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(a) does not have any tangible or physical manifestation, and does not have any intrinsic value (nor does any person make any representation or give any commitment as to its value);

(b) is non-refundable and cannot be exchanged for cash (or its equivalent value in any other digital asset) or any payment obligation by the Company, the Distributor or any of their respective affiliates;

(c) does not represent or confer on the token holder any right of any form with respect to the Company, the Distributor (or any of their respective affiliates), or its revenues or assets, including without limitation any right to receive future dividends, revenue, shares, ownership right or stake, share or security, any voting, distribution, redemption, liquidation, proprietary (including all forms of intellectual property or licence rights), right to receive accounts, financial statements or other financial data, the right to requisition or participate in shareholder meetings, the right to nominate a director, or other financial or legal rights or equivalent rights, or intellectual property rights or any other form of participation in or relating to Pledge Protocol, the Company, the Distributor and/or their service providers;

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(e) is not intended to be a representation of money (including electronic money), security, commodity, bond, debt instrument, unit in a collective investment scheme or any other kind of financial instrument or investment;

(f) is not a loan to the Company, the Distributor or any of their respective affiliates, is not intended to represent a debt owed by the Company, the Distributor or any of their respective affiliates, and there is no expectation of profit; and

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Pledge

The Liquidity Protocol for All.

Version 5.0

PLEDGE FINANCE FOUNDATION

For terminology definitions please find the number associated with the word under the Bibliography – Definitions section.

Abstract:

Pledge Protocol ("Pledge") is a fully autonomous, algorithmic lending platform on the <u>Binance Smart Chain</u>[1]. Pledge is a decentralized protocol[2] which establishes lending markets with algorithmically determined interest rates and provides its own token in exchange called pTokens based on market forces of supply and demand. This allows users to frictionlessly exchange the time value of money derived from collateralized digital assets and stablecoins[4]. When a user holds pTokens they receive a fixed interest rate called annual percentage yield (APY[5]) with earnings accumulated per block, while borrowers pay fixed and predictable interest. Furthermore users can also participate as liquidity providers who can inject capital into token liquidity pools and earn an interest rate. Pledge unlike other DeFi[6] lending protocols can create various liquidity pools[7] with different maturities for a given crypto asset featuring fixed lending terms for each user transaction.

Contents

i. Building Blocks

Introduction

The Pledge Protocol is designed to enable a fully decentralized marketplace for fixed-rate lending/borrowing on Binance Smart Chain. The Pledge Protocol is inspired by Maker Dao[1] and Compound[2].

Problems

Current Problems with Centralized Finance

Although DeFi is still in its early years, DeFi Markets offers a breadth of new advantages over Traditional Finance Markets and CeFi[8] Centralized Crypto Finance markets. Traditional finance markets are financial institutions like banks or peer to peer lenders that provide lending services seen today on US stock markets such as Repos, CDs and Treasury Bills or personal finance such as Car Loans and Mortgages.

Similarly, Ce-Fi is essentially crypto banking that centralizes the crypto currency trades and funds are managed by specifically running the central exchange, this means you don't own your private key to access your wallet. While both traditional and Ce-Fi financial markets work fine, they are imperfect in their transitions for users. They are susceptible to getting hacked,

malicious intent in the form of bad loan agreements, high transactional fees, instant liquidation delays and long due diligence processes such as KYC[9] to name a few.

What is DeFi?

DeFi or Decentralized finance is a blockchain-based form of finance that does not rely on central financial intermediaries such as brokerages, exchanges, or banks to offer traditional financial instruments; and instead, utilizes self-executing smart contracts[10] on blockchains, the most common being Ethereum. DeFi lending allows users to become lenders or borrowers in a completely decentralized and permissionless way while maintaining full custody over their coins. Defi Lending is based on smart contracts that run on open blockchains predominately Ethereum. This is why DeFi lending in contrast to CeFi lending is accessible to everyone without a need of providing your personal details or trusting someone else to hold your funds.[8] The rapid expansion of Decentralized Finance (or simply DeFi) is committed to building open financial services on blockchain networks, aiming at creating an open-source, permissionless, and transparent financial service ecosystem available to everyone without central authority.

