developerWorks COURSES

IBM

IBM Blockchain

Lab part 2: Transfer assets in a blockchain network

IBM

Prerequisites

Be sure to complete part 1 of the lab and that the playground is running with the car auction demo.

Step 2. Add participants and transfer assets

In the this section, we will now work with the deployed car auction blockchain network.

We will first instantiate three *Member* participants of the car auction business network:

- Alice Smith (alice@foo.com), who will make a bid on a car
- Bob Jones (bob@foo.com), who will also make a bid on a car
- Charlie Brown (charlie@foo.com), who currently owns a car

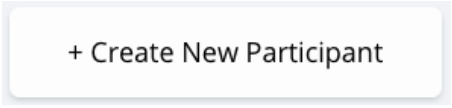
We will not instantiate an Auctioneer in this lab; this role could be used to provide oversight of the network, although is not necessary.

__5. Click the **Test** tab and then click the *Member* participant registry.

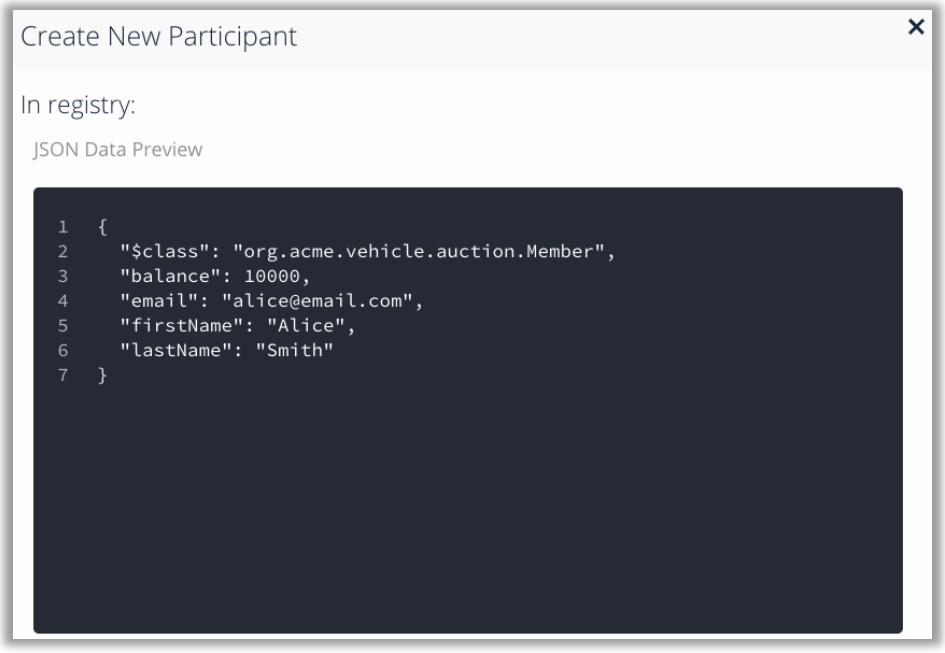
The registry is empty because no members have currently been defined.

__6. Click **Member** to see that no current members exist in the environment.

__7. Click **Create New Participant** to add a new Member.

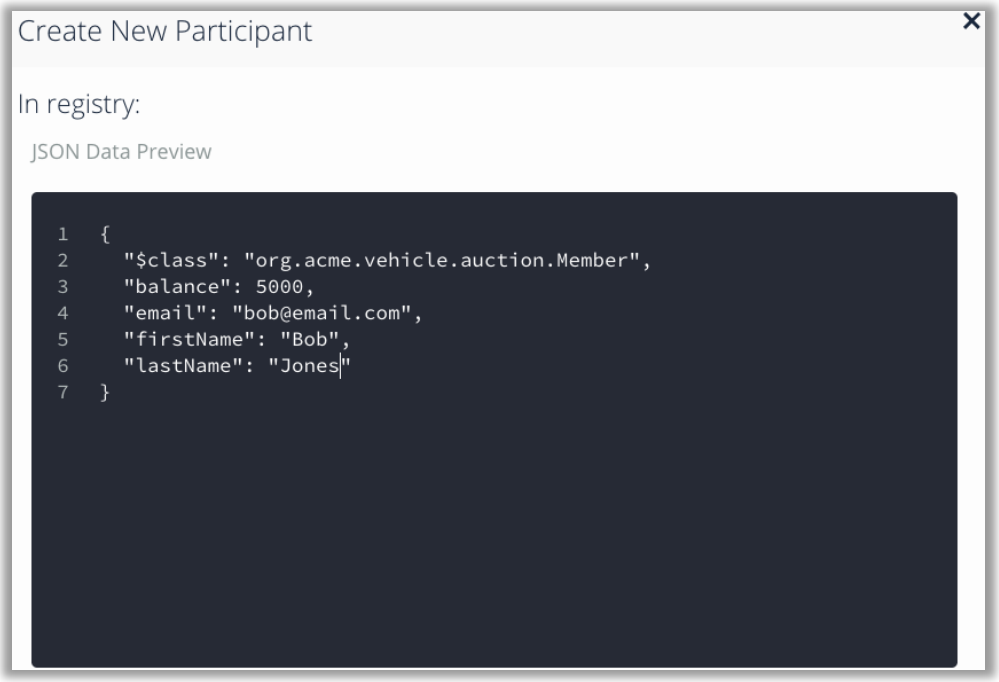


__8. Type the correct values into the JSON data structure to add Alice to the business network. Let's give her a starting balance of `10000`.

