

# Property Registration – Hyperledger Course Assignment

## Network Setup:

Run the following commands to bootstrap the network:

```
./fabricNetwork.sh up
```

Above command also does the generate part. So no need to run that explicitly.

Run the below command to check if all containers are UP and running:

```
docker ps -a
```

Run below command in new terminal tab to start the chaincode container:

```
docker exec -it chain code /bin/bash
```

Then :

```
npm install
```

Then :

```
npm run start-dev
```

Run below command to Install & Instantiate the chaincode on the network:

```
./fabricNetwork install
```

Run below command in new terminal tab to connect to cli node :

```
docker exec -it cli /bin/bash
```

Open another new terminal tab and run the above command again.

Then :

Run below commands to switch this terminal to User peer :

```
export CORE_PEER_LOCALMSPID=usersMSP
```

```
export CORE_PEER_ADDRESS=peer0.users.property-registration-network.com:9051
```

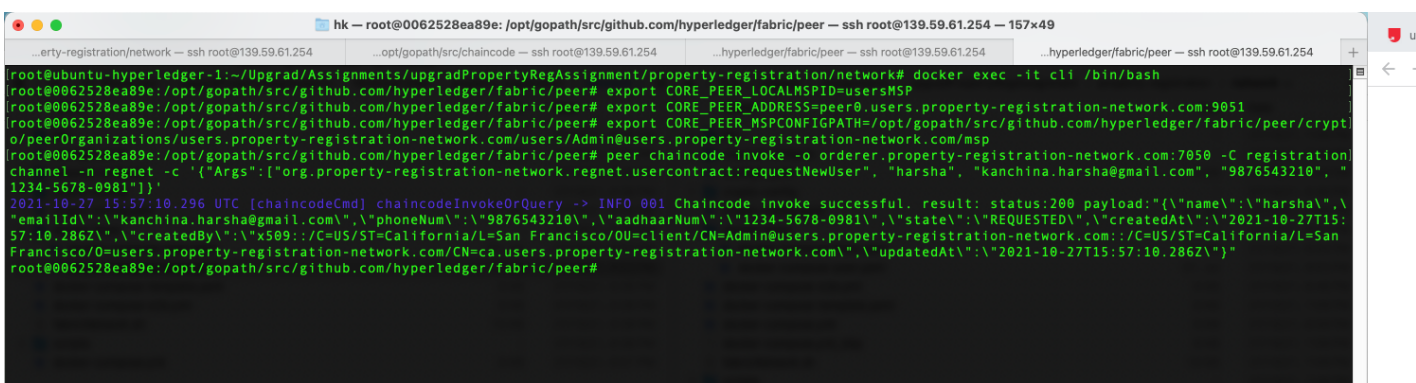
```
export CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/  
crypto/peerOrganizations/users.property-registration-network.com/users/Admin@users.property-  
registration-network.com/msp
```

Function Invocation:

Run the below commands in sequence to check the output of each function invoked as part of Property Registration Network Chaincode smart contracts:

**requestNewUser:**

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n  
regnet -c '{"Args":["org.property-registration-network.regnet.usercontract:requestNewUser",  
"harsha", "kanchina.harsha@gmail.com", "9876543210", "1234-5678-0981"]}]'
```



```
hk — root@0062528ea89e: /opt/gopath/src/github.com/hyperledger/fabric/peer — ssh root@139.59.61.254 — 157x49  
erty-registration-network — ssh root@139.59.61.254 .opt/gopath/src/chaincode — ssh root@139.59.61.254 .hyperledger/fabric/peer — ssh root@139.59.61.254 .hyperledger/fabric/peer — ssh root@139.59.61.254  
root@ubuntu-hyperledger-1:~/Upgrad/Assignments/upgradPropertyRegAssignment/property-registration/network# docker exec -it cli /bin/bash  
root@0062528ea89e:/opt/gopath/src/github.com/hyperledger/fabric/peer# export CORE_PEER_LOCALMSPID=usersMSP  
root@0062528ea89e:/opt/gopath/src/github.com/hyperledger/fabric/peer# export CORE_PEER_ADDRESS=peer0.users.property-registration-network.com:9051  
root@0062528ea89e:/opt/gopath/src/github.com/hyperledger/fabric/peer# export CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypt  
o/peerOrganizations/users.property-registration-network.com/users/Admin@users.property-registration-network.com/msp  
root@0062528ea89e:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registration  
channel -n regnet -c '{"Args":["org.property-registration-network.regnet.usercontract:requestNewUser", "harsha", "kanchina.harsha@gmail.com", "9876543210", "  
1234-5678-0981"]}]'  
2021-10-27 15:57:10.296 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 801 Chaincode invoke successful. result: status:200 payload:{"name":"harsha",\  
"emailId":"kanchina.harsha@gmail.com", "phoneNum":"9876543210", "aadhaarNum":"1234-5678-0981", "state":"REQUESTED", "createdAt":"2021-10-27T15:  
57:10.286Z", "createdBy":"x589:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin/users.property-registration-network.com:/C=US/ST=California/L=San  
Francisco/O=users.property-registration-network.com/CN=ca.users.property-registration-network.com", "updatedAt":"2021-10-27T15:57:10.286Z"}  
root@0062528ea89e:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