Instead of relying upon those centralized financial institutions as intermediaries, DeFi applications are deployed on top of blockchain networks, using infrastructure that distributes data and value across a network of computers. Users can subvert legacy central-entity-controlled business models, which are slow, costly and restrictive with credit permissions.

DeFi Market Problems

Now even in the DeFi market there are different platforms to choose from each with their own merits and limits. Many available DeFi lending company protocols only feature floating rate loans mainly marketed towards crypto traders whose interest to participate are focused on short term day trades. However a missing component of the current DeFi ecosystem is a fixed-rate, fixed-term financing market, one of the most common type of traditional financing market. The US traditional fixed income markets are the largest in the world, comprising about 40.0% of the $114 trillion securities outstanding across the globe, or $46 trillion (as of 2Q20) [3].

Furthermore, while it is true that Ethereum is the largest DeFi platform for smart contracts and is secure, it suffers in its ability to scale as more companies utilize the blockchain for Ethereum mining computational power. Ethereum currently only supports approximately 15 transactions

per second, this becomes a limiting factor when it comes to onboarding millions of new users

and launching many more decentralized applications. As more transactions happen, gas prices (the network fee every Ethereum user must pay to transact on Ethereum) have become highly volatile, creating significant impediment to broader adoption.

Solution - What makes Pledge different

While Pledge is not one of the first DeFi lending protocols, it has been able to learn from existing DeFi projects over the past 5 years. Unlike most DeFi lending protocols, Pledge is not based on Ethereum but on Binance Smart Chain. Pledge utilizes the Binance Smart Chain for fast, low-cost transactions with access a deep network of wrapped tokens and liquidity. Although Binance Smart Chain is a smaller smart contract DeFi ecosystem than Ethereum, it offers some advantages namely its block time and gas limits per block are better optimized than Ethereum's.

Furthermore, Pledge's goals are different, Pledge aims to be the crypto-asset lending platform for non-traders. Pledge answers the need for longer-term financing in real world applications, mainly serving crypto-asset holders to diversify their portfolio with non-crypto assets, e.g., real estate, without the friction of adjusting existing positions.

Crypto asset holders in need of fiat liquidity can pledge their crypto assets on the platform in return for stable coins. For borrowers, they can deposit crypto assets such as bitcoin on the protocol as collateral, in return for stable and predictable flows of stablecoins, e.g. BUSD, which can be converted to fiat dollars and allocated towards non-crypto assets. For lenders/liquidity providers, they can provide liquidity by locking stable coins such as BUSD in the liquidity pools and get a fixed return along with the principal when the loan is matured.

Pledge is aimed at non-traders who are interested in taking out longer-term, fixed-rate loans for diversification purposes. Pledge enables users to lend and borrow at fixed rates at predefined maturities. By reducing the exposure to interest rate volatility, Pledge is more likely to create a decentralized lending market that will accelerate the adoption of decentralized finance in people's daily economic activities.

Protocol Architecture

There are three types of users who can interact with the Pledge Protocol: borrowers, lenders, and liquidity providers.

The Pledge protocol is on Binance Smart Chain, and it facilitates fixed-rate, fixed-term crypto asset lending and borrowing using pTokens. pToken offers a simple way for Pledge users to commit to transfers of value at times in the future. Buying and selling pToken allows users to move value from present value to future value in a time value money perspective. To facilitate the borrow, lending and liquidation functionalities, these pTokens are transferable tokens that represent a claim on a positive (entitled to receive) or negative (obligated to pay) cash flow at its designated maturity.

It is important to reiterate that a liquidity pool simply comprises a set of autonomous smart contracts deployed on the relevant blockchain network, operated directly by users calling functions on it (which allows them to interact with other users and/or pool their own selected assets in a peer-to-peer manner). There is no further control by or interaction with the original entity which had deployed the smart contract (which entity solely functions as a provider of technical tools for users, and is not offering any sort of securities product or regulated service).

