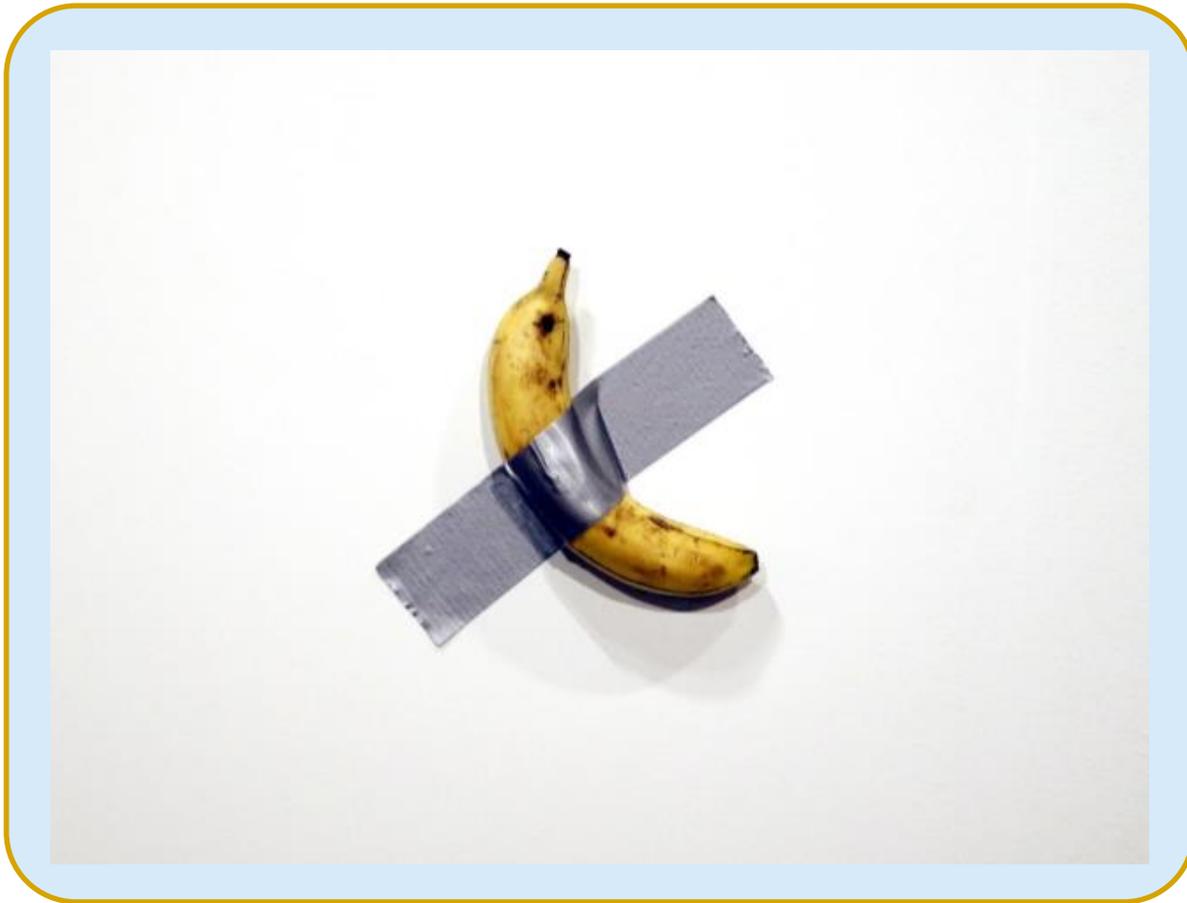


Banana and Duct Tape



Price of Belief

**\$6.2
Million**

The Theater of Value





Cryptocurrencies, NFTs, and DeFi: New Frontiers in Problem Gambling

National Conference on Gambling Addiction & Responsible Gambling, 2025

July 17, 2025

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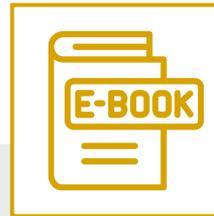
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DeFi and Problem
Gambling

Background

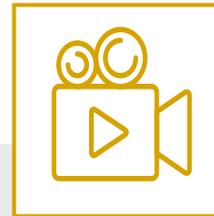
Digital assets

A digital asset is anything that is created and stored digitally. Digital assets can be traded, sold, and otherwise utilized in countless ways.