**approveNewUser:** (as Registrar)

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n  
regnet -c '{"Args":["org.property-registration-network.regnet:approveNewUser", "harsha",  
"1234-5678-0981"]}]'
```

```
...erty-registration/network — ssh root@139.59.61.254 ...opt/gopath/src/chaincode — ssh root@139.59.61.254 ...hyperledger/fabric/peer — ssh root@139.59.61.254 ...hyperledger/fabric/peer — ssh root@139.59.61.254 +
root@ubuntu-hyperledger-1:~/Upgrad/Assignments/upgradPropertyRegAssignment/property-registration/network# docker exec -it cli /bin/bash
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet:approveNewUser", "harsha", "1234-5678-0981"]}'
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: No user exists with given name & aadhaarNum"
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet:approveNewUser", "harsha", "1234-5678-0981"]}'
2021-10-27 17:33:11.556 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{\\"name\\":\\"harsha\\",\\"emailId\\":\\"kanchina.harsha@gmail.com\\",\\"phoneNum\\":\\"9876543210\\",\\"aadhaarNum\\":\\"1234-5678-0981\\",\\"state\\":\\"APPROVED\\",\\"createdAt\\":\\"2021-10-27T17:33:07.562Z\\",\\"createdBy\\":\\"x509::/C=US/ST=California/L=San Francisco/OU=client/CN=Admin@users.property-registration-network.com::/C=US/ST=California/L=San Francisco/OU=users.property-registration-network.com/CN=ca.users.property-registration-network.com\\",\\"updatedAt\\":\\"2021-10-27T17:33:11.548Z\\",\\"upgradCoins\\":0,\\"updatedBy\\":\\"x509::/C=US/ST=California/L=San Francisco/OU=client/CN=Admin@registrar.property-registration-network.com::/C=US/ST=California/L=San Francisco/OU=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\\"}"
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

## rechargeAccount:

peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet:usercontract:rechargeAccount", "harsha", "1234-5678-0981", "upg1000"]}'

```
...erty-registration/network — ssh root@139.59.61.254 ...opt/gopath/src/chaincode — ssh root@139.59.61.254 ...hyperledger/fabric/peer — ssh root@139.59.61.254 ...hyperledger/fabric/peer — ssh root@139.59.61.254 +
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet:usercontract:rechargeAccount", "harsha", "1234-5678-0981", "upg1000"]}'
2021-10-27 17:34:26.183 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{\\"name\\":\\"harsha\\",\\"emailId\\":\\"kanchina.harsha@gmail.com\\",\\"phoneNum\\":\\"9876543210\\",\\"aadhaarNum\\":\\"1234-5678-0981\\",\\"state\\":\\"APPROVED\\",\\"createdAt\\":\\"2021-10-27T17:33:07.562Z\\",\\"createdBy\\":\\"x509::/C=US/ST=California/L=San Francisco/OU=client/CN=Admin@users.property-registration-network.com::/C=US/ST=California/L=San Francisco/OU=users.property-registration-network.com/CN=ca.users.property-registration-network.com\\",\\"updatedAt\\":\\"2021-10-27T17:33:11.548Z\\",\\"upgradCoins\\":1000,\\"updatedBy\\":\\"x509::/C=US/ST=California/L=San Francisco/OU=client/CN=Admin@registrar.property-registration-network.com::/C=US/ST=California/L=San Francisco/OU=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\\"}"
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

## viewUser:

peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet:usercontract:viewUser", "harsha", "1234-5678-0981"]}'

## viewUser: (as Registrar)

peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet:viewUser", "harsha", "1234-5678-0981"]}'