Lending

Users can supply stablecoins to the Pledge Protocol and participate as lenders. Lenders can deposit stable coins into the liquidity pool to receive corresponding **pTokens** (e.g. deposit BUSD[14] to receive pBUSD), which can be used to redeem a fixed amount of stablecoins at a specific point in the future. The take_p_token function allows lenders to deposit liquid stablecoins (i.e. BUSD) to the market in exchange for the right to receive a cash flow at a future maturity. The amount which can be withdrawn is greater than the initial deposited amount to compensate the lender. The exchange rate that the user receives implies a fixed interest rate on their loan between the moment they trade and the time that their pTokens mature.

pTokens like pBUSD are the building blocks of the Pledge Platform, which are transferable tokens that represent a claim on a positive (entitled to receive) or negative (obligated to pay) cash flow at its designated maturity. pTokens can be used to hedge against other assets or moved into cold storage wallets that support Binance Smart Chain.

- Time Period – Minimum 3 Months
- General Steps –

1. The lender decide how much stablecoins such as DAI or USDC to lend and how long to hold that deposit for
2. The lender will receive a fixed interest rate payment amount as part of that 1ˢᵗ decision for depositing the stablecoins
3. The lender will receive periodic payments in the form of pTokens
4. When the loaned amount/loan amount matures, the lender can redeem their pToken for underlying assets.

In the following example, a lender deposits 1,000 BUSD to the liquidity pool in exchange for 1,025 3-month-pBUSD. With a 3 month maturity, this implies a fixed APY of 10%. When the loan matures on March 1, 2021, the lender is eligible for redeeming 1,000 BUSD principal and the 25 BUSD interest. (non-compounding interest in this example)

Borrowing

Users who want to borrow stablecoins from the Pledge liquidity pools must deposit pTokens collateralized by corresponding crypto assets (e.g. BTCB). The pTokens must be over collateralized to prevent a liquidation event. The pTokens can be deposited into the liquidity pool in exchange for corresponding stablecoins. pTokens entails a future obligation to repay a larger, fixed amount of corresponding tokens at a specific point in the future. The deposit_p_token function allows users to deposit a pToken obligation in order to receive liquid tokens. pTokens are secured by over-collateralization and will enable up to a certain percentage (e.g. 75%) of that collateral value borrowed. More details on liquidation will be further discussed in the next section.

Borrowers will be subjected to a fixed interest rate applied per block. To redeem the collateral asset, the borrower must pay off their origination balance and compounded interest back to the protocol.

- Time Period – Minimum – 3 Months
- General Steps –
    1. The Borrower deposits an amount of stablecoin such as ETH, USDC or DAI to put up as collateral.
    2. Then the borrower decides how much money he/she would need to borrow and

how much time he/she would take to pay off the borrowed amount. As they

decide this, a borrower interest rate on screen will appear for the borrower to pay while taking the loan out.

3. The borrower then receives pTokens worth the value desired in the borrowed amount.

4. The borrower can now sell the positive pToken into its liquidity pool in exchange for other digital assets, typically in the form of a stablecoin such as DAI or USDC.

5. Now the borrower has digital assets they can withdraw and a future obligation to repay a fixed amount of digital assets by their deposit. Note the borrowed amount must be less than the collateralized amount.

6. When the debt matures at a future date, the borrower can either repay the currency that was owed or their collateral can be used to cover their debt to the protocol.

In the following example, a borrower pledges 1 BTCB as collateral to mint 41,000 3- month-pBUSD, implying a fixed APY of 10%, which can be exchanged for 40,000 BUSD tokens in the liquidity pool. When the loan matures on March 1, 2021, the borrower is obligated to pay back 40,000 BUSD principal and 1,000 BUSD interest (non-compounding interest in this example)

Providing Liquidity

Liquidity providers enable and capitalize liquidity pools on Pledge. They deposit stablecoins and corresponding pToken pairs at the prevailing exchange rate to the liquidity pools and act as counterparty to the lenders and borrowers that are active on the protocol. They can provide liquidity to a market at a specified maturity by calling the add_liquidity and remove_Liquidity functions.

When a liquidity provider supplies tokens to a liquidity pool, liquidity tokens are minted to account for the contribution. Liquidity tokens represent their proportional claim on both tokens in the pool. Transaction fees are charged each time a lender or borrower swaps between a

token pair which is shared among liquidity providers pro rata to their contribution to the pool. A liquidity provider can redeem liquidity tokens for correspondent underlying assets and eligible transaction fees at any time.