E-books

A digital version of a traditional printed book that can be read on devices such as computers, tablets, and smartphones.



Audio and Video

Digital files that store sounds and moving images, respectively.



Electronic Art

A broad term used to describe artwork that is created, manipulated, or presented using digital technologies.

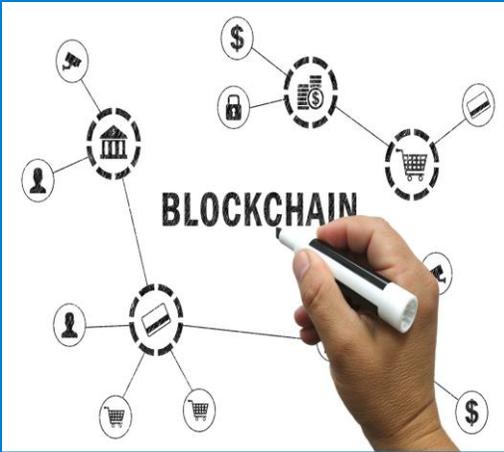


Blockchain enabled

Digital assets that relate specifically to technologies based on the **blockchain**. It includes cryptocurrencies, Non-Fungible Tokens (NFTs), and Decentralized Finance (DeFi) applications.



The Blockchain is the genesis of cryptocurrencies, NFTs and DeFi



The blockchain is a digital ledger with certain properties.

Distributed

The ledgers are distributed across a network of computers. In the case of the Bitcoin blockchain, there are tens of thousands of computers that maintain complete and updated copies of all Bitcoin transactions.

Decentralized

Operates without a central authority or intermediary, such as a bank or government. In other words, no single entity controls it.

Tamper Resistant

Once data is recorded onto the ledger, it is virtually impossible to alter or tamper unnoticed. This makes the blockchain highly secure against fraud and unauthorized changes.

Transparent

The blockchain is transparent, meaning that all transactions are recorded and can be viewed by anyone with an internet connection. This transparency allows for easy verification of transactions.¹

[View Bitcoin Block Chain](#)

1. Transparency is a fundamental feature of the blockchain but not a requirement. Some cryptocurrencies, such as Monero and Zcash, are designed to obstruct transparency.

Blockchain: Parallels to the Internet Craze of the 1990s

Internet

Web 1.0



Emerging technology,
innovation and industry
disruption

Blockchain

Web 3.0



Initial Public Offerings



Market dynamics and
speculative investments

Initial Coin Offerings



Internet Applications¹



Ecosystem of Innovation

Blockchain Applications



1. Most of these applications are related to Web 2.0.

Cryptocurrencies

What is a cryptocurrency?



A type of digital or virtual currency that uses cryptography¹ for security and operates on a blockchain.

Unlike traditional currencies, such as US dollars, cryptocurrencies can operate without a central authority (e.g., a government).

Estimates of the number of cryptocurrencies range from thousands to tens of thousands, depending on the definition used. The first and most well-known cryptocurrency is Bitcoin.

1. Cryptography is a method of protecting information using codes, algorithms, and mathematical concepts to make information unreadable to anyone but the intended recipient..

Cryptocurrencies and their utilities



Bitcoin

Decentralized digital currency, medium of exchange, and store of value. Sometimes called digital gold.



Filecoin

Incentivizes users to rent out spare storage space on their computers, creating a decentralized cloud storage network.



Ripple

Facilitates fast and low-cost international money transfers for financial institutions.



Ethereum

Largest smart contract platform enabling dApps, DeFi, and NFT's. Enables self-executing contracts on the blockchain.

Example of Meme Coins

A meme coin is a cryptocurrency named after characters, individuals, animals, artwork, or anything else in an attempt to be humorous, light-hearted, and attract a user base by promising a fun community.

Coin	Market Value	Price per coin
 Bonk (BONK)	\$1.6B	\$0.00002008
 Pepe (PEPE)	\$4.4B	\$0.00001037
 Shiba Inu (SHIB)	\$7.2B	\$0.00001214
 Dogecoin (DOGE)	\$26.4B	\$0.1735

Total Market Value of all cryptocurrencies:¹ \$3,390,000,000,000

Bitcoin

Birth of Bitcoin



In 2008, in the backdrop of the worse financial crisis since the Great Depression, Bitcoin was born out of a vision for a decentralized and transparent financial system, free from control of governments and banks.¹

Bitcoin as money



The three fundamental properties of money are **medium of exchange** (facilitates transactions between goods and services), **unit of account** (e.g., prices are in terms of dollars in the U.S.), and **store of value** (something that preserves purchasing power over time).