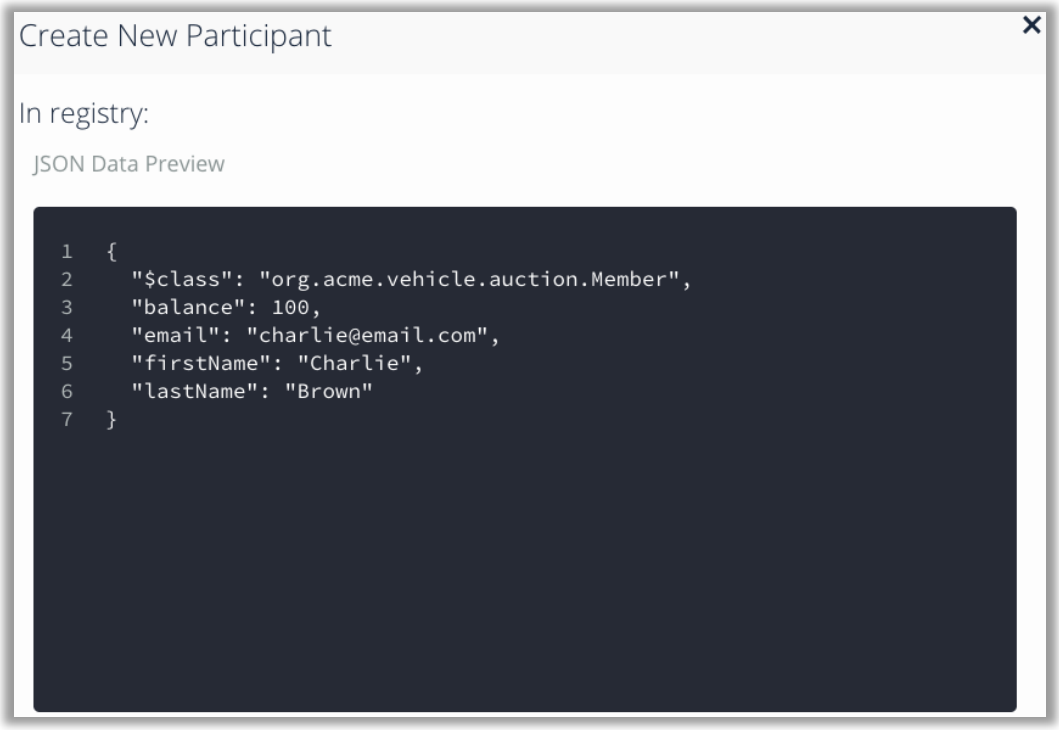


__9. Click **Create New** to add Alice to the registry.

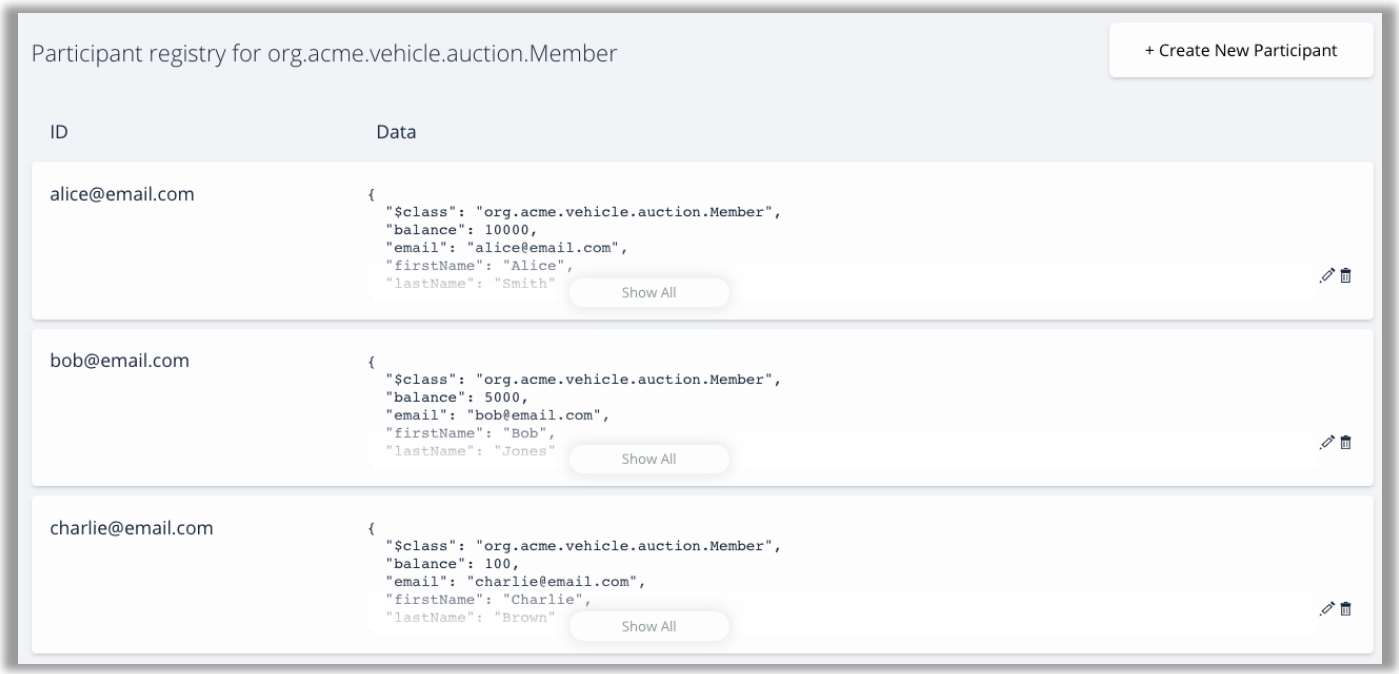
__10. Do the same for Bob. Let's give him a starting balance of `5000`.



