Project : ETH Wallet

Scenario:-

Sakshi and Angel are friends they wanted to create a saving account together with exploring the capabilities of BLOCKCHAIN and wanted to implement time-lock. This time-lock will help them to hold their extra expenses. Angel starts by defining the structure of the Time-Locked Wallet contract. The contract will have the following functionalities:

1.Create a Wallet: Users can create a time-locked wallet by providing the lock-up duration and depositing funds into the wallet.

2.Lock Funds: Once the wallet is created, users can lock their desired amount of funds within the wallet. The funds will remain locked until the specified lock-up duration has passed.

3.Release Funds: After the lock-up duration has expired, the users can initiate a request to release the funds. The contract will verify that the lock-up duration has passed, and if so, it will transfer the funds back to the user's account.

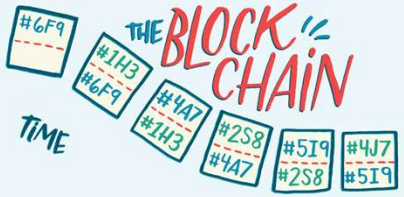
4.Check Wallet Balance: Users can check the current balance of their time-locked wallet at any time.

Once the contract is deployed to the main Ethereum network, Sakshi and Angel promote their Time-Locked Wallet contract to their friends and the wider community. They believe that this contract can be beneficial for individuals who want to enforce delayed transactions or create time-based savings accounts without the need for intermediaries.

Users start utilizing the Time-Locked Wallet contract for various purposes. Some users lock their funds for a specified period to enforce delayed payments, ensuring that both parties fulfil their obligations before the funds are released. Others create time-based savings accounts, locking their funds for a certain duration to avoid impulsive spending and encourage disciplined financial habits.

The Time-Locked Wallet contract gains popularity and receives positive feedback from users who appreciate the simplicity and security it provides. Angel continues to monitor the contract, addressing any issues and incorporating user feedback to enhance its features and usability.

In this way, Our Time-Locked Wallet contract becomes a trusted and widely used solution for individuals seeking time-based restrictions on their funds, providing a valuable tool for enforcing delayed transactions and promoting responsible financial practices in the blockchain ecosystem.



What are the specific business problems or challenge that the scenario will address?

The scenario of creating a savings account with a time-lock using blockchain addresses the following specific business problems or challenges:

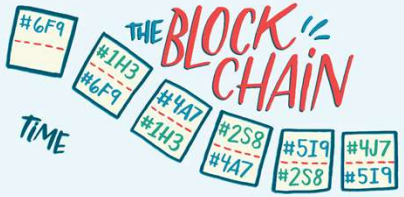
Lack of financial discipline: Many individuals struggle with controlling their expenses and saving money. By implementing a time-lock feature, the scenario aims to address this challenge by temporarily restricting access to the funds, thereby encouraging disciplined saving habits.

Shared savings goals: Sakshi and Angel, as friends, want to collaborate and work towards their shared savings goals. The scenario allows them to create a joint savings account using blockchain technology, enabling them to pool their resources and track their progress collectively.

Transparent and secure transactions: Blockchain technology provides transparency and security by maintaining a decentralized ledger of transactions. This ensures that all savings contributions, withdrawals, and transfers between Sakshi and Angel are recorded immutably, reducing the risk of fraud or disputes.

Empowering individuals: The scenario leverages blockchain's capabilities to empower individuals by giving them control over their savings and spending habits. The time-lock feature helps them prioritize their financial goals, avoid impulsive expenses, and build a strong foundation for their future.

By addressing these challenges, the scenario enables Sakshi and Angel to actively manage their savings, develop financial discipline, and achieve their shared goals effectively.



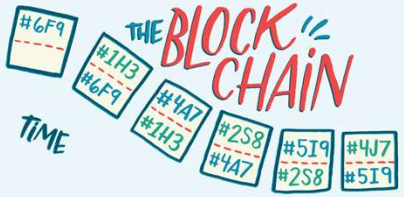
What is the current way of solving this business problem?

Currently, Individuals typically address the challenge of saving money and managing expenses through traditional banking methods. They may open a joint savings account at a bank and set up automatic transfers to contribute to their savings regularly. However, these methods do not provide specific solutions for the challenges mentioned in the scenario.

