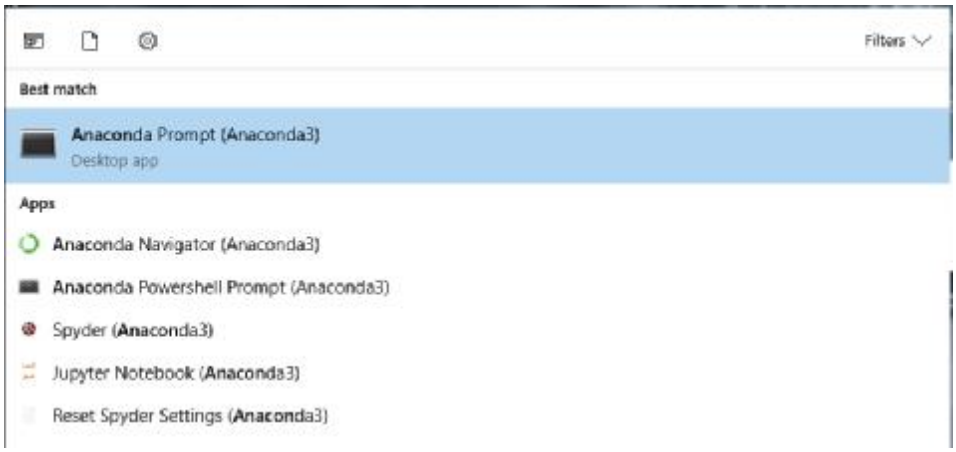
Working with BlockChain – a Walkthrough

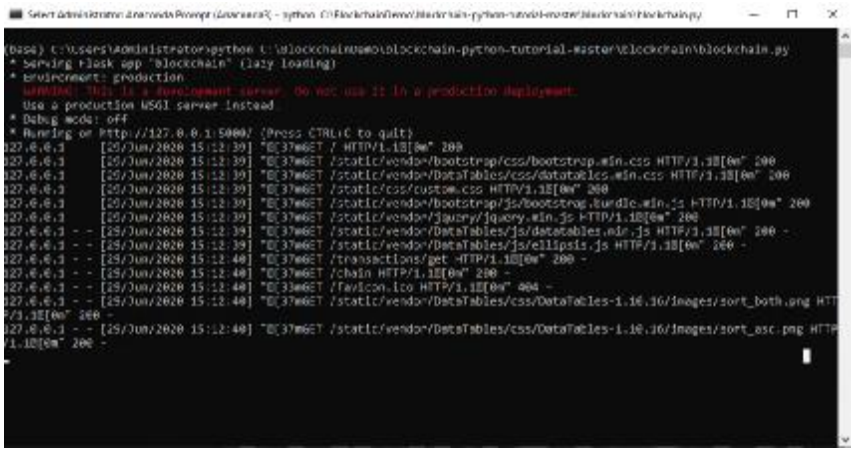
This lab assumes that you are successfully logged into the remote student environment.