__11. Do the same for Charlie. He hasn't got so much money. He's selling his car, after all, so let's give him a starting balance of `100`.



__12. Verify that all participants in the business network have been correctly defined. Use the Edit button ( ) to make any changes.

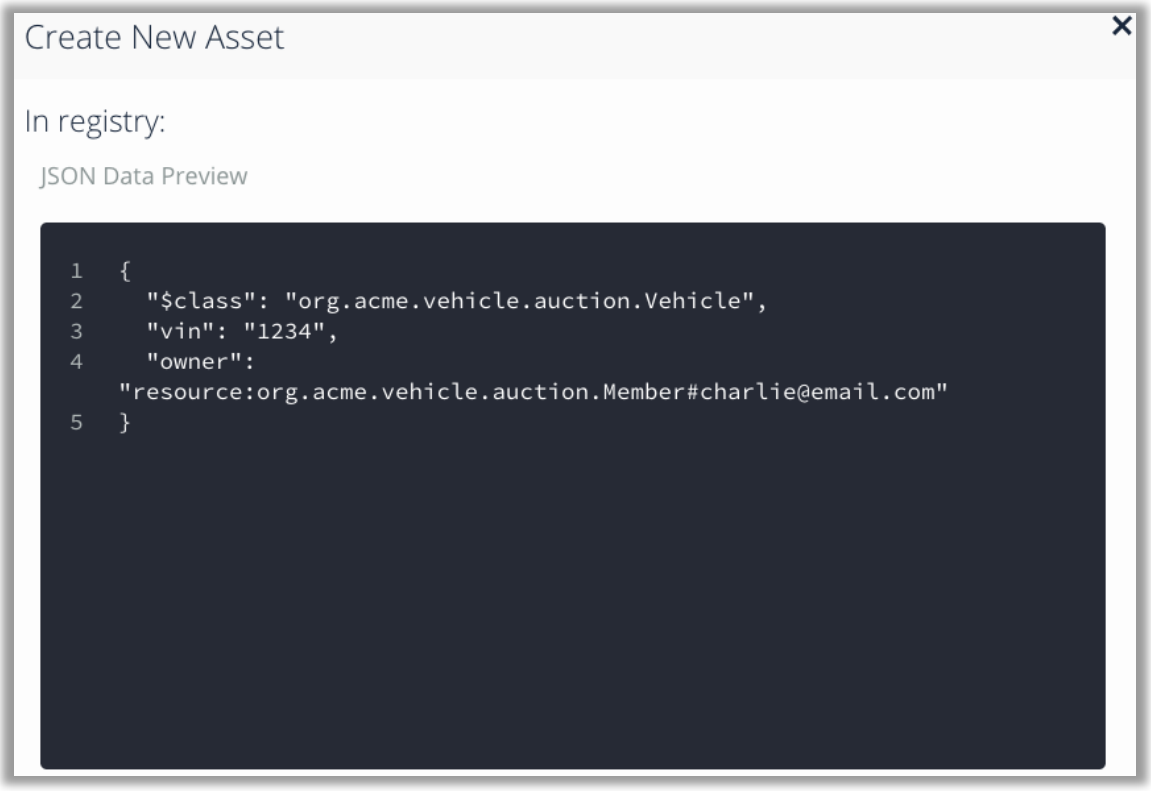


We will now add Charlie's car to the Vehicle Asset registry.

__13. Click the ***Vehicle*** asset registry.

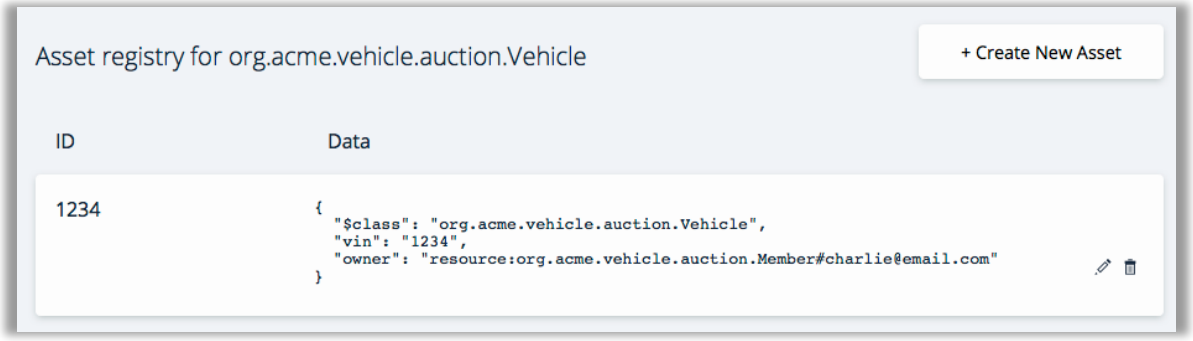
__14. This registry contains no assets currently. Click **Create New Asset** to add a new asset.

__15. Instantiate the car by adding a vehicle identification number (VIN) of `1234` and assign it to Charlie by adding to the JSON object as follows. (We use his email address to identify him; this was specified as the key field in the User definition by using the `identified by` statement.)