- Time period – no time period
  1. The liquidity provider first decides a liquidity pool and the amount of stablecoin they want to supply as liquidity.
  2. Then the liquidity provider receives pTokens as the value amount of stablecoin they plan to supply to the liquidity pools.
  3. The liquidity provider then deposits their stablecoin and their positive pTokens into the liquidity pool and receives liquidity tokens in return.
  4. The liquidity provider now has liquidity and an obligation that is offset by the positive pToken that their liquidity tokens entitle them to.
  5. As trades are made with lenders and borrowers the pToken money amount increases and the future value of stablecoin increases over time from the present value position. This allows the liquidity provider to earn more stablecoin over time.
  6. A liquidity provider can redeem liquidity tokens for their underlying assets or stablecoins at any time.
- Dynamics of Liquidity Providers
  - Note when a liquidity provider provides stablecoins to a liquidity pool, they receive liquidity tokens. These liquidity tokens represent their proportional claim on the stablecoins and the pTokens in that pool.
  - A liquidity provider can redeem liquidity tokens for these underlying assets/stablecoins at any time.
  - A liquidity provider's profit and loss shows them the amount of money they have made or lost at any given time. A liquidity provider's P&L is calculated as the difference between their net current holdings and their initial deposit. At the time of the initial deposit, a liquidity provider's P&L is 0 because their net current holdings = their initial deposit.
  - Over time as lenders and borrowers make trades, the stablecoin that is deposited increases in value as more pTokens are issued. When this happens the liquidity provider has a positive net pToken position. If they were to withdraw their liquidity now, they would hold more stable coins than stablecoin then when they deposited. The liquidity provider's positive pToken position is dependent on the exchange rate between the

present value stablecoin and the future value stablecoin or the rate of the pToken money in circulation.

Fixed Interest Rate

Exchange Rate: the spot rate at which pTokens are exchanged for liquid tokens.
Implied Period Rate: the interest rate over the period that is implied by the exchange rate (i.e. impliedPeriodRate = (exchangeRate - 1) * MATURITY_LENGTH / timeToMaturity)

Note that the conversion rate of a stablecoin and its pToken is calculated when the trade is made. This means, in effect, the interest rate for this lending transaction is fixed from that point on. A lender will not have to deposit any more assets for the cash flow that they are promised; the borrower will not have to pay more interest for the liquid token they are to receive.

For example, a lender deposits 1,000 BUSD that mature in 1 year. Once this trade is made, the lender has entered into a fixed-rate loan at a 10% annualized rate for a term of 1 year. From this point on, none of these terms will change. This does not mean that the next lender to trade will also receive the same 10% annualized rate and the next lender might receive a different fixed rate. This is how Pledge provides fixed rates at fixed maturities.

Interest Rate Curve

Pledge Protocol features a special liquidity curve designed to minimize slippage when trading pTokens based on the logit function, which greatly reduces the slippage and can create an upper / lower bound for the exchange rate. The center part of the curve is relatively flat thus remains a very stable exchange rate under normal conditions. The edges of the curve change exponentially and will incentivize the market to trade the exchange rate back to the flatter, middle area. The liquidity curve is a parameter that can be changed via on-chain governance.

Implementation & Architecture

The Pledge Contract

Building Blocks

- Pledge contract: work with BSC smart chain and Chainlink chain, to fulfill borrow/lend/liquidation functionalities
- HTML Pages: including html pages, css, images which will be shown on the user's browser, support the user to do the process
- Javascript code: code which runs on the user's browser and get the input from HTML pages, and call wallet plugin to work with pledge contract

Other building block we will use but not implemented by us:

- Price contract: runs on the chainlink chain to provide the updated price for the coin
- BSC Dataseed service: in the ethernet, it is infura, and for BSC, it is dataseed service provided by Binance.

User Accounts

Each participant using Pledge can have one or multiple accounts represented by their BSC address. Each account has a portfolio of liquid token balance, pToken balance, and liquidity token balance, which can be aggregated to calculate the **net position per digital asset** and **excess collateral** of the account.

