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Ethereum Blockchain Development Week 10

1 Setup

The 'Setup' is covered in the video available from EthereummyLearning website in Week 10 Q1 .mp4. All today's exercises are to be saved in week 10directory. Follow the instructions below and in the video Q1 .mp4.

- Open up the VM machine
- Open a terminal (CTRL-ALT-t)
- In your 'Ethereum' directory create a week 10directory: `mkdir 10`
- Go to the directory: `cd 10`
- Download the trader network:
`wget -c https://https://blockchain.smerf.net/trader10.bna`
- Start composer playground by typing the following in the command prompt: `composer-playground`

- Remove any previous installation of trader business network archives
- Upload the `trader10.bna` and deploy
- Populate the registries using the initialise all transaction
- Create wallets for each participant

2 ACL 1

The current setting for ACL is to allow Traders to access everything in the trader network. Remove this generic rule and add a rule so that traders, clerks and interns can only see themselves.

3 ACL 2

Add a new rule that allows Managers and Consultants to view everybody with 'ALL' privileges. Add a new rule that allows Managers and Consultants to view all commodities.

4 Add Staff Transaction

Add a transaction to add a new member of staff. Only a manager can add a new member of staff, ensure that this is implemented and demonstrate a success and a failure of this transaction. Add a new rule to allow access to the transaction.

5 Trade Commodity Transaction

Add a transaction that exchanges commodities between a seller and a buyer. Only traders are allowed to exchange and own commodities. Add a new rule to allow only traders access to the transaction.

6 Remove Staff Transaction

Is the current transaction to remove staff adequate? Add a new rule that allow managers only to access this transaction.

7 Consensus Algorithm

Read pages 29-38 in [?] on consensus algorithms and answer the following questions:

1. When a new user joins what are the initial states of the permissionless system?
2. What is the key difference between consensus algorithms when operating in permissioned and permissionless blockchain systems.
3. Explain the consensus algorithm: proof-of-work
4. Explain the consensus algorithm: proof-of-stake