BurgerCoin:

An Ethereum blockchain based micro-economy

User Instructions

CS467 Online Capstone Project
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URL

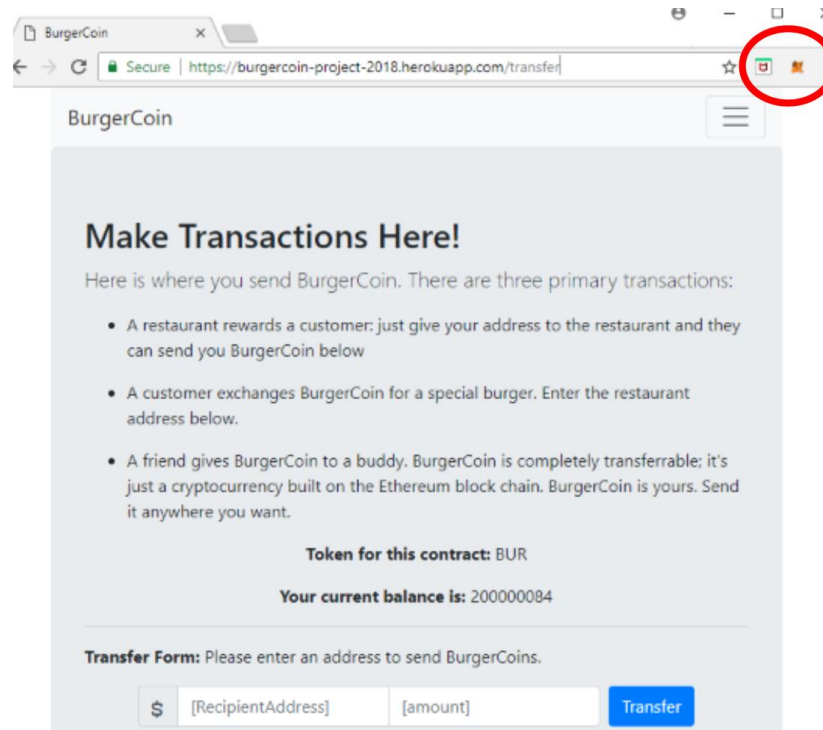https://burgercoin-project-2018.herokuapp.com

Setup & Usage

A: Set up Metamask on Rinkeby

In order for a user to make transactions on the blockchain, he/she needs to have a wallet to store currency and a means of spending it. There are several Ethereum wallets available, and the one we recommend is MetaMask.
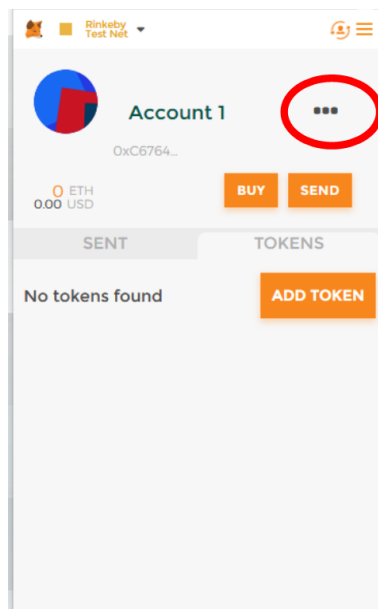
1. Go to https://metamask.io/
2. Click on the link to download the adapter for your browser of choice (it will detect your current browser)
3. Click to install MetaMask to your browser and give it permissions.
4. Select a password. You will be given a passphrase. Write this down somewhere secure. You account is only an address, password and passphrase, and balances. There is no password recovery. If somebody takes your password and cryptocurrency, there is no recourse. There is not going to be a link to reset your password.
5. Click to add tokens and add our project address, 0x5c87e1c456dcedfab139df81a7ca331bb0c14dda
6. At this point, you are watching your balance of BurgerCoin (BUR) and your balance will be 0
7. Finally, you are going to need your address, your "public key". This is the identifier you will use for every transaction on the blockchain. Each transaction will appear to every node on the chain. All that will appear are the sender, receiver, and amount. In MetaMask, click the bold ellipses next to your account name, and select "View Account on Etherscan". This will bring up a page with lots on interesting information types about your account. Since you just made your account, there won't be much of it yet.

If you click elsewhere on the screen, your MetaMask interface will minimize. There are two very helpful links associated with your wallet to check the status of your transactions.

First, as shown in the figure below, you can get your wallet interface back with the fox icon on your browser.

A second very useful link is the ellipses next to your account name. This will take you to Etherscan where you can view the history of your transactions. During development this helped us isolate problems or transactions that may have been rejected. During use, it can be nice to check the status of a recent transaction. Blockchain transactions do take some time to process and it can be easy to wonder, "Is it working"?[1]

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[1] Browsing on the Etherscan of your contracts, your tokens, and your tokens' contracts is actually a pretty good way to get a feel for what is happening with blockchain transactions.

B: Get ether on Rinkeby with the ether faucet

In order to purchase BurgerCoin and execute transactions, you are going to need some Ether. We are hosting our school project on one of the test networks, so we are not dealing in actual currency, but rather test protocols. You can get test Ether through a "faucet". Go to https://faucet.rinkeby.io/ and follow the instructions. They will instruct you to post your address on a public social media post and copy the link to that post. At first, posting the address of your wallet publicly will feel strange. However, this is how blockchain works. Your public key is always visible on the blockchain when you make a transaction. It's your private key that makes things secure. This method does associate you with your address (public key), but this isn't a problem if you typically make transactions with people you know anyway.

C: Buy BUR with ether

(This step is optional; you can participate in the BurgerCoin economy without it.)

With Ether in your wallet, you can now buy some BurgerCoin. Visit the "Join" tab of our web page, https://burgercoin-project-2018.herokuapp.com/join, and enter an amount of ether you'd like to spend on BurgerCoin. Currently, the amount of Ether has to be greater than 1. (1 Ether won't work, but 1.00000001 will).

When you submit this transaction, your MetaMask wallet will pop up and ask if you want to approve the transaction. Approve it, and then wait for the block to be mined for the transaction to go through. This often takes about a minute or two.

** Note ** you have to be signed into your wallet and have your wallet set to the Rinkeby test network for this to function properly. The transaction will not process if you aren't logged into your wallet or if it is pointing to a different network.

E: Transfer BUR to other addresses

This is the primary functionality of the smart contract. To send BurgerCoin to someone, head over to the transfer page https://burgercoin-project-2018.herokuapp.com/transfer . The first thing to do is enter the address (public key) of the person you want to send BUR to. Copy / paste is best here. Addresses are long and easy to get wrong. Then add the amount to send and submit. You'll be prompted to accept the transaction, and then it'll take about a minute or two to process.

To test this, you can use any external ethereum address as the recipient, and then check the etherscan.io page of the BurgerCoin contract to see that the transfer is recorded there. Our etherscan page is here:
https://rinkeby.etherscan.io/token/0x5c87e1c456dcedfab139df81a7ca331bb0c14dda

Also, here is an ethereum address you can use as a recipient to test transfers:
0x14ae8100Ea85a11bbb36578f83AB1b5C1cFDd61c

This transfer function is the same whether a patron is sending BUR to a restaurant or a restaurant is rewarding a patron with BUR.