Excess Collateral

Excess collateral is the amount of tokens an account has deposited beyond the minimum collateralization requirement for its current obligations, used to evaluate an account's collateral position. It represents a buffer to withstand market price volatility to prevent liquidation events. If an account's excess collateral figure is high, the account is adequately collateralized, with the excess collateral being the amount of tokens it is allowed to withdraw. If the account's excess collateral figure is negative, it is under-collateralized and subject to liquidation.

The amount of an account's excess collateral is derived from the aggregated amount of the net position of each currency converted to a BUSD-denominated figure.

For each digital asset, an account has 3 positions: liquid tokens (BUSD, BTCB, BNB), pTokens

(pBUSD, pDAI), and Liquidity Tokens. Calculating the excess collateral amount requires

converting the present value of these assets to a common denominator - BUSD - and aggregate them. In the conversion process, a few measures are applied to mitigate price volatility: when calculating the present value of pTokens, a reduction is applied to positive pToken balance; a buffer is applied when converting the collateral value to BUSD to account for the exchange rate risk incurred.

Present Value Conversion When calculating the present value of each collateral asset in an account's collateral position, on Pledge, a reduction will be applied to assets (not debt). In the calculation, liquidity tokens are decomposed and added to liquid token and pToken positions accordingly with a 25% reduction to account for liquidity risks. When discounting pTokens for its present value, the protocol applies another reduction to positive cash flows under the exchange rate retrieved from liquidity pools to mitigate risk.

BUSD-denominated Conversion After Pledge calculates the value of an account's collateral position of each asset, Pledge aggregates BUSD-denominated positions of each currency. On Pledge, a discount will be applied to every positive collateral asset position that reflects the riskiness or price volatility of that asset. This discount is known as a **buffer**. It ensures that there is ample time for an account to be liquidated before a market move pushes it into insolvency.

Liquidation Risk

When an account no longer has any excess collateral to buffer price volatility, it will be liquidated to ensure solvency. This can occur if the price of collateral assets plunge.

When a liquidation event is triggered, assets will be sold from an account's portfolio in order to generate BUSD to mitigate risks. The liquidation process will first extract collateral from liquid token balances before proceeding on to other balances with no immediate liquidity.

Liquidating Liquid Token Balances

BTCB can be held as collateral for minting pBUSD tokens. Take the following portfolio that has a 40% currency buffer on the BTCB/BUSD price:

Initial Portfolio					
	BTCB	pBUSD		BTCB/BUSD	60,000.00

	(collateral)	(debt)		Currency Buffer	1.40

Position	1.20	-50,000.00		collateralization %	102.86%
Position (BUSD-Denominated)	51,428.57	-50000.00		free collateral	1,428.57

Assume this portfolio was collateralized when BTCB/BUSD was priced at 60,000, but the TBTC price has since dropped to 50,000. The portfolio is at risk of becoming insolvent, liquidation process will be triggered.

Liquidating Cash Tokens (before liquidation)					
	BTCB (collateral)	pBUSD (debt)		BTCB/BUSD	50,000.00
				Currency Buffer	1.40
Position	1.20	-50,000.00		collateralization %	85.71%
Position (BUSD-Denominated)	42,857.14	-50,000.00		free collateral	-7,142.86

Once liquidation is triggered, anyone can act as a liquidator to purchase the BTCB with BUSD at a discount to the prevailing price and deposit BUSD to offset the debt. (0.62BTBC was liquidated for 15,600 BUSD in our case). Now the portfolio looks as follows (note that the -50,000 BUSD debt is net out with the 50,000 BUSD balance at the price of 47,500 BTBC/BUSD)

Liquidating Cash Tokens (after liquidation)					
	BTCB (collateral)	pBUSD (debt)		BTCB/BUSD	50,000.00
				Currency Buffer	1.40
Position	0.58	-20,360.00		collateralization %	101.04%
Position (BUSD-Denominated)	20,571.43	-20,360.00		liquidation %	52%

Liquidating pTokens Balances

Liquidating pTokens works similarly to liquidating cash with one extra step. The liquidator must

first convert the pTokens to cash by either selling them in Pledge liquidity pools or by purchasing the pTokens at its collateral value. Once the pTokens are converted to cash tokens, liquidation proceeds as normal. Liquidating ptokens improves an account's excess collateral position by increasing the account's collateral surplus or decreasing the account's collateral requirement.