Bitcoin supply



About 19.8 million bitcoins have been mined, out of a total supply of 21 million. Each bitcoin can be divided into 100 million parts. Currently, one bitcoin is worth about \$109,475, making the total value of bitcoins equal to \$2.2 trillion.

Bitcoin mining



Bitcoins are mined digitally. The mining process, which involves solving cryptographic puzzles, gets progressively more difficult, similar to how mining for less assessable gold becomes more complex and expensive.

Buy Bitcoin



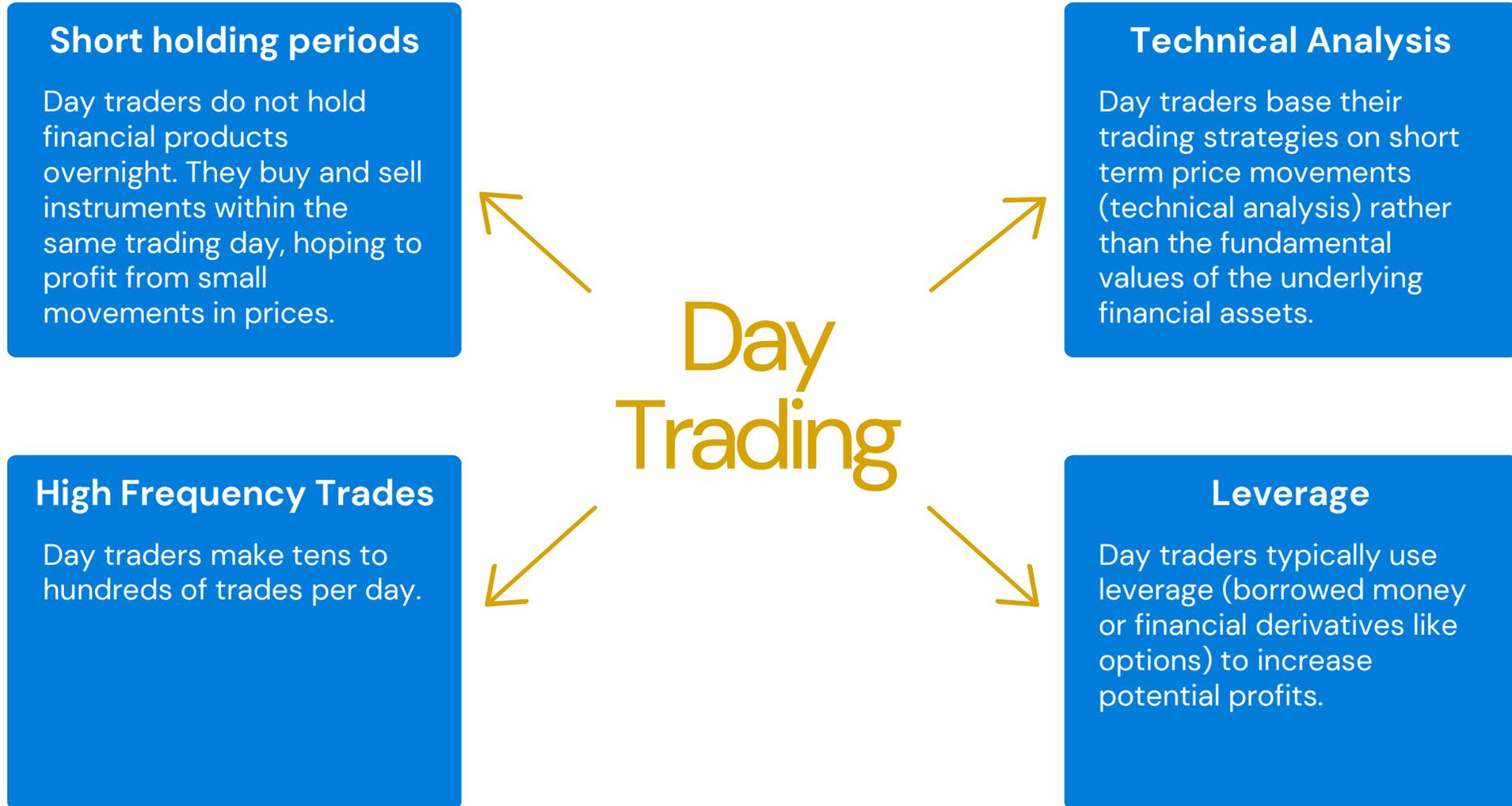
Whole or fractions of bitcoins can be purchased through cryptocurrency brokerage firms, such as Coinbase and Robinhood.²



