Short write up:

Small POC of Hotel Contract DApp

This implementation of the Hotel Contract DApp seeks to demonstrate the use case where

1. Hotel Manager is able to set up a contract, offering 2 packages.
2. A customer is able to view said packages.
3. Customer is able to purchase packages.
4. Customer is able to pay with SGD or ETH.
5. Payment will be withheld in Contract.
6. Contract will release payment to Hotel once Customer checks out.
7. Manager and Customer are both able to view past transactions.

Components:

1. Hotel HTML Page (Hotel\_Proposals.html)
2. Customer HTML Page (requester.html)
3. Hotel Smart Contract (Hotel.sol)

Hotel and Customer HTML Page contains web3.js javascript that interacts with the Hotel Smart Contract. Hotel and Customer HTML Page will each have their own account.

Hotel uses the account: 0xfdd7aa0b1bcbb77df50b9ef2a5559808d07396d7

Customer uses the account: 0x1c5f708395f2c13cb3471ea3e4332b1b3a6408ca

Ethereum Infrastructure:

1. HTML page sit on a XAMMP web server
2. Smart contract sits on EVM
3. Miners (can reuse the Hotel or Customer accounts)
4. Truffle is used for compilation and deployment of smart contract

Usage of Hotel Page:

Steps:

1. click on “click me!”
2. Select contract to edit and click on “Set Contract”
   1. Hotel can set up up to 2 packages with different values, customer can choose which contract/package they wish to purchase
3. After setting the values click “Set Value”
4. Click “Check Contract Balance” to review the values currently held in the contract
   1. There are three values, SGD in holding, ETH in holding and SGD earned
   2. When customer checks out ETH is transferred from the Contract to the Hotel’s account. SGD is a dummy value, when customer purchase, SGD in holding is incremented. When customer checks out, the value is transferred to SGD earned. This is to simulate the SGD dollar amount being transferred.
5. Click Go! Under “View Transactions by Account” panel to view past transactions

Usage of Customer Page:

Steps:

1. click on “click me!”
2. Select contract to view by clicking on “Set Contract”
   1. Customer can view up to 2 packages with different values, customer can choose which contract/package they wish to purchase
3. Click “Get Value” to view package terms
4. Select to pay in SGD or ETH and click “Buy Package?”
5. Click on “Check Out” to release funds
6. Click Go! Under “View Transactions by Account” panel to view past transactions

Limitations:

1. SGD payment is currently dummy/stub functions
2. SGD and ETH conversion is fixed 1 ETH is 1/395 SGD
3. Currently the implementation works for a serial case, where the manager can set two contracts but a customer purchase and checks out a transaction/package. However, if testing with random purchase and check out by the same customer (i.e. clicking the button multiple times randomly), the code behaviour is untested. However, in a normal case where a particular customer purchases and checks out, the code will work for multiple customer as the contract removes the record based on the customer’s Ethereum account. However, behaviour for large volume stress testing, is untested.