LESSON 17: DECENTRALIZED FINANCE

A Prison Professors Self-Directed Course

Estimated time: 75–110 minutes

Educational and Safety Boundary:

> *This lesson provides general education about decentralized finance and related risks. It does not provide individualized financial, investment, legal, or tax advice. No activity requires internet access, an account, a wallet, a digital asset, or a transaction.*

OPENING GUIDANCE

While serving 26 years in federal prison, I learned to pause when a promise sounded unusually attractive. I could not afford to build my future around a slogan. I had to ask where an opportunity came from, what work it required, who controlled it, what could fail, and what evidence supported the claim.

That habit applies directly to decentralized finance, often shortened to DeFi. A person may encounter phrases such as earn yield, instant liquidity, permissionless exchange, or automatic lending. Those phrases describe possible features. They do not establish safety, reliability, legality, fairness, or a guaranteed return.

DeFi uses blockchains, tokens, smart contracts, wallets, interfaces, and outside data to provide financial-like functions. Those functions can include exchanging one token for another, supplying assets to a pool, borrowing against collateral, and distributing fees or incentives. The code can automate calculations and transfers. People still design the system, choose its rules, supply its assets, control selected settings, communicate its claims, and absorb its losses.

I encourage you to approach this lesson as a systems analyst rather than as a customer. You do not need money, internet access, or a wallet. Your task is to trace how a proposed service works and identify the conditions behind any advertised benefit.

The independent PP token community will provide one practical example. Neither Prison Professors nor I created, organized, managed, or controlled that token project. Community members formed it as an independent effort. A public page displays a trading pair between the PP token and Wrapped BNB on BNB Smart Chain. That pair helps us see how a decentralized exchange can use a liquidity pool. It does not ask or encourage anyone to acquire or trade the token.

Keep one question in view: If someone describes a possible return, what risks, dependencies, and loss pathways should I examine before accepting the claim?

PURPOSE AND ESSENTIAL QUESTION

Lesson 17 introduces blockchain-based exchanges, lending, borrowing, and liquidity without encouraging participation or minimizing risk. It explains how smart contracts may coordinate these functions and why DeFi can retain important forms of human control and financial exposure.

Essential Question:

» Why should a promise of greater return lead to more questions about risk, liquidity, control, and possible loss?

LEARNING OBJECTIVES

After completing this lesson, you should be able to:

» Define decentralized finance at an introductory level.
» Describe the basic functions of decentralized exchanges, lending protocols, and liquidity pools.
» Explain the possible roles of collateral and automated pricing.
» Identify smart-contract, liquidation, liquidity, volatility, oracle, governance, fraud, and regulatory risks.

KEY TERMS

DECENTRALIZED FINANCE

Definition: A broad term for blockchain-based services that use smart contracts to perform financial-like functions such as exchanging, lending, borrowing, or distributing returns, often without a conventional institution handling every step.

Sample sentence: The decentralized finance protocol used smart contracts to coordinate a pool of tokens, but people still governed important settings.

DECENTRALIZED EXCHANGE

Definition: A blockchain-based protocol, often called a DEX, that allows token exchanges through smart contracts rather than relying only on a conventional exchange to hold assets and update an internal account ledger.

Sample sentence: The decentralized exchange used a liquidity pool to calculate the terms of a token swap.

LIQUIDITY POOL

Definition: Tokens placed in a smart contract so that the protocol can support exchanges, loans, or other functions.

Sample sentence: The liquidity pool needed enough available tokens to support the requested exchange.

COLLATERAL

Definition: An asset pledged to support an obligation and exposed to being taken or sold if the required conditions are not maintained.

Sample sentence: The borrower pledged a volatile token as collateral for a smaller loan.

LIQUIDATION

Definition: A process that sells or transfers collateral after a borrowing position crosses a defined risk threshold.

Sample sentence: A rapid decline in the collateral's value caused the smart contract to make the position eligible for liquidation.

YIELD

Definition: A return associated with providing, lending, staking, or otherwise committing an asset. Yield may come from interest, trading fees, token incentives, or another source, and it is not guaranteed profit.

Sample sentence: Before evaluating the advertised yield, the learner identified its source, conditions, and possible paths to loss.

MAIN LESSON

DEFI DESCRIBES FUNCTIONS, NOT A SINGLE PRODUCT

DeFi is not one company, application, blockchain, or legal structure. It is a broad category. Different protocols use different code, assets, governance arrangements, data sources, interfaces, and risk controls.