Celebrated every year on May 22 as Bitcoin Pizza Day, the most famous Bitcoin transactions occurred in 2010 when a man paid 10,000 bitcoins for two pizzas, which cost him \$41 at the time. Today, those 10,000 bitcoins would be worth ~\$109,000,000!

1. Nakamoto, S. (2008). Bitcoin: A peer-to-peer electronic cash system. <https://bitcoin.org/bitcoin.pdf>. 2. Robinhood also sells stocks and other traditional financial assets.

What is day trading?¹



The goal of day trading is to profit from small price fluctuations over a short time period, typically minutes or hours.

Cryptocurrencies amplify features of day trading



1

Trading hours

Cryptocurrencies extend trading hours to around the clock, all year long (24/7/365). The extended availability generates endless opportunities and facilitates impulsive behaviors.

2

Market volatility

Cryptocurrencies typically fluctuates more dramatically offering the potential for greater profits, generating greater anticipatory excitement.

3

Speculative Nature

The higher price volatility, lack of (widely accepted) fundamental valuations, regulatory uncertainty, and general characteristics of emerging markets make cryptocurrency markets more speculative and attractive to some individuals.

4

Higher leverage

Cryptocurrencies' markets allow for higher leverage, in some cases 50 to 100 times leverage. This means that individuals can amplify their gains (or losses) by up to 100 times their initial investments.

How does day trading relate to gambling activities?¹



Captivating Visual Displays

Gaming machines and day trading screens are visually stimulating, featuring flashing lights and dynamic elements, such as real-time asset prices. They generate anticipation, excitement, and other emotional responses.



Immediate Feedback loop

Day trading (as opposed to long-term investments) generates immediate feedback (quick gratification or disappointment) similar to casino games.



Games of Chance

Short-term (minute-by-minute) asset prices (notably stock prices) are highly unpredictable making trading at such high frequencies akin to gambling.



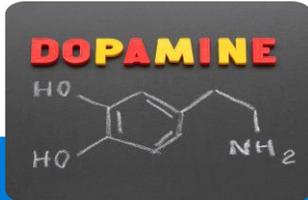
Overconfidence

Many day traders are thought to develop illusions of control, believing they can accurately predict short-term market movements. This is similar to how individuals overestimate their ability to control outcomes in games of chance.

1. These relationships do not necessary apply to professional day traders.

Day Trading and Addiction

Dopamine Release



- The anticipation of a profitable trade and the actual experience of winning trigger the release of dopamine in the brain.
- Repeated exposures to the highs of successful trades can lead to an addictive cycle.

Tolerance



- Over time, the brain may become desensitized to the dopamine released by smaller wins, leading traders to seek larger risks to achieve the same level of excitement and satisfaction.

Withdrawal



- The brain may develop a craving for the dopamine release associated with trading, leading to compulsive behaviors where the trader feels a constant need to be in the market.
- The absence of trading activity may lead to restlessness and discomfort.

Non-Fungible Tokens (NFTs)

What are Non-Fungible Tokens (NFTs)?



Uniqueness: An NFT is a unique digital asset, with distinct properties that make it different from any other NFT. This uniqueness is encoded on the blockchain. This feature makes NFTs idea for representing one-of-a-kind digital assets, such as artwork and other collectibles.

Ownership: NFT's can provide proof of ownership, which is recorded on the blockchain. This allows for tracking of an NFT's history, including its creator and past owners.¹

Smart Contracts: NFT's are governed by smart contracts, which are programs written on and executed by the blockchain. For example, a smart contract could contain the terms of a sporting wager and execute (transfer of funds) following the outcome of the event.