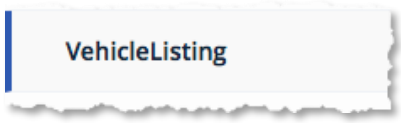
__16. Click **Create New** to add the new vehicle to the registry.

__17. View your newly added asset in the registry.



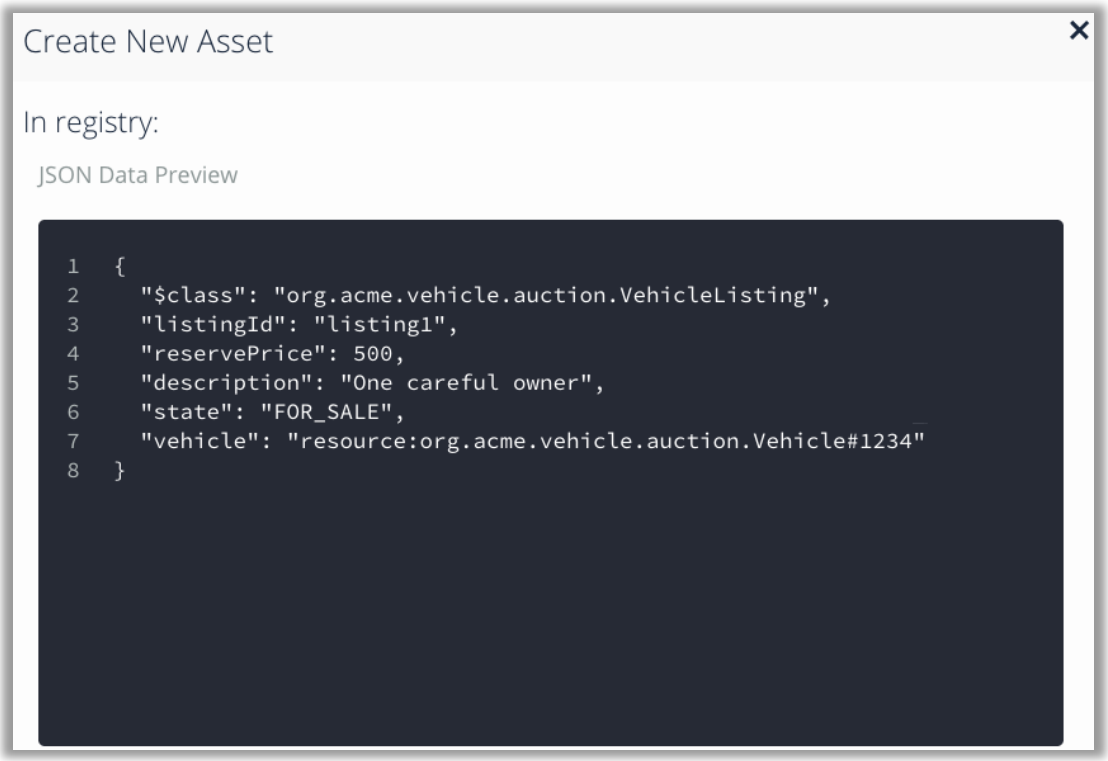
Next, we will put the car up for sale by creating a `VehicleListing` instance.

__18. Click the **VehicleListing** asset registry. Again, the VehicleListing registry should be empty.



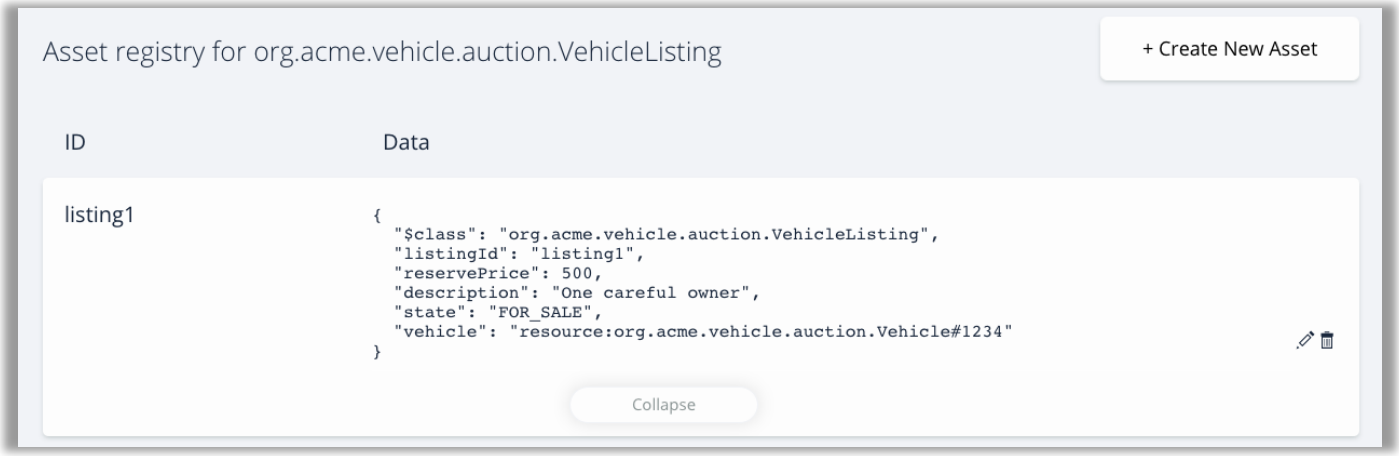
__19. Click **Create New Asset** to add the asset.

