

Blockchain based cheque verification and clearance system

This document highlights the general overview and major (specific) requirements of the project. All other small things can be assumed or discussed accordingly, if needed.

Sender-Receiver Portal

Purpose:

- Register users
- after login into portal, sender can generate a digital cheque in the name of the receiver
- receiver can send the cheque to bank for verification and clearance
- all involved entities must get notified on the status of the cheque via free mail service like mailtrap.io
- rest you can take ideas from attached GitHub repo, to make this portal better... I have listed the basic requirements in the layman's way..

Technical Requirements-

- good front end with animations
- smooth user experience

Form to Digital Cheque Converter

Purpose:

- take data from user (receiver's name, amount) {you may add more credentials like automatically add IFSC, MICR, sender's account number on the generated cheque}
- add time stamp to the cheque
- add digital signature to the cheque (this is to eliminate the need for sender's sign), by digital signature I mean cryptography wala digital signature not the hand digital signature... just to clarify (use AWS based CA for the fabric/ blockchain maybe).. AWS is just a suggestion, you may use other tools if you know better ones
- convert all data entered in the form to all caps and then hash (SHA-256) the information (I think hash corresponding to concatenation of receiver's name, amount, timestamp and digital signature could be generated), again you are free to take the call, what needs to be hashed and what not
- push this hash code to blockchain
- generate a QR corresponding to this hashed value and embed it on the cheque leaf that is to be sent to receiver and the bank

Bank's Dashboard

- display all cheques waiting to be cleared
- display all day txn stats
- all currency and amounts must be displayed with Rupee symbol not Dollar

- banker can scan QR code for verification
- hash is verified by fetching corresponding hash from blockchain
- once verified, proceed to clear the cheque, ask the banker for final confirmation to clear by asking him to enter a OTP, displayed in the dashboard or some text for the sake of confirmation
- once confirmed, push the txn to blockchain and change the status to cleared
- status must be visible to the sender and receiver as well, send mails also
- if cheque is unverified, notify both the parties and temporarily block transactions on sender's account (this can be resumed by the bank only)

Blockchain

- stores the hash generated at the time of cheque generation
- helps bank to verify the cheque by sending the hash value verification when called
- store all cleared txns
- develop a secure and optimized smart contract for the same
- see if blockchain can be utilized in more ways

Integrate all services together to function as a single entity, ensure proper functioning.

Please feel free to suggest any more features to make it even better. Again, this is just an overview of what needs to be built, for any other confirmation feel free to contact me anytime.

Thanks.