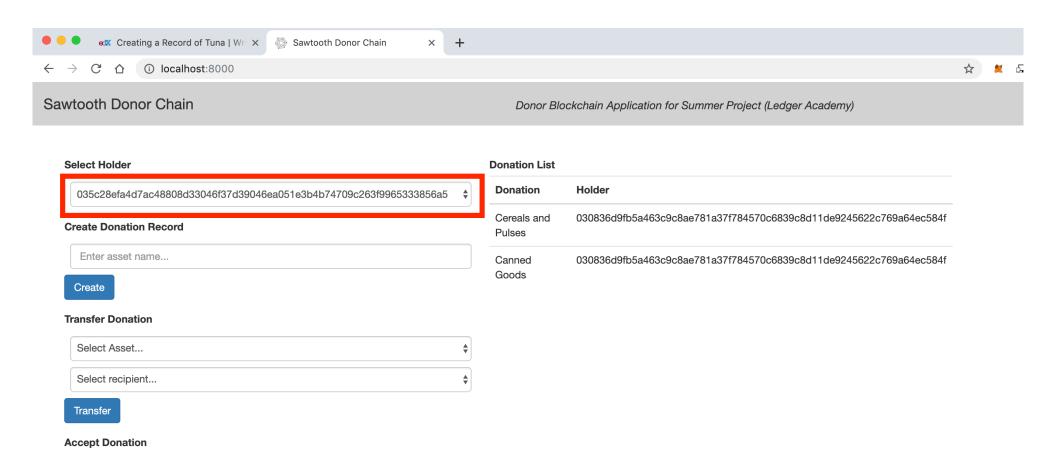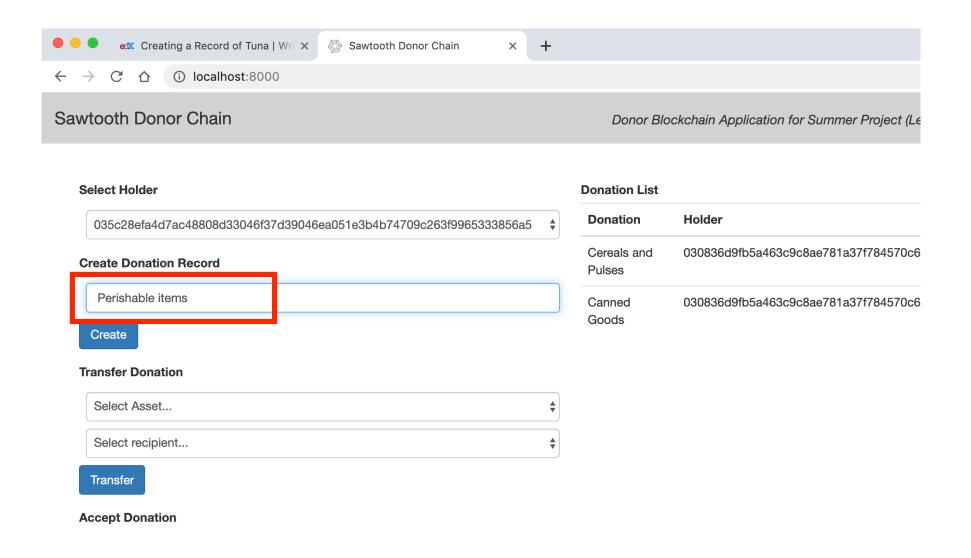# Hyperledger Sawtooth
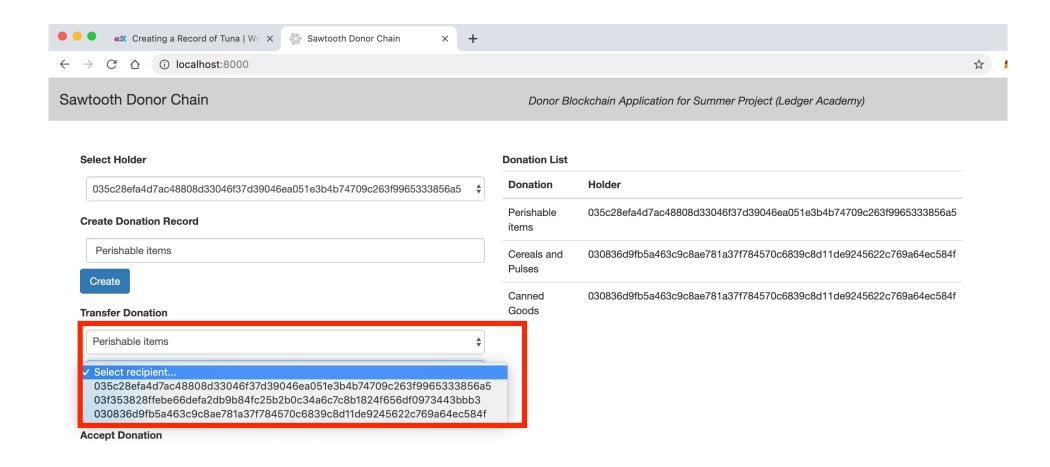# Donor Blockchain for Summer Project
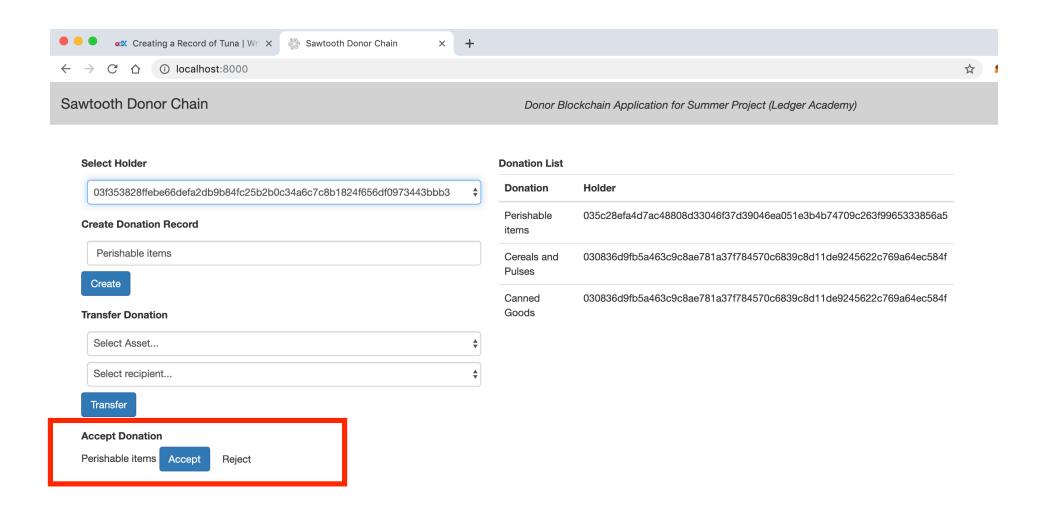# (Ledger Academy)