To control their expenses, individuals often rely on personal budgeting techniques such as tracking expenses manually, setting spending limits, or using budgeting apps. These methods require self-discipline and manual effort to adhere to the budget and savings goals.

In terms of transparency and security, traditional banking systems offer centralized databases to record transactions. However, this centralization can lead to vulnerabilities, data breaches, or the need for intermediaries to facilitate transactions, which may increase costs and reduce efficiency.

Overall, the current approach lacks the technological benefits provided by blockchain, such as decentralization, immutability, and smart contract capabilities. These features can significantly enhance the management of savings and expenses, address the challenges of financial discipline, and provide a secure and transparent platform for individuals like Sakshi and Angel to achieve their savings goals.



Assuming the business problem is large, what specifies aspects of this problem will be addressed?

Here are the specified aspects of the business problem addressed by approaching the required solution.

Lack of financial discipline:

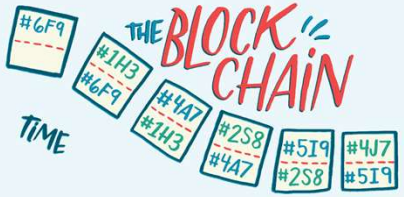
The Time-Locked Wallet contract enforces financial discipline by allowing users to lock their funds for a specified duration, preventing impulsive spending. Utilizes smart contracts on the blockchain to automatically restrict access to funds until the lock-up duration expires. Promotes responsible financial habits and helps individuals stay on track with their savings goals.

Delayed transactions:

The contract enables delayed transactions by requiring both parties to fulfill their obligations before funds are released. Utilizes the immutability and transparency of blockchain to ensure trust and accountability in transactions. Eliminates the need for intermediaries, reducing costs and increasing efficiency in executing delayed transactions.

Time-based savings accounts:

Users can create time-based savings accounts using the Time-Locked Wallet contract. Locking funds for a specific duration prevents impulsive spending and encourages disciplined saving habits. Provides a secure and transparent platform for individuals to manage their savings goals.

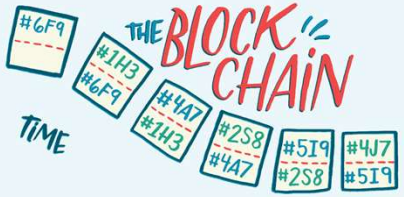


Assuming the business problem is large, what specifies aspects of this problem will be addressed?

Removal of intermediaries:
Blockchain technology eliminates the need for intermediaries in managing the Time-Locked Wallet. Smart contracts automate the locking and releasing of funds, reducing reliance on third-party entities. Enhances security and privacy by removing the risk of unauthorized access or manipulation by intermediaries.

Simplicity and security:
The Time-Locked Wallet contract offers a user-friendly interface for creating wallets, locking funds, releasing funds, and checking balances. Utilizes blockchain's cryptographic security measures to ensure the safety and integrity of transactions. Provides a seamless and secure experience for users while managing their funds.

By addressing these specified aspects and incorporating technical points such as smart contracts, blockchain security, removal of intermediaries, and user-friendly interfaces, We can effectively pitch the solution to our problem. Emphasize the benefits of financial discipline, delayed transactions, time-based savings, and enhanced security that the Time-Locked Wallet contract brings to the table.



Who are the business network participants (organizations) involved and what are their roles?

In the our scenario, the primary business network participants (organizations) involved are as follows:

Sakshi and Angel: They are the friends who initiate the idea of creating a joint savings account and exploring the capabilities of blockchain technology. They play a key role in conceptualizing and promoting the Time-Locked Wallet contract.

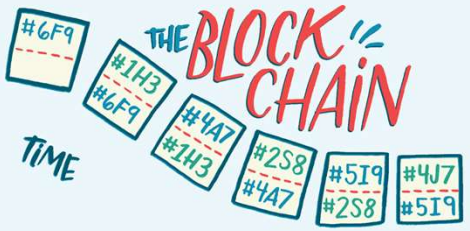
Users: Users refer to individuals who utilize the Time-Locked Wallet contract for various purposes such as enforcing delayed transactions or creating time-based savings accounts. They interact directly with the contract to create wallets, lock funds, release funds, and check balances.

