The Heister (High Risk)

Goal: Multiply tokens through the crash game. Acquire PONZI through farming or LP purchases, run repeated Small Heists, and cash out at conservative multipliers (1.5–2.0×) for consistent gains.

Optimal Cashout Analysis

The Kelly Criterion suggests an optimal cashout at 1/(1–h) = 1/0.80 = 1.25×, but this is the break-even point. The expected value is constant at 80 PONZI per 100 staked regardless of cashout target — but **variance** differs enormously. Conservative cashouts reduce volatility.

Cashout	P(Success)	EV per 100 PONZI
1.25×	64.0%	80.0
1.50×	53.3%	80.0
2.00×	40.0%	80.0
3.00×	26.7%	80.0
5.00×	16.0%	80.0

Table 16: Heist EV by cashout target (constant EV, variable variance).

14.3 The Recycler (Free-to-Play)

Goal: Upgrade cards without spending PONZI on the LP. Accumulate Common and Uncommon cards, recycle in bulk (20% upgrade chance), and stake upgraded cards for passive income.

14.4 The LP Trader

Goal: Profit from token price movements. Buy PONZI when prices are low, convert into permanent hashpower via slot upgrades, farm at amplified rates, and sell excess during demand spikes. Early buyers who stake quickly capture outsized reward shares before global hashpower grows.

14.5 The Season Bridger

Goal: Extract value from legacy tokens. When seasons end, legacy tokens often dump as holders panic-sell. Patient buyers accumulate cheaply and convert through the Wheel at favorable exchange rates.

14.6 The Referral Engine

Goal: Generate passive SOL income. Share referral links, earn 20% of referred booster purchases. If a referred player buys 100 packs (0.1 SOL), the referrer earns 0.02 SOL — equivalent to 20 free packs.

14.7 Combined Strategy: The Compounder

The most effective approach combines multiple strategies into a self-reinforcing loop: buy boosters to obtain cards, stake the best cards for farming rewards, use farmed PONZI for slot upgrades and heist bets, recycle weak cards for potential upgrades, and refer friends to generate additional SOL for more boosters. Each system feeds into the others.

15. CONCLUSION

Ponzimon Season 2 creates a self-reinforcing economic loop where: booster packs inject cards and fund the jackpot and referrals; farming rewards patience and hashpower accumulation; heists offer high-risk token multiplication with guaranteed consolation cards; recycling provides a free path to card evolution; the Wheel bridges seasons ensuring legacy tokens retain value; and the LP provides liquidity and price discovery.

Every system feeds into the others. Cards become hashpower. Hashpower becomes tokens. Tokens become upgrades, heist bets, or tradeable assets on the LP. Even losses (crash-outs) produce new cards. Even deprecated tokens (legacy seasons) produce new opportunities.

The result is a game where every action has economic consequence, every risk has a calculable expected value, and every player — from the cautious farmer to the aggressive heister — can find a viable path to growth.

This document describes the game mechanics and economics of Ponzimon Season 2 as of Season 2 (February 2026). Each season lasts 30 days. Parameters such as reward pools, costs, and probabilities are subject to change between seasons. All on-chain data can be independently verified on the Solana blockchain.