Blockchain to prevent drug counterfeit

Team members

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Problem

- Drug counterfeiting is a global problem with significant risks to consumers and the general public.
- The economic burden on the population drug expenditures and on governments is high.
- The Indian Food and Drug Administration (FDA) encourages the public to check the certificates of product registration and report any instances of counterfeiting. The National Police responds to such reports through a special task force. However, no literature on its impact on the distribution of such drugs were found.

Solution

- Blockchain technology is a cryptographic ledger that is allegedly immutable through repeated sequential hashing and fault-tolerant through a consensus algorithm. This project will develop and test a pharmaco-surveillance blockchain system that will support information sharing along the official drug distribution network
- When a new batch of medicine is made, producer add a new block in the blockchain and the product is shipped.
- After the pharmacist receives a batch ,they scan the batch code and hence the block is mined.
- If the block is already mined the batch is a counterfeit else it is the original product.

Implementation

- createBlock() - A block created registers a drug's record in manufacturer's drug supply chain and leaves no room for tampering.
- verify Transaction() - It will verify whether the drugs being bought are counterfeit or not
- mineBlock() - It adds verified transaction records to drug supply chain, each time the drugs change hands.
- viewUser() - It lists all the successful transaction against the user.

Step -I

- Each block will contain the drug records.
- A block can be filled with drug records and can be verified or mined using (Prev Hash + Current Data+Nonce)
- The Block can be Mined.
- This is the purpose solved by methods createBlock().
- And mineBlock().

Step II

Accessing the Drug records.
Using :- viewUser()

- The Drug Records can be accessed only using proper Vendor credentials.
- No illegal vendor credentials can be used to access the records.
- Once proper credentials are entered the vendor can view the Drug records.

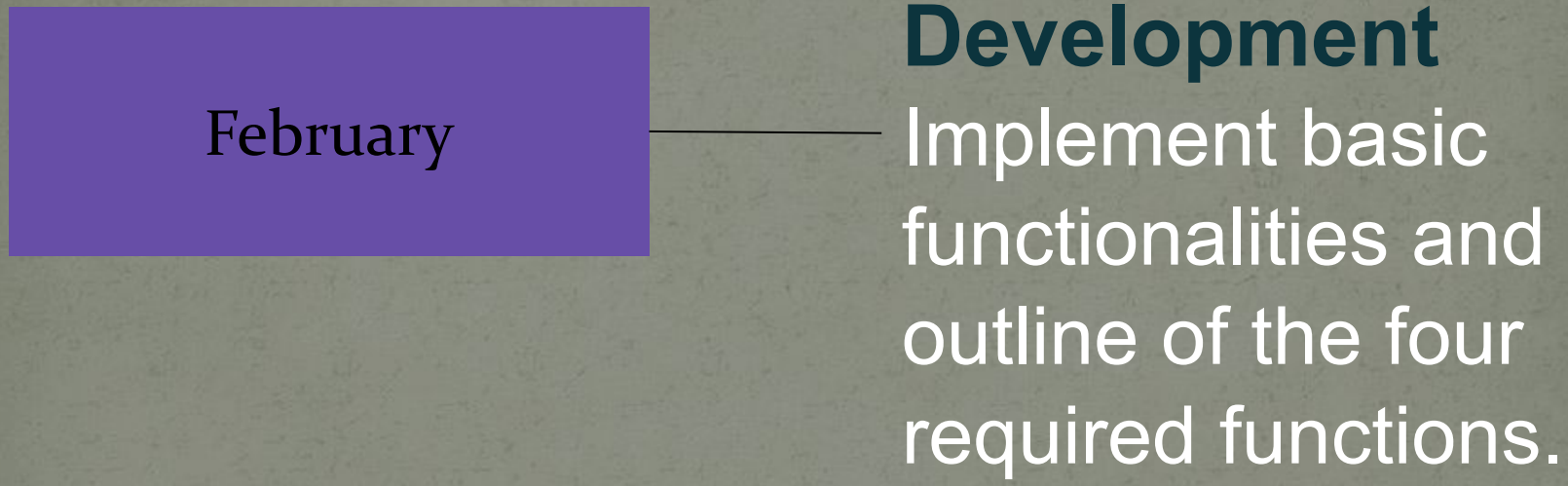
Step -III

Making New Transaction and Verifying using verifyTransaction() used as verifyDrugs() method.

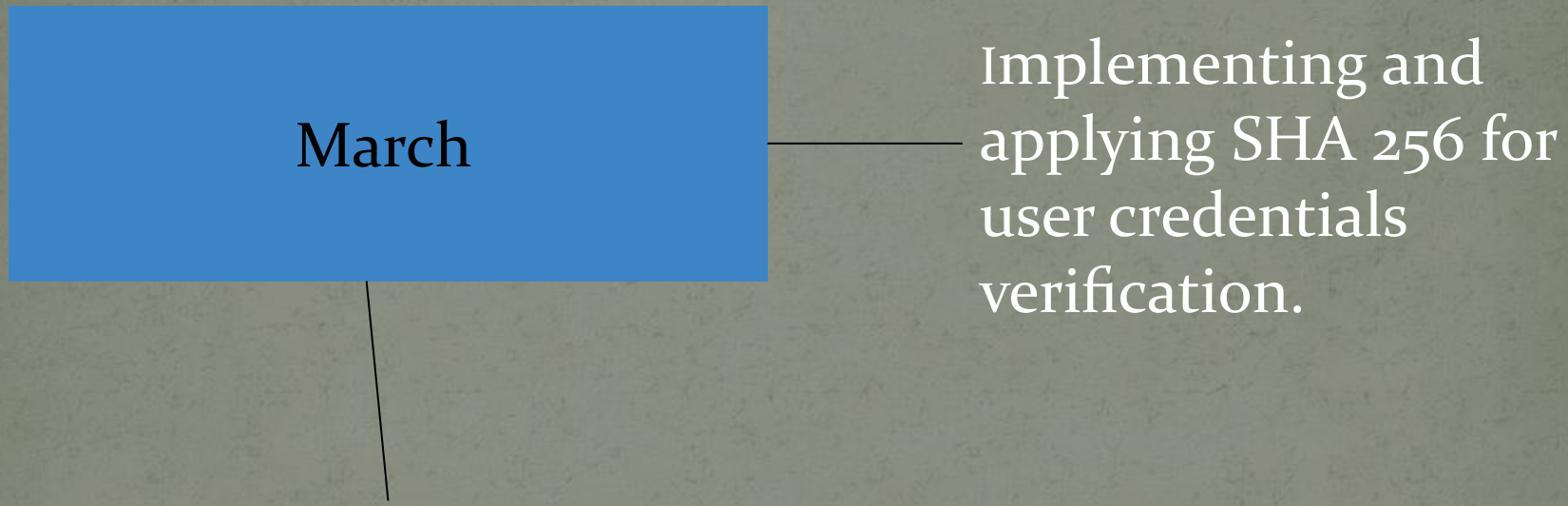
- Transactions are verified using Drug serial no. as Token and implementing Zero knowledge proof using a public token and the serial no. Token.

Action Plan and Process

Project Layout



Authentication



GUI and Wallet and viewUser()

April

Making GUI using AWT and implementing verification database for user credentials and drug serial no. verification.

Making viewUser method and displaying and printing Users and Transactions

Deployment and Demo

We have Attached User Manual and Readme File along with How to deploy and use the Blockchain application for Demo and deployment .