Ethereum Network: The Ethereum network is the underlying blockchain platform where the Time-Locked Wallet contract is deployed. It provides the infrastructure and computational resources for executing smart contracts and recording transactions.

Smart Contract Developer: The smart contract developer, represented by Angel in the scenario, is responsible for developing and deploying the Time-Locked Wallet contract on the Ethereum network. They design the contract's functionalities, implement the time-lock mechanism, and ensure its proper functioning.

Community and Peers: Sakshi and Angel promote the Time-Locked Wallet contract to their friends and the wider community. The community members and peers, as potential users, contribute to the adoption and growth of the contract by utilizing it and providing feedback.

While the scenario primarily focuses on the involvement of Sakshi, Angel, and the users, it's important to note that the Ethereum network serves as the underlying infrastructure supporting the execution of the Time-Locked Wallet contract.
The **developer** plays a crucial role in designing and deploying the contract, while the community and peers contribute to its adoption and improvement through usage and feedback.



Who are the specific people within the organization and what are their job roles?

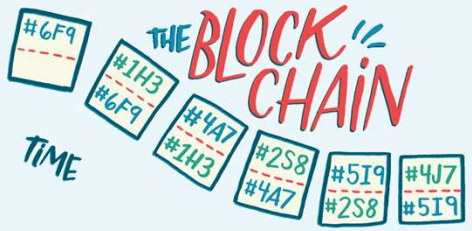
In the given scenario, the specific individuals within the organization and their job roles are as follows:

Sakshi: Sakshi is one of the friends involved in creating the joint savings account and exploring blockchain technology. While the scenario does not explicitly mention Sakshi's job role, she is an active participant in conceptualizing the Time-Locked Wallet contract and promoting its adoption.

Angel: Angel is the other friend involved in the scenario. Angel takes on the role of a smart contract developer. They are responsible for defining the structure of the Time-Locked Wallet contract, implementing its functionalities, and ensuring its proper deployment on the Ethereum network.

It's important to note that the scenario focuses more on the functionality and adoption of the Time-Locked Wallet contract rather than specific organizational roles within a formal business setting. Sakshi and Angel represent individuals interested in utilizing blockchain technology for their financial management needs.

The users, community, and peers mentioned in the scenario can be considered as external stakeholders rather than specific individuals within the organization. They play a vital role in adopting and providing feedback on the Time-Locked Wallet contract.



What assets are involved and what is the key information associated with the assets?

In the given scenario, the primary asset involved is funds or money. Users deposit their funds into the Time-Locked Wallets created through the contract. These funds represent the asset being held within the wallet.

The key information associated with these assets includes:

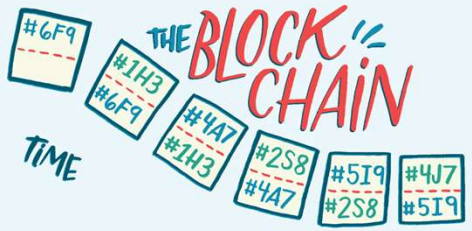
Amount: The specific amount of funds that users deposit into their Time-Locked Wallets. This information determines the value of the asset held within the wallet.

Lock-up Duration: The duration for which the funds are locked within the Time-Locked Wallet. This information indicates the period during which the funds are inaccessible and serves as a time-based restriction.

Release Request: Once the lock-up duration expires, users can initiate a request to release the funds. This information includes the user's request to unlock the funds and transfer them back to their account.

Balance: The current balance of the Time-Locked Wallet represents the remaining funds that have not been released. This information allows users to track the available funds in their wallet at any given time.

It's important to note that while the primary asset involved is funds, the Time-Locked Wallet contract does not restrict its usage to only monetary assets. Depending on the implementation, the contract can potentially support locking and releasing other digital assets or tokens within the blockchain ecosystem, expanding the scope of assets involved and associated information.



What are the transactions involved, between whom, and what assets are associated with transactions?

In the given scenario, the transactions involved are primarily related to the Time-Locked Wallet contract. The following transactions occur:

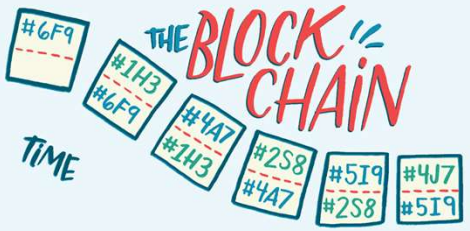
Creation of Wallet: Users initiate a transaction to create a time-locked wallet by providing the lock-up duration and depositing funds into the wallet. This transaction occurs between the user and the contract.