Donor Blockchain - View

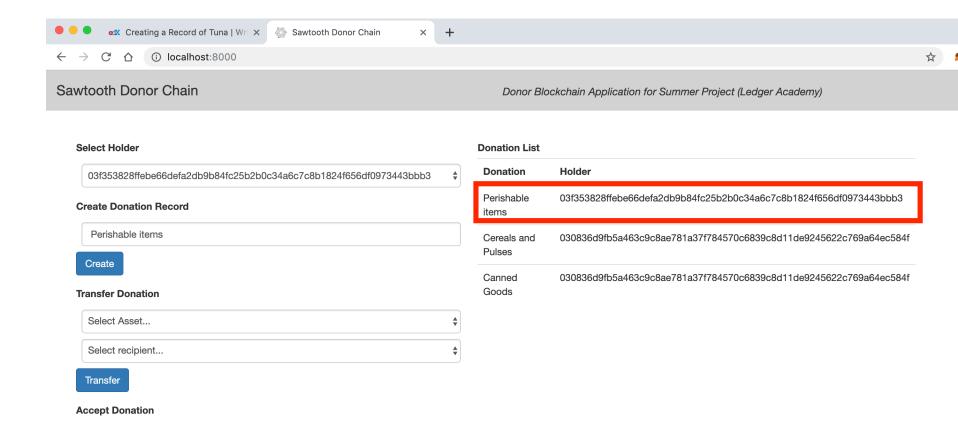# Donor Blockchain - Donation record

Donor Blockchain - Transfer

Donor Blockchain - Accept Donation

Donor Blockchain - Change in Holder

Key Takeaways

Farmer records data for food supply treating that as a single *batch* of transactions. As a reminder, a *batch* is a cluster of transactions that are committed to state together. Using a batch, Farmer is able to record everything together, while still being able to specify data for each individual item. If one of the item transaction is invalid, the entire shipment is invalidated; that is, nothing within the batch of food supply is validated.

A Batch of many transactions can be submitted to the network, the network's consensus algorithm would choose a node to publish this batch as a block on the ledger

If the *Proof of Elapsed Time* consensus algorithm is used, the *validator* with the shortest wait time publishes the transaction block. The transaction block is then broadcasted to the publishing nodes.

To start, a user creates a batch containing one or more transactions, and submits it to a validator, usually via a client that communicates with a REST API. The validator then checks the transactions and applies the batch if all transactions are considered valid, resulting in a change to the state. In our case, Farmer creates a batch with attributes such as unique ID, farmer's name, location, food item specifics , timestamp , quantity etc. Depending on decision of what attributes are mandatory, a batch of transaction will be accepted by validated and applied and global state will be updated.

Currently, Hyperledger Sawtooth supports the following consensus implementations:
- **Proof of Elapsed Time**, or **PoET**, a Nakamoto-style consensus algorithm that is designed to be a production-grade protocol capable of supporting large networks
- **Dev mode**, a simplified random-leader algorithm that is useful for development and testing on single-node or small networks.

With PoET , we need to be mindful of forks being created . For our purpose, therefore Dev mode can make more sense .