A DeFi system may attempt to perform functions that also exist in conventional finance:

» Exchange one asset for another.
» Match people who supply assets with people who borrow.

- Require collateral to support a loan.
- Calculate interest or other charges.
- Distribute trading fees or token incentives.
- Create derivatives, insurance-like arrangements, or asset-management tools.

The financial function may be familiar even when the delivery system is new. A borrower still faces an obligation. A lender still faces the possibility of loss. A market still needs buyers, sellers, and usable liquidity. Prices can still move. Fraud can still occur. The new features include programmable execution, public blockchain records, token-based assets, and the ability to combine one protocol with another.

The word decentralized should be treated as a question, not a complete description. A system may distribute transaction processing across a blockchain while concentrating control over its website, administrative keys, upgrades, oracle selection, treasury, or governance tokens.

A DEFI SERVICE HAS SEVERAL CONNECTED LAYERS

Lesson 16 introduced the layers of a decentralized application. DeFi builds financial exposure on top of those layers. A simple DeFi service may depend on:

- A blockchain that processes transactions and stores the current state.
- Tokens that represent the assets used by the protocol.
- Smart contracts that hold assets and apply rules.
- A wallet or signing tool that authorizes requests.
- A website or other interface that prepares those requests.
- Oracles that supply prices or other outside information.
- Liquidity providers who place assets into pools.
- Governance participants or administrators who set or change parameters.
- Bridges, stablecoin issuers, custodians, or other connected services.

A failure in one layer can affect the rest. Correct smart-contract code cannot repair an inaccurate oracle price. A public blockchain cannot guarantee that a stablecoin issuer can honor redemptions. A well-designed protocol cannot prevent every copied website from imitating its interface. An available pool cannot protect a participant from a sharp change in token value.

This layered view also prevents a common misunderstanding: removing one conventional intermediary does not remove every dependency. DeFi often rearranges trust. A participant may rely less on a bank's internal ledger and more on code, collateral, market liquidity, token issuers, oracle operators, governance, and personal security.

DECENTRALIZED EXCHANGES

A decentralized exchange uses smart contracts to support token exchanges on a blockchain. In many designs, a participant keeps control of assets until a signed transaction interacts with the protocol. The protocol then applies its rules and updates on-chain balances.

This differs from a centralized exchange that commonly receives a customer's assets, holds them in accounts under the company's control, and records many trades on an internal ledger. A DEX can reduce reliance on that form of custody, but it creates other exposures:

- A person must protect the credentials used to authorize a transaction.
- The smart contract may contain a defect or unsafe feature.
- A copied interface may prepare a harmful request.
- A token may be fraudulent, restricted, illiquid, or controlled by an unknown party.
- A transaction can fail, execute at an unexpected price, or incur fees.
- The protocol may rely on governance or administrative powers.
- Laws and access restrictions may apply even when code is publicly reachable.

Some decentralized exchanges match orders. Others use an automated market maker. The next section explains that model.

LIQUIDITY POOLS AND AUTOMATED PRICING

An automated market maker, often shortened to AMM, uses a formula and a pool of tokens to quote exchanges. Instead of waiting for a specific seller to accept a specific buyer's order, a trader exchanges against assets already held by a smart contract.

Imagine a pool that contains Token A and Token B. The protocol observes the pool's balances and applies a pricing formula. When a person sends Token A into the pool and receives Token B, the balance of Token A rises while the balance of Token B falls. The formula produces a new exchange rate after the trade.

This is automated pricing. It does not mean the protocol knows the fair economic value of either token. The formula responds to pool balances. Traders, arbitrage activity, outside markets, and available liquidity influence how the pool's price relates to prices elsewhere.

Trade size can influence the result. A small trade in a deep pool may change the balance only slightly. A large trade in a shallow pool may move the quoted price

more sharply. The difference between an expected price and the execution result is commonly called slippage.

Liquidity providers supply the pool's tokens. In return, the protocol may allocate a share of trading fees or other incentives. That possible return carries exposure:

- One or both tokens can lose value.
- Pool prices can change rapidly.
- A provider's final mix of tokens can differ from the starting mix.
- The provider may perform worse than simply holding the original tokens.
- Smart-contract defects, governance changes, scams, or network failures can cause loss.
- A withdrawal may be difficult when liquidity is limited or the system is paused.

