Fake Product Identification System

**Description:** I am attempting to create a web application that utilizes the blockchain to store data of the authentic products that consumers can use to verify the authenticity of their purchase. My proposed solution would be to have Shoe companies print out a small QR code somewhere on the shoes. These QR codes could be linked to the blockchain data store and could trace the shoe back to the source and determine authenticity. This will allow users to then just scan the QR code and be taken to the web application that will show all the details for that shoe if it is authentic. This will be a very secure method of verifying authenticity of products because everything on the blockchain ledger is completely transparent. I believe that this would be a significant contribution towards fighting against the fake shoe market and can later be applied to all sorts of products to track source and verify authenticity.

**Status of the Project:** Thus far, I have built on Milestone 1 by setting up the Ganache and Truffle environment. After getting that environment set up, I began by creating an offline blockchain to work through the logic of how my application would work. This was done in blockchain.py, which is standalone from the rest of the application at this point with plans to integrate later. This script just creates a blockchain and a few blocks of example data on an offline blockchain. This script is currently just missing the ability to obtain a hash value from a QR code which then allows a user to find the block of their shoe data on the chain. These things will be added before the demo. I have used the Ganache/Truffle environment to work through a sample blockchain that sends a test message as a data string through a contract as a block onto the chain. This sample blockchain environment creates an example web application that creates and compiles some test contracts on a private blockchain address before fetching and displaying the message to the user. This application has the contracts (blocks) written in solidity and JavaScript and then wrapped into a python application.

**Milestones Yet to be Accomplished:** It has taken me slightly longer than anticipated to figure out how to set up a working blockchain address. I have also began researching the QR code creation and data extraction process but have yet to implement this yet. I have also yet to integrate my blockchain.py example application into the ganache/truffle application. Merging both aspects will form the base foundation for my application which I will also fill with an entire (small) fake database to better display the functionality of my application for the demo.

**Proposed timeline to accomplish the remaining milestones:** The QR code feature should probably be done this week because I have already researched how to create and extract information from a QR code and just need to implement this. I believe That merging of the two aspects of my project along with creating a small fake dataset to work with can be done over thanksgiving break. I think I can finish all of this by the end of thanksgiving break and then spend the rest of the time preparing for my project demonstration.