Governance

The native cryptographically-secured fungible protocol token of Pledge Protocol (ticker symbol **PLGR**) is a transferable representation of attributed governance and utility functions specified in the protocol/code of Pledge Protocol, and which is designed to be used solely as an interoperable utility token thereon. PLGR does not in any way represent any shareholding, participation, right, title, or interest in the Company, the Distributor, their respective affiliates, or any other company, enterprise or undertaking, nor will PLGR entitle token holders to any promise of fees, dividends, revenue, profits or investment returns, and are not intended to constitute securities in the United States, Panama, Singapore or any relevant jurisdiction. PLGR may only be utilised on Pledge Protocol, and ownership of PLGR carries no rights, express or implied, other than the right to use PLGR as a means to enable usage of and interaction within Pledge Protocol.

PLGR provides the economic incentives which will be distributed to encourage users to exert efforts towards contribution and participation in the ecosystem on Pledge Protocol, thereby creating a mutually beneficial system where every participant is fairly compensated for its efforts. PLGR is an integral and indispensable part of Pledge Protocol, because without PLGR, there would be no incentive for users to expend resources to participate in activities or provide services for the benefit of the entire ecosystem on Pledge Protocol. Given that additional PLGR will be awarded to a user based only on its actual usage, activity and efforts made on Pledge Protocol and/or proportionate to the frequency and volume of transactions, users of Pledge Protocol and/or holders of PLGR which did not actively participate will not receive any PLGR incentives. At genesis, 10,000 PLGR tokens will be minted and distributed to active contributors so as to economically incentivize community participation.

Governance is designed to bootstrap the long-term sustainability and growth of the Pledge Protocol. PLGR would allow holders to create and vote on on-chain governance proposals to determine future features and/or parameters of Pledge Protocol. Governance features include:

- Adding new crypto assets or stablecoins to the protocol
- Adjusting variable interest rates for all markets
- Setting fixed interest rates for each market
- Adding a new market for different maturity
- Voting on protocol improvements/proposals
- Delegate protocol reserve distribution schedules

The right to vote is restricted solely to voting on features of Pledge Protocol; it does not entitle PLGR holders to vote on the operation and management of the Company, its affiliates, or their assets or the disposition of such assets to token holders, or select the board of directors of these entities, or determine the development direction of these entities, does not constitute any equity interest in any of these entities or any collective investment scheme; the arrangement is not intended to be any form of joint venture or partnership.

Pledge Protocol itself is simply a blockchain protocol which, by design, does not offer any resources for utilisation, so users would need to be incentivised to provide necessary liquidity/assets for protocol transactions. To incentivise user participation during the initial phases, a certain amount of PLGR tokens will be allocated to all borrowers as rewards to boost initial liquidity, proportional to the debt amount each account borrows. Similarly, a certain amount of PLGR tokens will also be allocated to lender/liquidity providers as rewards, proportional to the amount of liquidity each account provides.

Conclusion

The Pledge Protocol is designed to provide a fully-decentralized and secured marketplace for fixed-interest, fixed-term lending. Pledge enables lenders to utilize their idle crypto assets by supplying liquidity to earn a fixed-amount of interest earnings; it also allows borrowers in need of liquidity to take loans pledged by over-collateralized crypto assets at a fixed, predictable cost. Pledge will be deployed on Binance Smart Chain, to avoid friction and pain points when using Ethereum, including congestion, high gas fees and lack of interoperability with other ecosystems. This enables the creation of a scalable liquidity market completely governed by the community through its governance token PLGR.

Bibliography

References

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2. *MakerDAO and DAI, whitepaper written by Maker Foundation Team, December*

2017 https://makerdao.com/whitepaper/DaiDec17WP .pdf

3. *DeFi Pulse, Maker, Value Locked: https://defipulse.com/maker*
4. *Binance Smart Chain, https://www.binance.org/en#smartChain*
5. *Notional , whitepaper https://docs.notional.finance/developers/whitepaper/whitepaper*
6. *COMP Token Governance, Robert Leshner, February https://medium.com/compound-finance/compound-governance-5531f524cf68*