The phrase impermanent loss is often used for the difference that can arise when the relative prices of pooled tokens change and the automated market maker rebalances the provider's holdings through trades. The label can mislead beginners. The loss does not necessarily disappear. If a person withdraws under unfavorable conditions, the economic difference can become final.

APPLIED CASE: THE INDEPENDENT PP TOKEN PAIR

The independent PP token community provides a real example of a token pair on BNB Smart Chain. Neither CZ nor I created the token. Prison Professors did not organize, manage, or control the project, and the community describes it as independent rather than as an official Prison Professors product or endorsement.

On July 23, 2026, a public DEX Screener page identified a PP/WBNB pair on PancakeSwap v2. WBNB means Wrapped BNB, a token form of BNB that can interact consistently with smart contracts. The page displayed two assets pooled in a smart contract and identified a public pair address.

That observation gives us a five-part map:

- Asset one: the community-created PP token.
- Asset two: WBNB.
- Pool: a smart contract holding quantities of both assets.
- Pricing process: an automated market-maker formula that changes the pool's exchange rate as trades alter its balances.
- Interface and record tools: PancakeSwap may prepare interactions, while DEX Screener and BscScan display selected public information.

The pair illustrates a basic DeFi function. It does not prove that either token has a stable value, that the pool will remain liquid, that every contract is safe, that displayed information is complete, or that a trade will produce a favorable result. A listing is not an endorsement, and a public record is not a recommendation.

The community token also has its own smart-contract behavior and public mission claims. Those features are separate from the DEX pool's pricing and liquidity. A learner should identify which contract performs which function instead of treating the token, pair, website, treasury, and Prison Professors organization as one system.

No participant should visit the page, connect a wallet, approve a contract, acquire a token, or conduct a trade for this course. The educational value comes from tracing the system on paper.

LENDING AND BORROWING PROTOCOLS

A DeFi lending protocol may gather tokens from suppliers into a pool. Borrowers receive tokens from that pool after satisfying the protocol's conditions. Smart contracts track supplied assets, borrowed assets, interest, collateral values, and risk thresholds.

The word lender can create the image of one person evaluating another person's character and repayment history. Many DeFi protocols use a different model. Suppliers contribute to a shared pool. Borrowers interact with the pool's rules. The protocol may not know the borrower's identity or credit history. It instead relies heavily on collateral.

Interest rates may change according to pool use and governance settings. When much of an available pool has been borrowed, the protocol may increase borrowing rates to encourage repayment and attract more supply. When demand is lower, rates may decline. A displayed rate can therefore change rather than remain fixed.

Available liquidity affects withdrawals. A supplier's account may show a claim on the pool while much of the underlying asset is currently borrowed. The protocol may allow withdrawal only when enough unborrowed liquidity is available. The phrase withdraw anytime should be examined together with the conditions that can limit actual withdrawal.

COLLATERAL AND OVERCOLLATERALIZATION

Collateral reduces one form of lending risk by giving the protocol an asset that can be taken or sold if the borrowing position becomes unsafe. Many crypto lending designs require overcollateralization: the collateral must be worth more than the borrowed amount when the loan begins.

Suppose a fictional protocol requires $150 of Token A as collateral for a $100 loan of Token B. The extra value creates a buffer. If Token A's market value falls, that buffer shrinks. If the value crosses the protocol's threshold, the position may become eligible for liquidation.

Overcollateralization does not remove risk. It moves much of the risk toward:

- The accuracy and timeliness of price data.
- The speed and depth of markets used to sell collateral.
- The volatility of the pledged token.
- The reliability of the liquidation code.
- Network availability and transaction ordering.
- The borrower's ability to monitor a changing position.
- Governance decisions about thresholds, accepted assets, and fees.

A protocol may permit a person to borrow without a conventional credit check, but that person can still lose valuable collateral. Privacy or access benefits should not be separated from the economic cost of maintaining the position.

LIQUIDATION IS AN AUTOMATED LOSS-CONTROL PROCESS

Liquidation is the process used to restore a protocol's collateral protection after a borrowing position crosses a defined threshold. A smart contract may allow another participant or automated service to repay part of the debt and receive part of the collateral, often with an incentive.

From the protocol's perspective, liquidation can reduce the chance that a loan becomes undercollateralized. From the borrower's perspective, liquidation can cause an involuntary sale or transfer of collateral, a penalty, and a realized loss.