__20. Update the fields and remove the random offers. Syntactic validation of the object occurs at this point, so correct any errors if necessary.



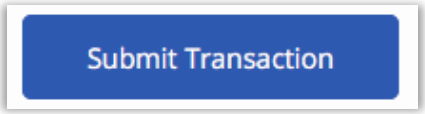
__21. Click **Create New** to add the new vehicle listing to the registry.

__22. View the listing in the registry.

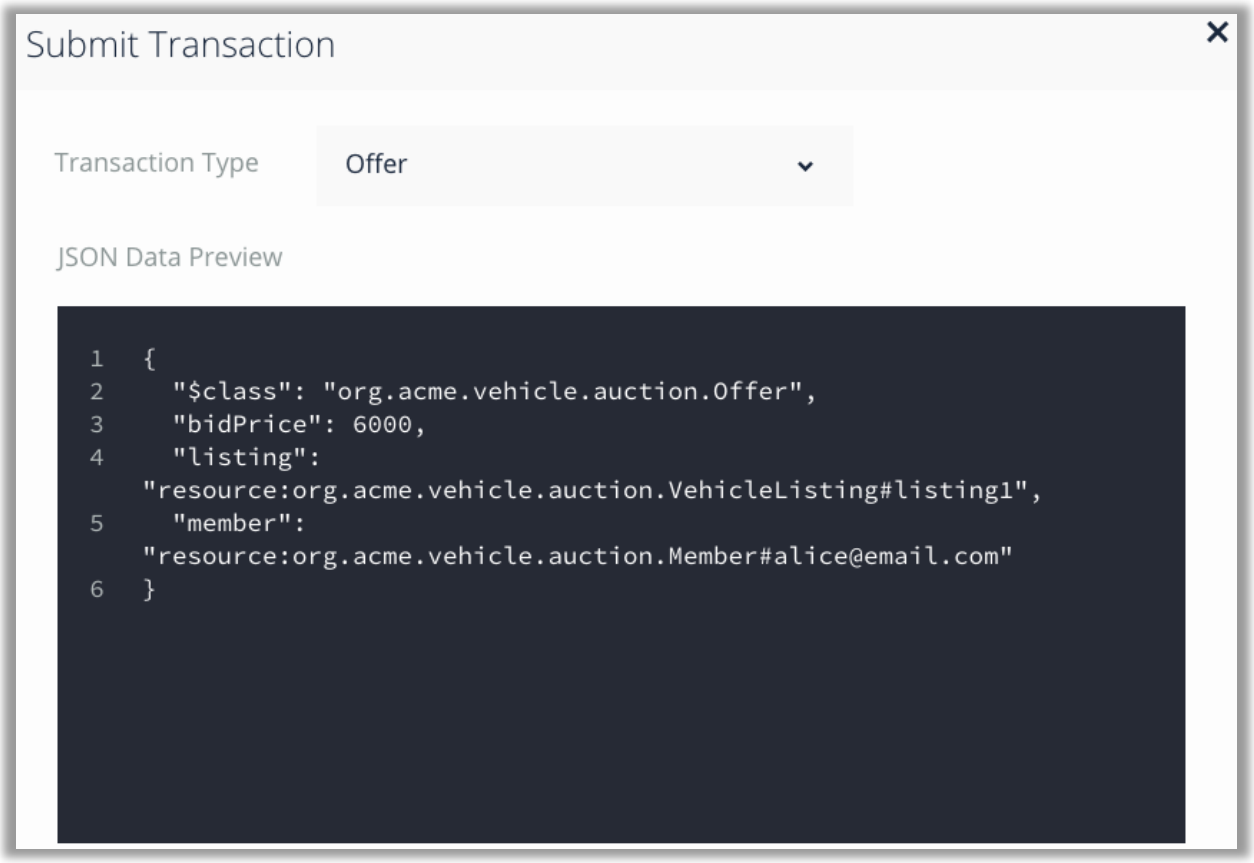


We will now let Alice and Bob bid on the vehicle.

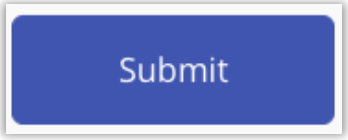
__23. Click **Submit Transaction**.



__24. Let Alice put in a bid of `6000`.



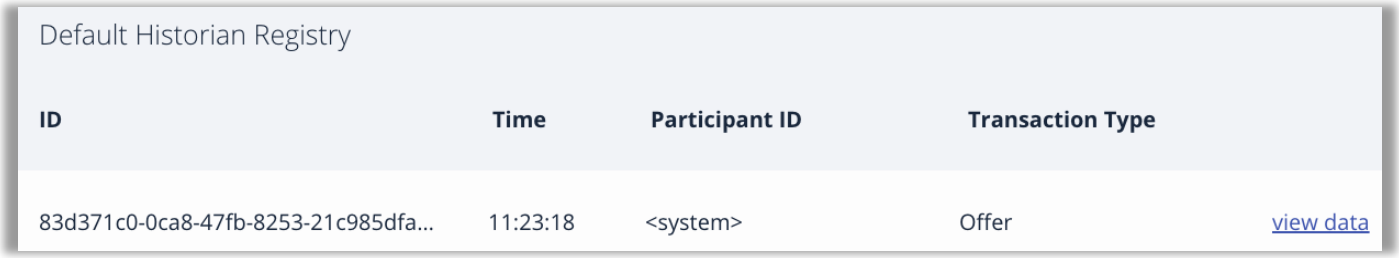
__25. Click **Submit** to submit the offer transaction.



