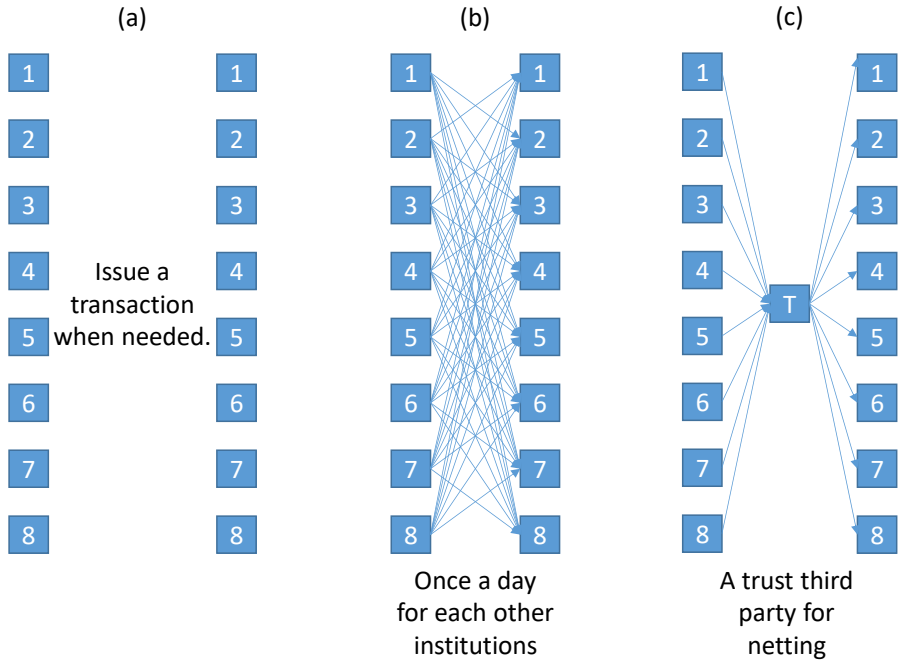
Homework #6 announced on 16 May 2017.
Hand in this homework on 6 June 2017 in the class.

The main purpose of Smart Contract is to provide a decentralized environment for (untrusted) network peers to execute a trade or a program collaboratively. Take a financial service for example, the benefit of applying Smart Contract technique could be: 1) automating the trade process, 2) lowering the (real-world) transaction fee, and 3) eliminating the needs of trusted third party.

Assume there are eight financial institutions (e.g., banks) that need to transfer money between each other several times a day. However, the transaction fee is quite high, so that they tend not to transfer money every time when a transaction is issued. In practical, they form a trust institution for netting. At the end of a day, each institution submits its netting record (which includes the amount of money needed to transfer to every other institutions) to the trust institution. The trusted institution then calculates the net value to transfer (to each institution) and make only one transaction for each institution. In this case, at most only 8+8 transactions are needed per day.



A Smart Contract can entirely replace the role of such trust institution. Please design a smart contract and publish your code on the testnet. The smart contract should have following functions (but not limit to).

a) Constructor: record the owner of the contract initializer.

b) Input: upload the netting result of an institution.

c) Net: calculate the netting result and publish the result.