1. Click Start and then start typing Anaconda Prompt (Anaconda3) and then launch Anaconda Prompt when it comes up.

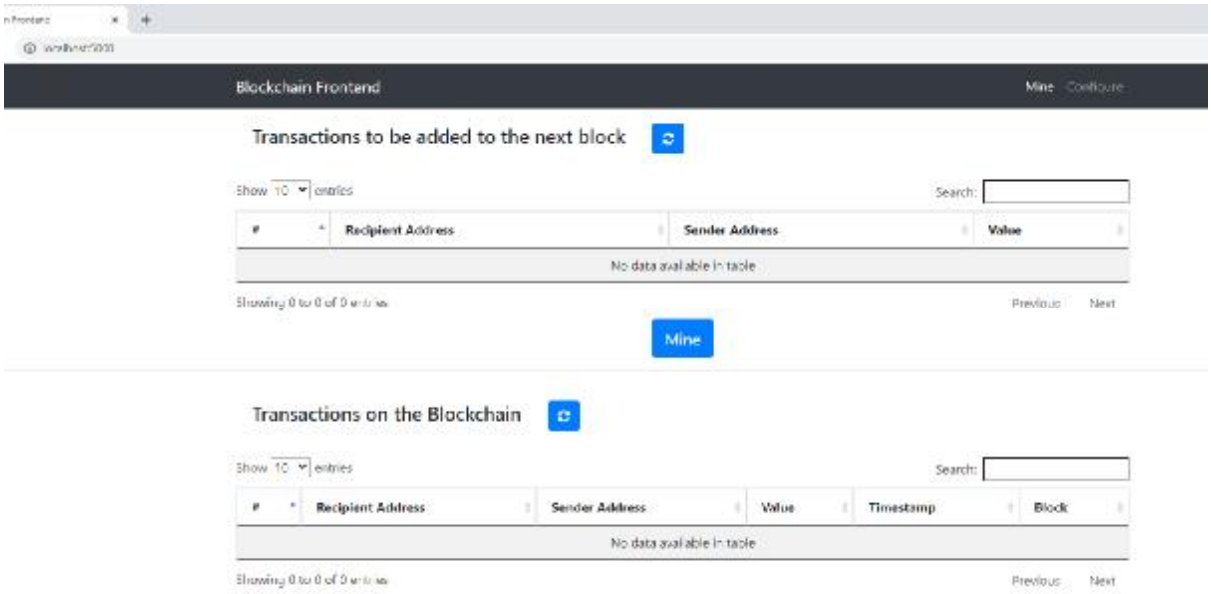


2. At the Prompt, you will run your BlockChain server (a simulated version of Bitcoin if you like).
   Enter the following command:

   python C:\BlockchainDemo\blockchain-python-tutorial-master\blockchain\blockchain.py



3. Using Chrome, visit the following URL: http://localhost:5000
   This is the backend server that will managing your 'bitcoin' payment transfers.

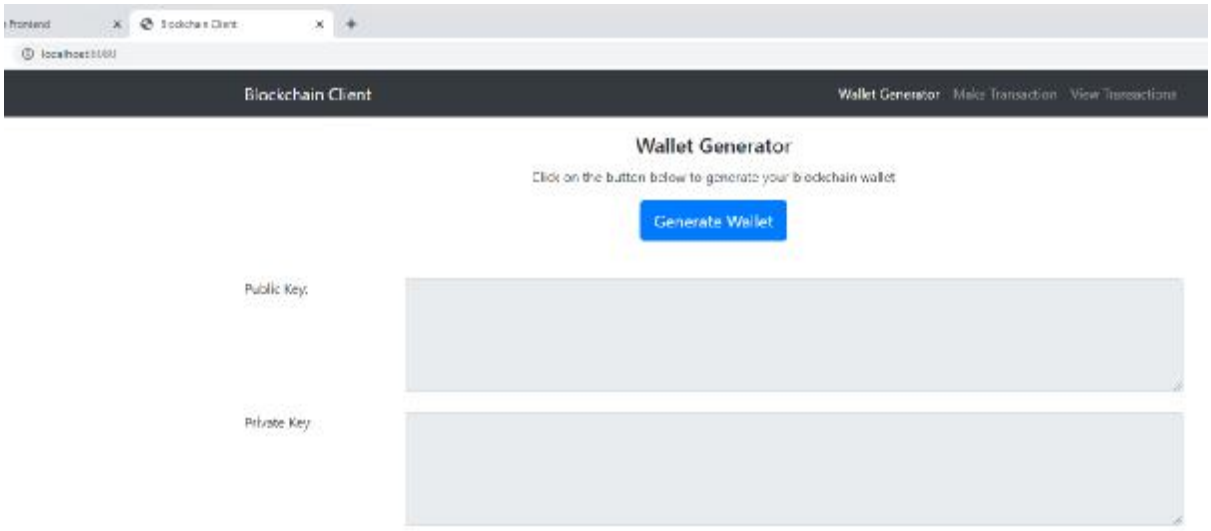


You will be coming back to this a bit later on to do some mining!