Locking of Funds: Once the wallet is created, users initiate a transaction to lock their desired amount of funds within the wallet. This transaction also occurs between the user and the contract. The asset associated with this transaction is the funds being locked.

Release of Funds: After the lock-up duration has expired, users can initiate a transaction to request the release of the locked funds. This transaction occurs between the user and the contract. The asset associated with this transaction is the locked funds.

Balance Check: Users can initiate a transaction to check the current balance of their time-locked wallet at any time. This transaction occurs between the user and the contract. The asset associated with this transaction is the balance of funds held within the wallet.

It's important to note that in these transactions, the users interact directly with the Time-Locked Wallet contract on the blockchain. The contract serves as the intermediary for managing the locking, releasing, and checking of funds within the time-locked wallets. The asset associated with the transactions is the funds being deposited, locked, and released within the context of the Time-Locked Wallet contract.

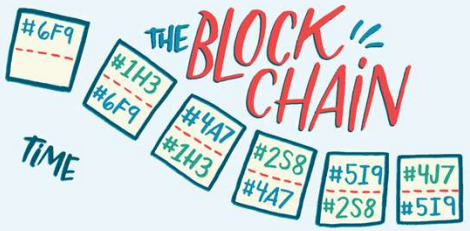


What are the main steps in the current workflow, and how are these executed by the business network participants?

The main steps in the current workflow of the Time-Locked Wallet scenario, along with how they are executed by the business network participants, are as follows:

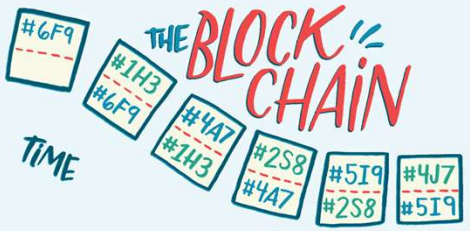
- Creation of Time-Locked Wallet:
  - Sakshi and Angel conceptualize the idea of creating a joint savings account using blockchain technology.
  - Angel, as the smart contract developer, designs and deploys the Time-Locked Wallet contract on the Ethereum network.
  - Users (individuals) interact with the contract to create their own time-locked wallets by specifying the lock-up duration and depositing funds.
  - The contract records the wallet creation transactions on the blockchain.
- Locking of Funds:
  - Users initiate transactions with the Time-Locked Wallet contract to lock their desired amount of funds within their wallets.
  - The contract verifies the lock-up duration specified by the user and securely stores the funds within the wallet, restricting access to them.
  - The contract records the locking transactions on the blockchain.

What are the main steps in the current workflow, and how are these executed by the business network participants?



- Release of Funds:
  - After the lock-up duration has passed, users initiate a request to release the funds from their time-locked wallets.
  - The Time-Locked Wallet contract checks if the specified lock-up duration has expired based on the current time.
  - If the duration has elapsed, the contract transfers the funds back to the user's account.
  - The contract records the release transactions on the blockchain.
- Balance Check:
  - Users can interact with the Time-Locked Wallet contract at any time to check the current balance of their time-locked wallet.
  - The contract retrieves and displays the current balance of funds held within the user's wallet.
  - The balance check transactions are recorded on the blockchain.

Throughout the workflow, Sakshi and Angel serve as the initial driving forces behind the scenario, promoting the adoption of the Time-Locked Wallet contract within the community. Users interact directly with the contract to perform actions such as wallet creation, fund locking, fund release requests, and balance checks. Angel, as the smart contract developer, ensures the proper functioning and maintenance of the contract, addressing any issues and incorporating user feedback to enhance its features and usability. The Ethereum network serves as the underlying infrastructure, executing the smart contract logic and maintaining the immutable record of transactions on the blockchain.



What is the expected benefit of applying blockchain technology to the business problem for each of the network participants?