7. *CeFi definition example – https://www.leewayhertz.com/defi-vs-cefi/*

8. *YouTuber Finematics – Lending and Borrowing in DEFI*

Explained Definitions

1. Binance Smart Chain – is a network layer block chain that has smart contract functionality, runs parallel to Binance Chain, and has compatibility with the Ethereum Virtual Machine (EVM). It is an independent blockchain that could run even if Binance Chain went offline.
   a. https://academy.binance.com/en
2. Protocols – in crypto are basic set of rules that allow data to be shared between computers. For cryptocurrencies, they establish the structure of the blockchain – the distributed database that allow digital money to be securely exchanged on the internet. They also define the rules which dictate when a new block on the blockchain is created.
   a. https://www.coinbase.com/learn/crypto-basics/what-is-a-protocol
3. Ethereum – Ethereum is a decentralized, open-source blockchain with smart contract functionality. Ether (ETH) is the native cryptocurrency of the platform. After Bitcoin, it is the second-largest cryptocurrency by market capitalization.[1] Ethereum is the most actively used blockchain.
   a. https://en.wikipedia.org/wiki/Ethereum

4. Stablecoins – Stablecoins are cryptocurrencies that attempt to peg their market value to some external reference. Stablecoins may be pegged to a currency like the U.S. dollar or to a commodity's price such as gold.
    a. https://www.investopedia.com/terms/s/stablecoin.asp
5. APY - stands for annual percentage yield. It takes into account the interest rate and compounding period to give you a single number that represents how much you will earn from that investment in one year.
    a. https://www.depositaccounts.com/blog/understanding-interest-rate-and-apy.html
6. DeFi - Decentralized finance is a blockchain-based form of finance that does not rely on central financial intermediaries such as brokerages, exchanges, or banks to offer traditional financial instruments, and instead utilizes smart contracts on blockchains, the most common being Ethereum.
    a. https://en.wikipedia.org/wiki/Decentralized_finance
7. Liquidity Pools – are crypto assets that are kept together to facilitate the trading of trading pairs (borrowing to lending, vice versa) on decentralized exchanges. The liquidity pool are pools of tokens locked in smart contracts that provide liquidity in decentralized exchanges in an attempt to attenuate the problems caused by the illiquidity typical of such systems. Liquidity pools are also the name given to the intersection of orders which create price levels that once reached – see the asset decide whether to continue to move in upward or downward.
    a. https://coinmarketcap.com/alexandria/glossary/liquidity-pool
8. CeFi - In centralized finance (CeFi), all crypto trade orders are handled through a central exchange. Funds are managed by specific running the central exchange. It means you don't own a private key that provides you access to your wallet and also, you are subject to the rules set by the centralized exchange.
    a. https://www.leewayhertz.com/defi-vs-cefi/
9. KYC – The Know Your Client or Know Your Customer is a standard in the investment industry that ensures investment advisors know detailed information about their clients' risk tolerance, investment knowledge, and financial position. KYC protects both clients and investment advisors.
    a. https://www.investopedia.com/terms/k/knowyourclient.asp
10. Smart Contract – A smart contract is a computer program or a transaction protocol which is intended to automatically execute, control or document legally relevant events and actions according to the terms of a contract or an agreement.
    a. https://en.wikipedia.org/wiki/Smart_contract

11. Dai – Dai is a stablecoin cryptocurrency which aims to keep its value as close to one United States dollar as possible through an automated system of smart contracts on the Ethereum blockchain. It was created by MakerDAO.
    a. https://en.wikipedia.org/wiki/Dai_(cryptocurrency)
12. USDC – USDC represents fiat, or government money, on the blockchain. It is redeemable on a 1:1 basis for U.S. dollars, issued by regulated financial institutions and backed by fully reserved assets which are audited by accounting firm Grant Thornton LLP every month.
    a. https://www.coindesk.com/price/usd-coin
13. ETH – stands for Ether, Ether is the solution to the issue of payment—a digital asset-bearer like a bond or other security. You can call it the cryptocurrency of the Ethereum network. Just like cash, it doesn't require a third party to process or approve transactions.
    a. https://www.investopedia.com/tech/what-ether-it-same-ethereum/
14. BUSD – is a stablecoin provided by Binance developed in partnership between Binance and Paxos. It is backed 1:1 by US Dollars.
    a. https://www.paxos.com/busd/