Rapid markets can make the process severe. A falling collateral price can trigger many liquidations. Those sales can place further pressure on market prices. Thin liquidity, oracle delays, network congestion, or aggressive thresholds can worsen the result.

The code may perform the authorized liquidation exactly as designed. The outcome can still be financially painful. Automation increases speed and consistency; it does not create compassion, negotiation, an extension, or a guaranteed opportunity to recover.

ORACLES CAN DETERMINE FINANCIAL OUTCOMES

A blockchain cannot independently know the current market value of an asset. A lending protocol may use an oracle to obtain price information. The reported price

helps calculate collateral value and decide whether a position has crossed a liquidation threshold.

That dependency creates several questions:

- Which markets or data providers contribute to the price?
- How often does the value update?
- What happens when a source is unavailable?
- Can one market be manipulated?
- Does the protocol compare several sources?
- Is there a delay, pause, or review mechanism for an extreme result?
- Who can replace or reconfigure the oracle?

An oracle can transmit data correctly according to its design while the data remains incomplete, delayed, or distorted. If a protocol uses that value automatically, a data weakness can become a financial loss.

YIELD HAS A SOURCE AND A SET OF CONDITIONS

Yield does not appear from nowhere. A protocol may distribute value from:

- Interest paid by borrowers.
- Fees paid by traders.
- Newly issued incentive tokens.
- Rewards funded by a project treasury.
- Revenue from another strategy or connected protocol.
- Subsidies intended to attract early participation.

Each source creates different questions. Borrower interest depends on borrowers, collateral, repayment, and available liquidity. Trading fees depend on trading activity and pool design. Incentive tokens depend on the token's supply, demand, transferability, governance, and market value. A connected strategy adds another contract and another path to failure.

An advertised percentage may be variable, estimated, annualized from a short period, paid in a volatile token, reduced by fees, or dependent on reinvestment. The number may describe a gross rate before token-price losses, taxes, withdrawal costs, or liquidation.

Greater advertised yield commonly reflects greater uncertainty, risk, or subsidy. It should produce a longer list of questions:

- What creates the return?
- Who pays it?
- In which asset is it paid?
- Can that asset lose value?
- Is the rate fixed, variable, promotional, or estimated?
- Can principal be lost?
- Can assets be withdrawn when requested?
- Which contracts, oracles, bridges, administrators, and markets are involved?
- What evidence supports the claim?
- What legal protections or remedies exist if the system fails?

The purpose of these questions is not to predict every failure. It is to replace excitement with analysis.

SMART-CONTRACT AND COMPOSABILITY RISK

DeFi protocols can connect to other protocols. One application may deposit assets into a second protocol, use a token from that protocol as collateral in a third, and rely on an oracle drawing data from several markets. This ability to combine components is called composability.

Composability can support new services without rebuilding every function. It also connects risks. A defect, pause, price failure, governance attack, or liquidity shortage in one component can spread into another.

An audit can provide useful evidence about a defined code version and scope. It cannot guarantee the safety of connected contracts, later upgrades, user interfaces, governance decisions, oracle data, bridges, or market conditions. A high yield should not be treated as compensation for risks that the participant cannot identify or evaluate.

LIQUIDITY AND VOLATILITY RISK

Liquidity is the practical ability to exchange or withdraw an asset without unacceptable delay or price impact. A displayed balance does not prove that a market can absorb a large sale. A pool can exist while remaining too shallow for the desired transaction.

Volatility can reduce collateral values, trigger liquidation, change pool composition, and overwhelm price assumptions. A token advertised as stable may lose its intended reference value. A wrapped token may depend on a custodian or contract. A bridge may fail. Each additional token representation adds a dependency.

Liquidity can disappear during stress, precisely when many people want to exit. Transaction fees and network congestion may rise at the same time. A participant may face both a falling price and difficulty completing a protective action.

GOVERNANCE AND ADMINISTRATIVE RISK

Some protocols use token voting. Others rely on a development team, foundation, company, multisignature group, or administrator. Many use a combination.

Governance or administrators may be able to:

- Change collateral requirements or interest-rate formulas.
- Add or remove supported assets.
- Select or replace oracles.
- Pause functions.
- Upgrade contracts.
- Redirect fees.
- Control a treasury.
- Influence the interface and public communications.