1. There is debate on the literal definition of ownership.

Common NFT Applications

Digital Art: Artists can create and sell digital art pieces as NFTs.



Gaming: Players create, buy, sell, and trade in-game assets like characters, weapons, or skins.



Virtual Real Estate: In virtual worlds, users can buy and sell parcels of virtual land as NFTs – a form of tokenization.



Collectibles: NFTs are used to create digital collectibles, such as a set of virtual pets.



Media: Musicians can release limited-edition albums giving fans exclusive rights to these digital assets.

Examples of NFTs



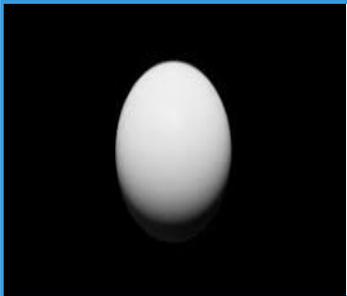
Bored Ape
#8585
sold for
\$3.4 million
in October
2021.



Piece: Everydays: The First 5000 Days.

Description: Created by digital artist Beeple, this NFT is a digital collage of 5,000 individual artworks, one for each day over 13 years.

Value: \$69.3 million at Christie's Auction House (March 2021)



Piece: The Merge

Description: A collection of ~266,000 white circle tokens. When multiple tokens are purchased, they merge into a single token with a larger 'mass,' evolving into a dynamic and changing digital art piece.

Value: \$91.8 million.



Collection: Bored Ape Yacht Club

Description: A collection of 10,000 unique cartoon apes, each with different traits.

Value: Total trading volume is \$3.75 billion.

NFTs and Online Casinos



1

Gaming Currency

NFTs are increasingly being used as a means to make wagers in online casinos, replacing traditional methods, such as credit cards and bank transfers. The advantages include player anonymity, low transactions fees, and global accessibility, without the need for currency exchange.

2

Prizes

NFTs offer unique and valuable prizes. Players find NFTs appealing because they are assets that have the potential to appreciate, thereby increasing their attractiveness. In other words, in addition to their initial win, players can benefit further if the NFTs increase in value.

3

Player-to-Player payment option

NFTs have become a suitable payment method for transactions carried out between two players; the transactions are safe, secure, anonymous, and does not require a third party.

4

Loyalty Program Rewards

Online casinos use NFTs for customer acquisition and to incentivize loyalty. As unique digital assets, NFTs can serve as a differentiating factor that attracts and retains customers.

NFT's and Gaming



Ownership

In traditional games, players don't truly own their in-game items, such as avatars and weapons. However, NFT-based games enable player ownership and allows in-game items to be bought and sold. One in-game item was sold for \$1.5 million.¹

Interoperability

NFTs can be built on the same blockchain which allows for in-game NFTs to exist outside of the game and be transferred to other compatible games.

Monetization

Enabling in-game item ownership and interoperability across gaming platforms creates marketplaces where these items can be bought, sold, and traded, allowing games to be monetized even if they have nothing to do with speculation and / or gambling.

1. <https://www.coinbase.com/learn/tips-and-tutorials/why-do-nfts-matter-for-gamers>.

NFTs relationship to problem gambling

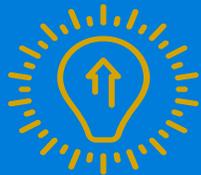


Speculative Behavior



- The short-term, speculative buying and selling of NFTs can lead to the same problems relating to day-trading in cryptocurrencies.
- NFTs are often used in randomized loot boxes, which adds elements of gambling in games.
- The FOMO around NFTs can lead to impulsive and hyped-driven purchases.

