

# HW2 -- Write a blockchain-based cryptocurrency

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**Due** Thursday by 11:59pm    **Points** 30    **Submitting** a text entry box

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In this assignment, we will build a block-chain based cryptocurrency, called "Bitcoin Lite" (BCL).

BCL follows a lot of the design choices that Bitcoin made. It will use a UTXO based approach to keep track of available funds in the system. Miners will gain coin rewards from both transaction fees, and a built-in mining reward for finding a block.

## PART 1 -- Set up the project.

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If you do not have a github account already, create one.

Once you have done so, fork a copy of the <https://github.com/taustin/bcl.git> repo. The button to do so is towards the top left of the bcl's repo page.

From the command line, change to the directory where you want to create the project. Type ``git clone https://github.com/taustin/bcl.git``. Once the files have all downloaded, type ``npm install``.

If all went smoothly, you should have your own copy of git repo on your machine.

## PART 2 -- Pass unit tests.

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The Transaction and Wallet classes have some unit tests available. Make sure that all of these tests pass. Feel free to add additional tests that you think could be useful.

## PART 3 -- Update the Block and Miner classes.

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The Block and Miner classes are the heart of the challenge, but also unfortunately difficult to unit test. There are 2 files in the simulations directory. Run those for some more complex cases to consider. Again, feel free to add additional simulations.

## PART 4 -- Turn in the project.

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Paste in the URL of your github repo. I will download it and run the test cases that I have.

If you wish me to run any of your additional test cases or simulations, let me know that when you paste in the assignment.