These powers can support repairs and adaptation. They can also concentrate control or create misuse, key-loss, and conflict-of-interest risks. A protocol can process transactions on a decentralized network while important decisions remain concentrated among a small group.

FRAUD, MANIPULATION, AND LEGAL UNCERTAINTY

Open code and public networks do not prevent deception. A promoter may copy a known protocol's website, invent an audit, conceal administrator powers, create a token with harmful transfer rules, exaggerate a yield, or disappear after collecting assets.

Market manipulation can distort prices in shallow pools. An attacker may exploit code, governance, an oracle, a bridge, or transaction ordering. Recovery may be difficult because blockchain transactions can be irreversible and participants may be unknown or located across jurisdictions.

Legal and regulatory treatment varies by activity, asset, participant, and jurisdiction. Public availability does not establish legal permission. Terms such as decentralized, community-owned, or autonomous do not remove possible obligations or liability. This course does not provide legal advice.

A DISCIPLINED EVALUATION SEQUENCE

When you examine a DeFi claim on paper, use this sequence:

1. Identify the function. Is it exchange, lending, borrowing, liquidity provision, or something else?
2. Identify the assets. What tokens enter, leave, secure, or pay the arrangement?
3. Identify the source of return. Interest, trading fees, incentives, treasury subsidy, or another strategy?
4. Identify the controls. Who can upgrade, pause, change rates, choose oracles, or move resources?
5. Identify the loss pathways. Price decline, liquidation, code defect, fraud, illiquidity, bridge failure, or governance action?
6. Identify the exit conditions. When and how can a participant withdraw, and what can delay or reduce the result?
7. Identify the evidence. Which claims are supported by public records, code, reports, policies, or independent review?
8. Identify the unknowns. Which conditions cannot be verified or understood?

A learner can apply this sequence to financial claims, business opportunities, educational programs, and career pathways. Strong judgment begins with a clear map of how a claimed benefit is produced.

APPLIED SCENARIO: THE RIVERBRIDGE YIELD CLAIM

The following scenario is fictional and requires no device, account, or asset.

RiverBridge describes itself as a decentralized lending application. Its printed advertisement says:

"Earn up to 18 percent annual yield on StudyDollar deposits. Withdraw whenever you choose. Smart contracts remove the middleman."

The accompanying description provides these details:

- Depositors supply StudyDollar tokens to a lending pool.
- Borrowers pledge RiverToken as collateral and receive StudyDollar loans.
- An oracle reports the market price of RiverToken.
- The protocol can liquidate collateral when its value crosses a set threshold.
- The advertised yield includes borrower interest and newly issued RIVER reward tokens.
- The rate changes with borrowing demand and the market value of RIVER.
- Withdrawals depend on StudyDollar remaining available in the pool.
- An administrator can pause withdrawals and upgrade selected contracts.

- StudyDollar is issued by a separate organization.
- No independent audit report or legal disclosure accompanies the advertisement.

The advertisement contains a possible return, but the supporting conditions create several forms of exposure.

If RiverToken falls rapidly, borrower collateral may lose value. Liquidations may add selling pressure. If the oracle is delayed or manipulated, the protocol may liquidate at a distorted price or fail to act in time. If most StudyDollar tokens have been borrowed, depositors may have to wait for available liquidity. If RIVER reward tokens lose value, the advertised yield may be worth far less than the displayed percentage suggests.

The administrator's pause and upgrade powers may help respond to a defect, yet those same powers create dependence on a person or group. The separate StudyDollar issuer adds another layer. A smart contract cannot guarantee that the issuer will maintain the token's intended value.

The phrase up to 18 percent is incomplete without a time period, calculation method, payment asset, fees, assumptions, and loss disclosure. The phrase withdraw whenever you choose conflicts with the statement that withdrawals depend on available pool liquidity and may be paused.

The scenario does not prove that RiverBridge is fraudulent. It shows why a short promotional claim is not enough to evaluate a complex financial system.

BENEFITS, LIMITATIONS, RISKS, AND MISCONCEPTIONS

POSSIBLE BENEFITS

- Smart contracts can automate exchanges, interest calculations, collateral checks, and distributions.
- Public blockchain records may allow selected transactions, balances, and contract activity to be inspected.
- A person may retain control of assets until authorizing a protocol interaction.
- Shared liquidity pools can coordinate assets supplied by many participants.
- Open protocols can support applications built by different developers.
- Paper analysis of DeFi can strengthen financial literacy, systems thinking, and risk evaluation.