4. Now launch another Anaconda Window (repeat step 1 above).
5. This time run the following command (on one line):

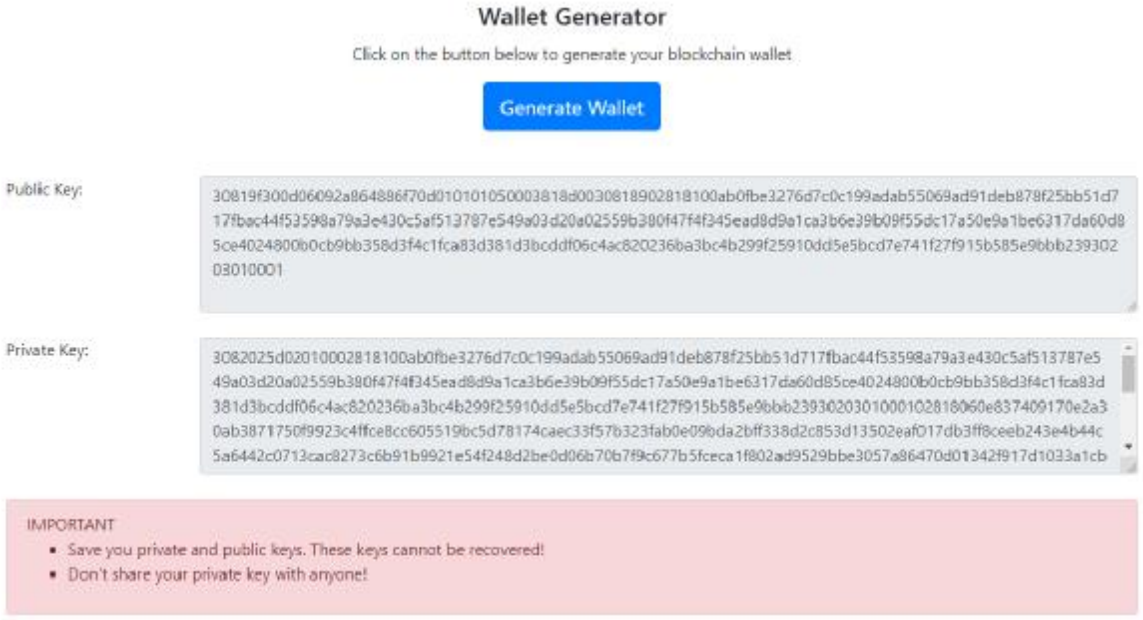
   python c:\BlockchainDemo\blockchain-python-tutorial-master\blockchain_client\blockchain_client.py

6. This has now run up a client application that can be used to do some 'financial transfers'.
7. Using Chrome, bring up another browser tab, and visit http://localhost:8080



Now you can simulate some block chain payments.

1. Using Chrome, click on the Generate Wallet button. As someone who is going to buy and sell any bitcoins you have to have a wallet. This generates two keys. Your public key (visible to anyone), and your private key (which you must NEVER SHARE!).



2. Launch Notepad, and copy your two keys into the notepad file, making sure you know which one is which!
3. Now you have your keys, you can make a transaction, so in the menu at the top right, click Make Transaction.
4. At the Send Coins screen, you are going to send some coins. It will be slightly artificial since you are going to send some coins from yourself to yourself! So enter the following:

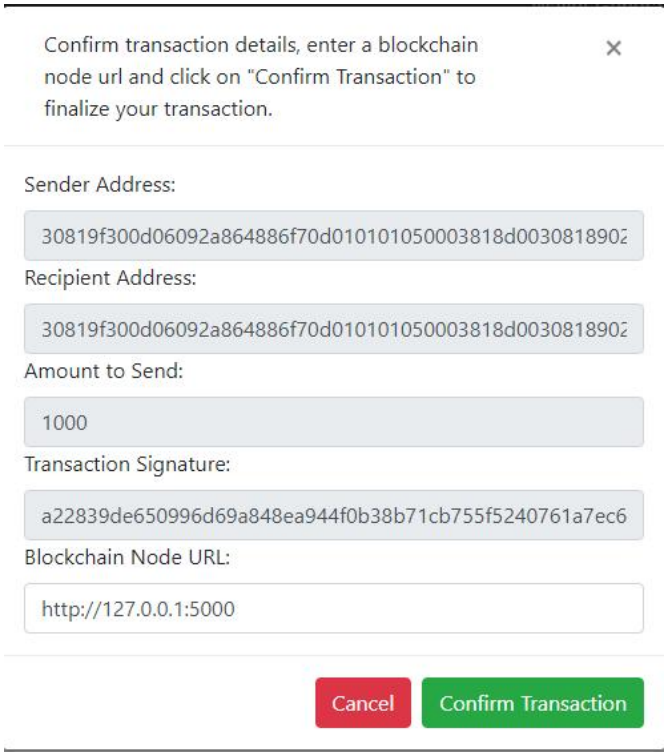
Sender Address: Your Public Key

Sender Private Key: Your Private Key

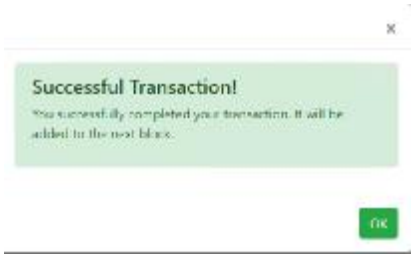
Recipient Address: Your Public Key

Amount to Send: 1000 (you can send more if you like!)

5. Click Generate Transaction. At the confirm prompt, click Confirm Transaction.

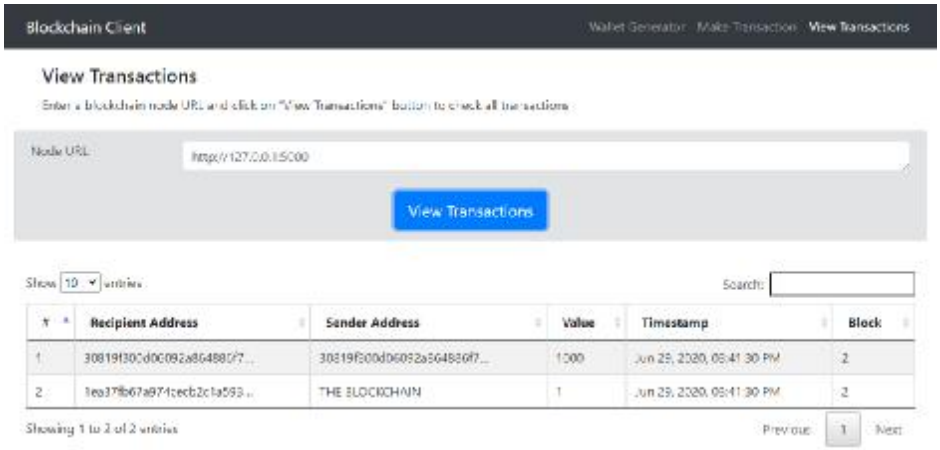


You will see the following response. If you do not. Ensure that you have pasted your keys correctly.



6. Now we can do some mining. We need to verify the transaction. This is done by the miners. In Chrome, return to the http://localhost:5000 tab, which is your Bitcoin server and hit the blue refresh button.

7. You will now see a transaction that needs to be added to the next block in the blockchain. You will now mine that to add it in. This would ordinarily be done by those who like to do bitcoin mining!
8. You will now see two transactions on the blockchain. 1000 transferred to you (recognise the public key), and 1 transferred to the miner (which is the reward they get for doing the mining).
9. Back in the client user interface http://localhost:8080 you can click View Transactions, and you can also view the ledger from there.



Try repeating the process of creating new and you will see additional blocks get added to the chain each time you mine.