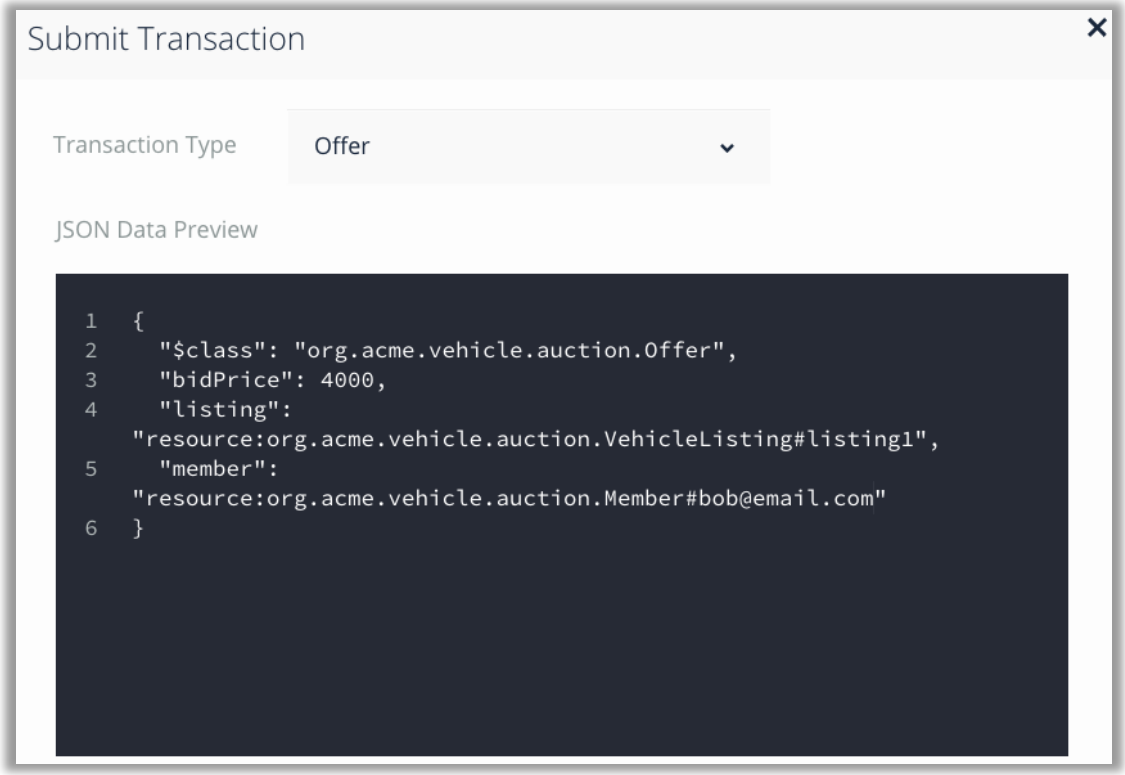
You can see that the transaction was successful in the Historian registry.

__26. Switch to view all transactions by clicking **All Transactions**.

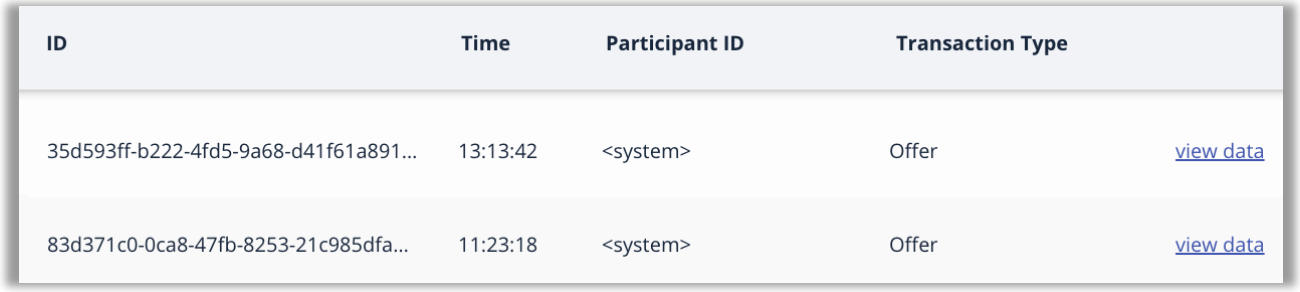
You can view the additional transactions for creating participants and assets. Click **view data** for more information.