LIMITATIONS AND RISKS

- Code can contain defects, hidden permissions, unsafe upgrades, or misunderstood rules.

- An interface can be copied, compromised, misleading, or unavailable.
- Oracles can report delayed, incomplete, manipulated, or unsuitable data.
- Collateral can lose value and trigger automatic liquidation.
- A liquidity pool can be too shallow to support an expected exchange or withdrawal.
- Yield can fall, be paid in a volatile token, or fail to compensate for principal loss.
- Smart-contract composition can carry a failure from one protocol into another.
- Stablecoins, wrapped assets, bridges, and custodians add dependencies.
- Governance tokens or administrative keys can concentrate control.
- Public transactions can expose financial activity without identifying every participant accurately.
- Fraud and market manipulation can operate through public networks.
- Legal obligations and available remedies vary across jurisdictions and facts.

COMMON MISCONCEPTIONS

- "Decentralized means nobody controls anything." Control can remain concentrated in upgrades, governance, websites, oracles, treasuries, and administrative keys.
- "A DEX has no intermediaries." A DEX can reduce reliance on a conventional custodian while adding reliance on code, liquidity providers, interfaces, networks, and governance.
- "A formula discovers the true price." An automated market maker calculates a pool price from its rules and balances. It does not know an asset's fair value.
- "Liquidity shown on a screen guarantees an easy exit." Liquidity can be shallow, change quickly, or become unavailable during stress.
- "Collateral makes lending safe." Collateral can fall in value, and liquidation can fail or cause loss.
- "Liquidation is the same as repayment." Liquidation is an enforced process that can transfer or sell collateral after a threshold is crossed.
- "Yield is guaranteed profit." Yield may be variable, promotional, paid in a volatile token, or outweighed by loss.
- "An audit removes smart-contract risk." An audit is limited by its scope, date, assumptions, and reviewed code.

» “Public records prevent fraud.” Public records provide evidence about selected on-chain activity. They do not prove identity, honesty, lawful conduct, or complete disclosure.
» “Permissionless access removes legal duties.” Applicable duties can continue even when a protocol is reachable through public code.

OFFLINE EXERCISE: QUESTION THE HIGH-YIELD CLAIM

Estimated time: 30–35 minutes

Materials: Separate paper and a pencil.

Use the fictional RiverBridge scenario. Do not use a website, account, wallet, or real asset.

1. Copy the advertisement’s two central promises: the possible annual yield and the claimed withdrawal access.
2. Identify every stated source of the possible yield.
3. For borrower interest, describe who pays and which conditions allow the payment to continue.
4. For RIVER incentives, explain how a falling token price could reduce the value of the advertised return.
5. Identify the collateral and explain what can cause liquidation.
6. Identify the oracle’s role and one way inaccurate or delayed data could cause loss.
7. Explain why a displayed StudyDollar balance does not prove that enough StudyDollar is available for immediate withdrawal.
8. Identify the administrator’s powers. Write one possible benefit and one possible risk created by those powers.
9. Identify the separate StudyDollar issuer as an additional dependency.
10. List four possible loss pathways for a depositor and four possible loss pathways for a borrower.
11. Write five questions that the advertisement should answer before a reader could evaluate the 18 percent figure.
12. Rewrite the advertisement in two or three sentences so that it communicates both the possible return and the principal risks without using promotional language.

Finish with a paragraph of five to seven sentences:

Why should a promise of greater return produce more questions rather than greater confidence? Connect your answer to the source of return, the possibility of principal loss, withdrawal conditions, and human control.

The exercise does not ask you to decide whether to participate. It asks you to identify how the system works and what information a responsible decision would require.

KNOWLEDGE CHECK

MULTIPLE CHOICE

1. Which description best defines decentralized finance?
   a. A guarantee that financial activity can occur without risk or human control
   b. Blockchain-based services that use smart contracts to perform financial-like functions
   c. Any digital payment processed by a bank
   d. A legal category that applies identically in every jurisdiction
2. What is the main role of a liquidity pool in an automated market maker?
   a. It guarantees that both pooled tokens will keep a stable value
   b. It holds tokens that the smart contract uses to support exchanges under a pricing formula
   c. It reverses trades when a participant changes direction
   d. It determines the lawful value of every token
3. Why may a DeFi borrower face liquidation?
   a. The pledged collateral falls below the protocol's required threshold
   b. The borrower asks a question about the interest rate
   c. A block explorer displays the loan
   d. The borrower keeps more collateral than the protocol requires

TRUE OR FALSE

» A high advertised yield proves that a protocol can provide greater return without increasing uncertainty, dependency, or possible loss.