Applying blockchain technology to the business problem of creating a joint savings account with time-lock functionality brings several expected benefits to each network participant:

❖ **Sakshi and Angel:**

- Enhanced Financial Discipline: The time-lock feature provided by blockchain technology helps Sakshi and Angel hold their extra expenses, promoting disciplined financial habits and enabling them to achieve their savings goals.
- Direct Control: By utilizing blockchain, Sakshi and Angel have direct control over their savings account without the need for intermediaries, giving them autonomy in managing their funds.
- Trust and Transparency: Blockchain's transparent and immutable nature instills trust in the joint savings account, as all transactions and balance information are recorded on the blockchain, eliminating disputes or discrepancies.

❖ **Users (Individuals):**

- Discipline and Goal-Oriented Savings: The time-lock functionality allows users to avoid impulsive spending and enforce delayed transactions, fostering discipline and helping them achieve specific savings goals.
- Secure and Transparent Transactions: Blockchain technology ensures the security and transparency of transactions within the Time-Locked Wallet contract, reducing the risk of fraud or unauthorized access.
- Removal of Intermediaries: Users benefit from the elimination of intermediaries, reducing costs and facilitating direct control over their funds.

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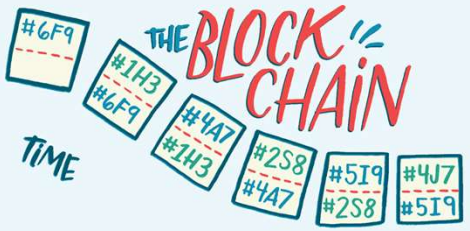
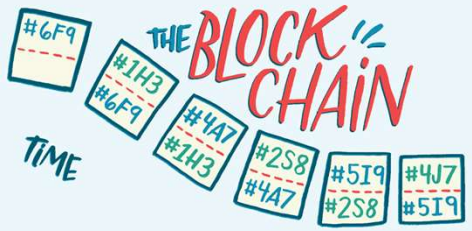


❖ Ethereum Network:

- Increased Adoption and Usage: The application of blockchain technology in the Time-Locked Wallet contract expands the use of the Ethereum network, attracting more users to interact with the platform and increasing overall network adoption.
- Transaction Security: Blockchain's cryptographic security measures protect transactions and user funds, ensuring a secure environment for financial interactions.
- Decentralization: By executing the Time-Locked Wallet contract on the Ethereum network, the application promotes decentralization, eliminating the need for a central authority to manage the joint savings account.

Overall, applying blockchain technology to the business problem provides benefits such as enhanced financial discipline, direct control over funds, trust and transparency, discipline in savings, secure transactions, removal of intermediaries, increased network adoption, transaction security, and decentralization for the various network participants involved.

What legacy systems are involved? What degree of integrations with the legacy systems is needed?



In the given scenario, there is no explicit mention of legacy systems involved in the context of creating the Time-Locked Wallet contract and implementing the joint savings account with time-lock functionality. The focus is primarily on utilizing blockchain technology to address the business problem.
However, it's important to note that in a real-world implementation, there might be existing legacy systems or financial infrastructure that interact with the Time-Locked Wallet contract or the participants involved. The integration with legacy systems would depend on the specific requirements and design of the overall financial ecosystem.

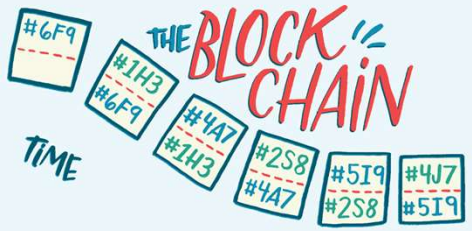
Potential integration points or considerations could include:

1.Banking Systems: If the Time-Locked Wallet contract allows for deposits and withdrawals of funds from traditional bank accounts, integration with banking systems may be required for seamless transfers and reconciliations.

2.Payment Processors: If the Time-Locked Wallet contract supports external payment methods or digital currencies, integration with payment processors or cryptocurrency exchanges may be needed to facilitate transactions.

3.Identity Verification Systems: To comply with regulatory requirements and ensure the security of user identities, integration with identity verification systems could be necessary during the account creation process.

4.Reporting and Audit Systems: Integration with reporting and audit systems may be required to generate financial statements, transaction records, and compliance reports for regulatory purposes.



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The degree of integration with legacy systems would depend on the specific functionalities and requirements of the Time-Locked Wallet contract and the broader financial ecosystem. It's important to consider factors such as data synchronization, interoperability, security, and regulatory compliance when integrating with legacy systems.