__27. Let Bob put in a bid of `4000`.



__28. Verify the transactions in the registry.

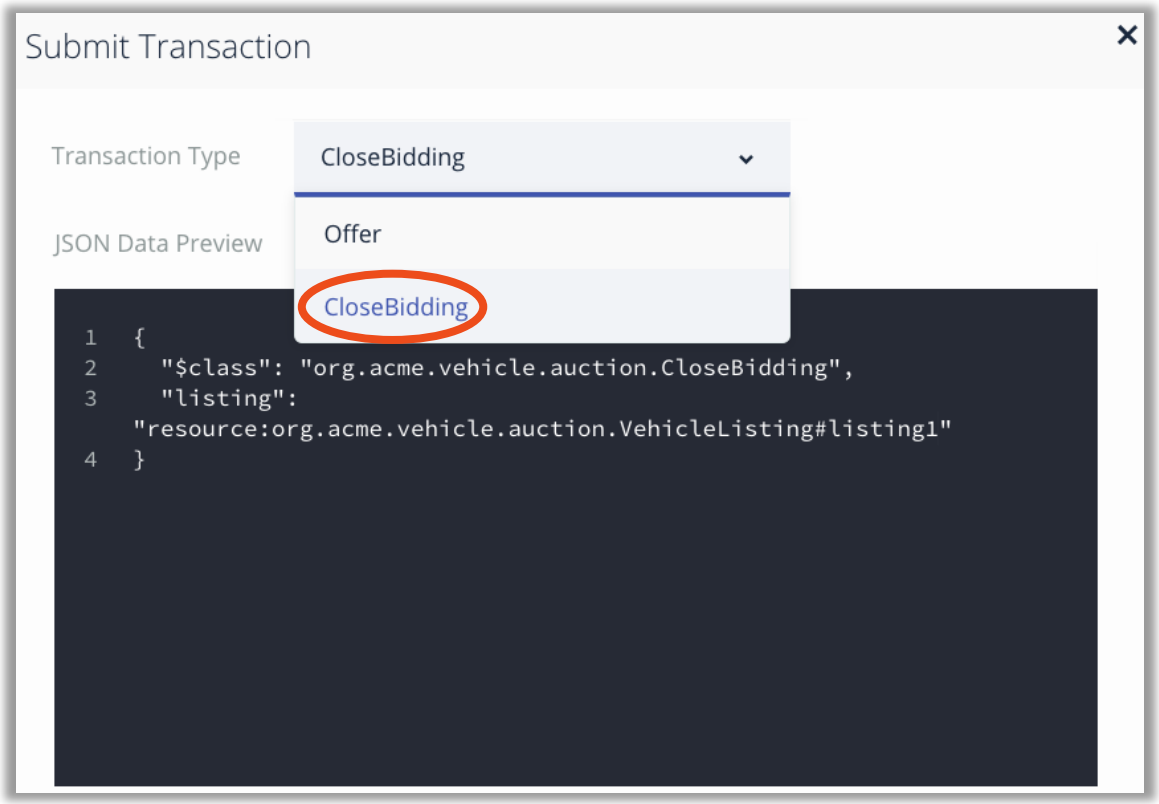


ID	Time	Participant ID	Transaction Type	
35d593ff-b222-4fd5-9a68-d41f61a891...	13:13:42	<system>	Offer	view data
83d371c0-0ca8-47fb-8253-21c985dfa...	11:23:18	<system>	Offer	view data

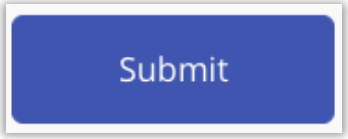
Note that the transactions cannot be edited or individually deleted after they are submitted; this is one of the defining characteristics of a blockchain.

Now we want to close the bidding on the listing. To do so, we need to submit a `CloseBidding` transaction.

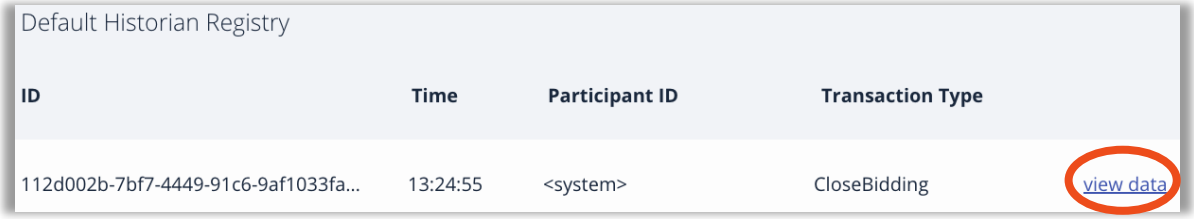
__29. Submit a new transaction. From the **Transaction Type** menu, select **CloseBidding**.