SHORT EXPLANATION

» In five or six sentences, explain how a DeFi protocol can use smart contracts to automate a financial function while still depending on people, market liquidity, oracles, governance, and outside organizations.

SUMMARY AND PRACTICAL TAKEAWAYS

- DeFi is a broad category of blockchain-based services, not one product or organization.
- DeFi can perform exchange, lending, borrowing, and liquidity functions through smart contracts.
- A decentralized label does not describe who controls every layer.
- A DEX can reduce reliance on centralized custody while introducing code, interface, liquidity, and personal-security risks.
- An automated market maker calculates exchanges from a formula and pool balances.
- A pool price is not proof of fair economic value.
- Larger trades can have greater price impact in a shallow pool.
- Liquidity providers may receive fees or incentives while remaining exposed to token-price changes and contract risk.
- The independent PP/WBNB pair provides a non-promotional example of two tokens held in a BNB Smart Chain liquidity pool.
- The PP token, DEX pair, interface, block explorer, treasury, community website, and Prison Professors organization are separate components.
- DeFi lending often relies on pooled assets and overcollateralized borrowing.
- Collateral can fall in value and become eligible for liquidation.
- Liquidation protects a protocol's collateral position but can cause a borrower an involuntary loss.
- Oracles provide price information that can directly affect borrowing and liquidation.
- Yield may come from borrower interest, trading fees, incentive tokens, a treasury, or another strategy.
- A yield percentage is incomplete without its source, conditions, payment asset, fees, and possible loss.
- Available liquidity can limit an exchange or withdrawal.
- Stablecoins, wrapped assets, bridges, and connected protocols add dependencies.
- Governance and administrative powers can support repairs while concentrating control.
- Audits and public records offer bounded evidence rather than guarantees.

» Greater possible return should lead to deeper questions about the system that creates it.
» No course activity requires financial participation.

The practical takeaway is to map the system before evaluating the promise. Identify the function, assets, source of return, controls, loss pathways, exit conditions, evidence, and unknowns.

PROFILE JOURNAL ASSIGNMENT

Write one coherent journal entry of approximately 300–400 words. Write in the first person, as part of the Profile you are building. Do not submit a disconnected list of answers. Use the prompts below to organize a clear explanation:

» Define decentralized finance in your own words.
» Explain how a decentralized exchange and liquidity pool can support a token exchange.
» Use the independent PP/WBNB pair or the fictional RiverBridge scenario to identify the assets, smart contracts, pricing or lending rules, and human controls.
» Explain the role of collateral and why a decline in its value can produce liquidation.
» Identify at least three possible sources of yield and explain why each source carries conditions.
» Describe one liquidity risk and one oracle risk.
» Explain why the word decentralized does not prove that control is evenly distributed.
» Answer the Profile focus: Why should a promise of greater return lead to more questions rather than greater confidence?
» Connect the lesson to your own self-directed learning. Describe how you can examine an opportunity carefully, document your reasoning, and seek evidence before reaching a conclusion.

Your response should demonstrate technical understanding, critical thinking, and personal responsibility. Do not visit a website, connect a wallet, create an account, acquire an asset, provide liquidity, borrow, lend, or perform a transaction. Do not include any real password, private key, seed phrase, authentication code, wallet address, balance, transaction identifier, or financial-account information.

SUBMISSION REMINDER

Write your response on separate paper or in an approved institutional messaging system. Include your name or approved Profile identifier, Lesson 17: Decentralized Finance, and the date you completed the entry.

Use one of the established Prison Professors Profile methods, subject to your facility's rules:

- Send it by institutional email to Playbook@PrisonProfessors.org. Suggested subject: Web3 Lesson 17 — [date completed].
- Send it by postal mail to: Prison Professors, 1205 BMC Drive, Suite 706, Cedar Park, TX 78613.
- Send it to an approved family member or supporter who can enter it on your Profile at PrisonProfessors.org.

Keep a copy when circumstances permit. Never include passwords, private keys, seed phrases, authentication codes, account numbers, real wallet addresses, balances, transaction identifiers, transaction details, or other sensitive information in a Profile response.