Enhanced Gambling Ecosystems

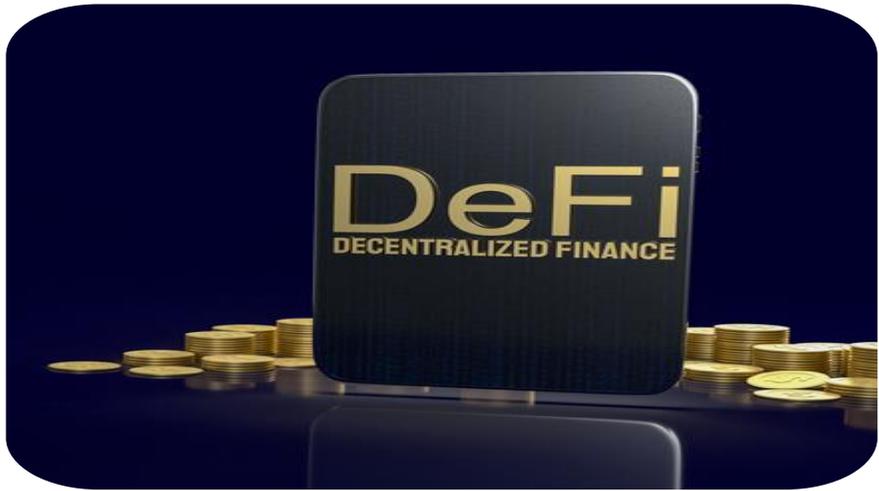


- NFTs enhance online casinos by enabling different forms of payment and reward systems.
- NFTs technology enables innovative forms of virtual gambling casinos, such as Decentraland, The Sandbox, and Atari Casino in the Metaverse.
- NFTs can make it easier for individuals to participate in unregulated gambling markets because of their anonymity and less oversight protection in virtual gambling venues.

Decentralized Finance (DeFi)

What is DeFi?

DeFi, or Decentralized Finance, is a financial system that allows individuals to make financial transactions **directly with each other**, without the need for intermediaries, such as banks. It uses smart contracts – self executing contracts with the financial terms codified and stored on the blockchain.



Access

Anyone with an internet connection can access DeFi services, without traditional barriers and requirements, such as a bank account or credit history.

Applications

- Lending and borrowing.
- Decentralized trading exchanges, such as Uniswap and SushiSwap.
- Yield Farming, allowing users to provide liquidity to the system in exchange for rewards (e.g., interest payments).

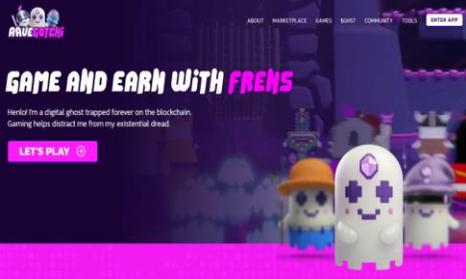
Advantages

- Easy access and availability.
- Lower costs due to the removal of the intermediary.
- Transparency since the protocols are public (visible and auditable) on the blockchain.
- Innovative financial products.

Adversity

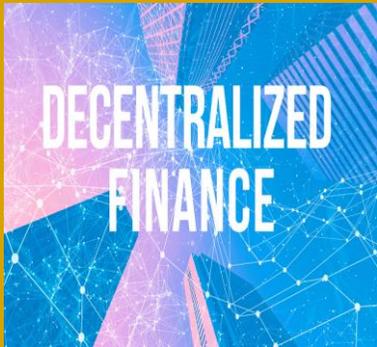
- Relies on cryptocurrencies which have high volatility.¹
- Bugs (computer program errors in the smart contracts) that can lead to exploitation and / or uncertainty.
- DeFi products can be very risky.
- Immature market subject to fraud.

1. There are stable coins that are pegged to fiat currencies, such as the dollar.



DeFi platforms that enable gambling

DeFi (Decentralized Finance) can enable problem gambling by providing an easily accessible, unregulated, and highly speculative environment where individuals can engage in gambling-like activities.



Cryptocurrency Trading

- DeFi platforms enable unregulated and anonymous 365/24/7 direct person-to-person trading of cryptocurrencies with high leverage trading positions.
- Some platform offers predictions markets where user bet on whether the price of a cryptocurrency will rise or fall within a specific time period, similar to how a person may place a wager on the outcome of a sporting event.

Gamification

- DeFi platforms often add elements of gaming to monetary activities.
- Aavegotchi allows users to purchase and interact with digital avatars. Users earn rewards by staking their tokens to these avatars, which increases their values as they accumulate interest. The platform also features games where users compete for prizes and making the process feel like a video game.
- Cream Finance allows users to lend and borrow assets. If a borrower's collateral falls below a certain threshold value, their position becomes eligible for liquidation. This process allows users to engage in a "treasury hunt" to potentially earn rewards.
- SushiSwap's offers a SushiBar where user's stake SUSHI tokens and earn a share of the platform's trading fees. The platform provides a structured, gamified way to participate in token launches.

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