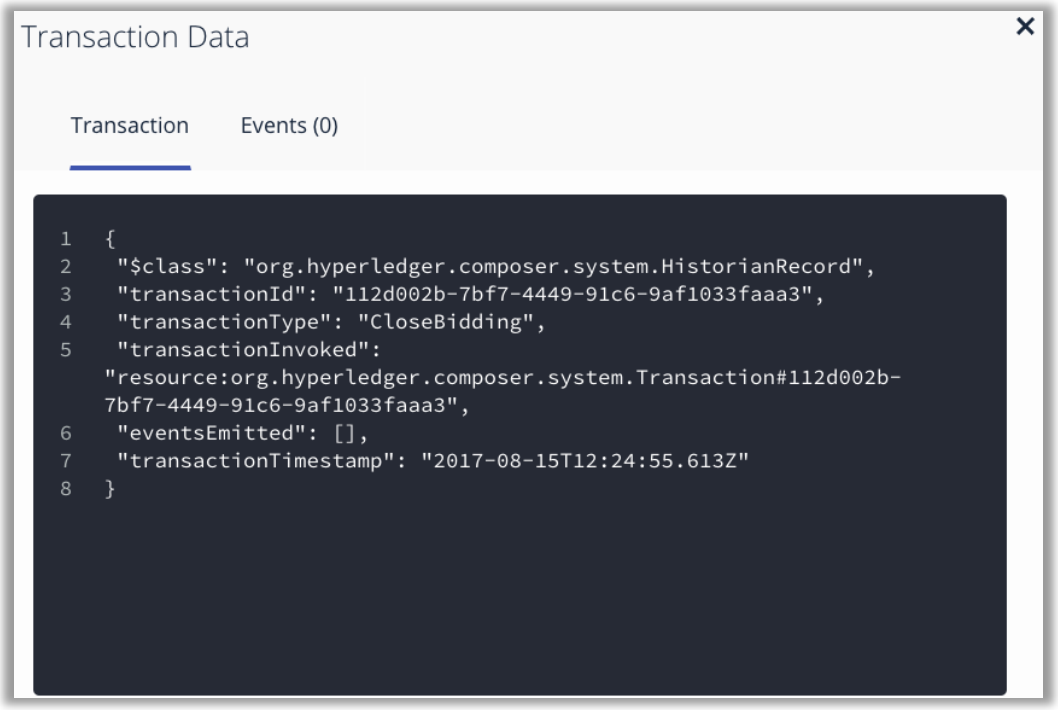


__30. Click **Submit** to submit the `CloseBidding` transaction.



__31. Verify that the transaction has been added to the blockchain transaction registry. Click **view data** to see the content of the transaction.

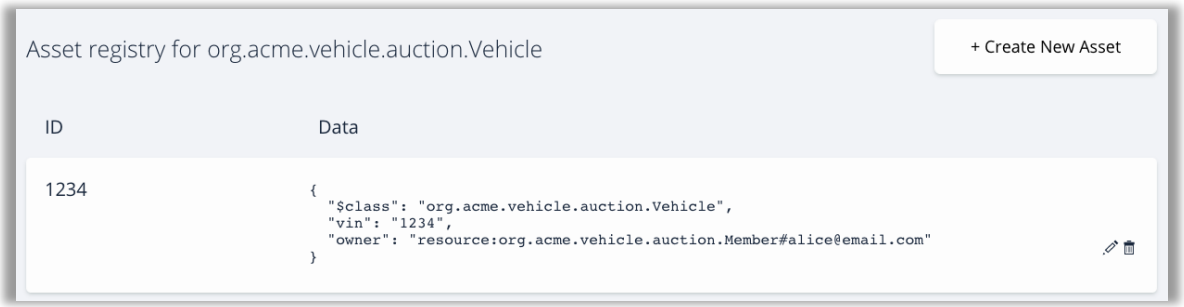




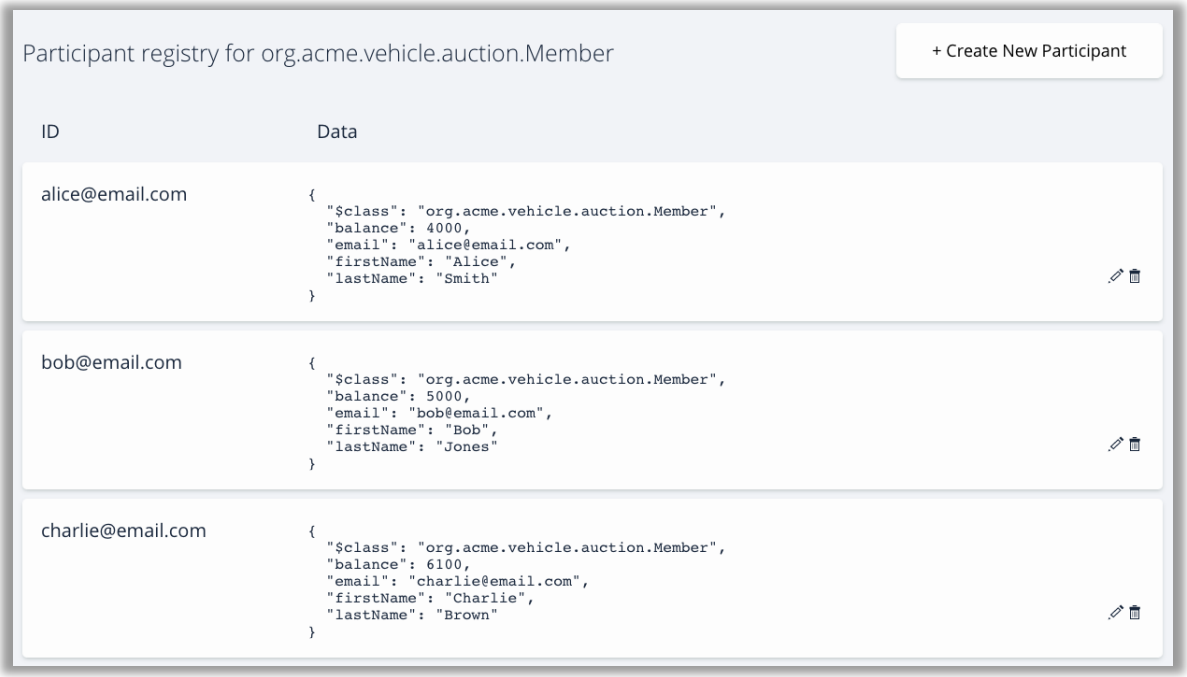
Based on the bids that were submitted, Alice should now be the owner because she put in the highest bid. We should also be able to verify that the owner of the car has changed, and specific balances increased or decreased accordingly.

__32. Go to the **Vehicle** asset registry to see that the vehicle owner has been updated to Alice.

__33. Note that the following vehicle is owned by Alice in the vehicle registry.



__34. Go to the **Member** asset registry to see that Charlie's balance has increased by the winning bid amount, and that Alice's balance has decreased by the same.



Congratulations! You have successfully transferred assets in a blockchain.