```
...erty-registration/network — ssh root@139.59.61.254 ...opt/gopath/src/chaincode — ssh root@139.59.61.254 ...hyperledger/fabric/peer — ssh root@139.59.61.254 ...hyperledger/fabric/peer — ssh root@139.59.61.254 +
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet:usercontract:viewUser", "harsha", "1234-5678-0981"]}'
2021-10-27 17:36:00.854 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{\\"name\\":\\"harsha\\",\\"emailId\\":\\"kanchina.harsha@gmail.com\\",\\"phoneNum\\":\\"9876543210\\",\\"aadhaarNum\\":\\"1234-5678-0981\\",\\"state\\":\\"APPROVED\\",\\"createdAt\\":\\"2021-10-27T17:33:07.562Z\\",\\"createdBy\\":\\"x509::/C=US/ST=California/L=San Francisco/OU=client/CN=Admin@users.property-registration-network.com::/C=US/ST=California/L=San Francisco/OU=users.property-registration-network.com/CN=ca.users.property-registration-network.com\\",\\"updatedAt\\":\\"2021-10-27T17:33:11.548Z\\",\\"upgradCoins\\":1000,\\"updatedBy\\":\\"x509::/C=US/ST=California/L=San Francisco/OU=client/CN=Admin@registrar.property-registration-network.com::/C=US/ST=California/L=San Francisco/OU=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\\"}"
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

```

..erty-registration/network — ssh root@139.59.61.254      ..opt/gopath/src/chaincode — ssh root@139.59.61.254      ..hyperledger/fabric/peer — ssh root@139.59.61.254      ..hyperledger/fabric/peer — ssh root@139.59.61.254      +
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet:viewUser", "harsha", "1234-5678-0981"]}'
2021-10-27 17:38:11.166 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"name":"harsha","emailId":"kanchina.harsha@gmail.com","phoneNum":"9876543210","aadhaarNum":"1234-5678-0981","state":"APPROVED","createdAt":"2021-10-27T17:33:07.562Z","createdBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin@users.property-registration-network.com:/C=US/ST=California/L=San Francisco/OU=users.property-registration-network.com/CN=ca.users.property-registration-network.com","updatedAt":"2021-10-27T17:33:11.548Z","upgradCoins":1000,"updatedBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin@registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/OU=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com"}
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer#

```

## propertyRegistrationRequest:

peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.usercontract:propertyRegistrationRequest", "001", "225", "requested", "harsha", "1234-5678-0981"]}'

```

..erty-registration/network — ssh root@139.59.61.254      ..opt/gopath/src/chaincode — ssh root@139.59.61.254      ..hyperledger/fabric/peer — ssh root@139.59.61.254      ..hyperledger/fabric/peer — ssh root@139.59.61.254      +
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.usercontract:propertyRegistrationRequest", "001", "225", "requested", "harsha", "1234-5678-0981"]}'
2021-10-27 17:43:21.501 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"propertyId":"001","owner":"\u0000org.property-registration-network.regnet.user\u0000harsha\u00001234-5678-0981\u0000","price":225,"state":"REQUESTED","createdBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin@users.property-registration-network.com:/C=US/ST=California/L=San Francisco/OU=users.property-registration-network.com/CN=ca.users.property-registration-network.com","createdAt":"2021-10-27T17:43:21.496Z","updatedBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin@users.property-registration-network.com:/C=US/ST=California/L=San Francisco/OU=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com","updatedAt":"2021-10-27T17:43:21.496Z"}
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer#

```

## approvePropertyRegistration: (as Registrar)

peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet:approvePropertyRegistration", "001"]}'

```

..erty-registration/network — ssh root@139.59.61.254      ..opt/gopath/src/chaincode — ssh root@139.59.61.254      ..hyperledger/fabric/peer — ssh root@139.59.61.254      ..hyperledger/fabric/peer — ssh root@139.59.61.254      +
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet:approvePropertyRegistration", "001"]}'
2021-10-27 17:48:50.245 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:{"propertyId":"001","owner":"\u0000org.property-registration-network.regnet.user\u0000harsha\u00001234-5678-0981\u0000","price":225,"state":"REQUESTED","createdBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin@users.property-registration-network.com:/C=US/ST=California/L=San Francisco/OU=users.property-registration-network.com/CN=ca.users.property-registration-network.com","createdAt":"2021-10-27T17:43:21.496Z","updatedBy":"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin@registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/OU=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com","updatedAt":"2021-10-27T17:48:50.240Z","status":"REGISTERED"}
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer#

```

## viewProperty: (as Registrar)

peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.viewProperty", "001"]}'

## viewProperty:

peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.usercontract:viewProperty", "001"]}'

```
...erty-registration/network -- ssh root@139.59.61.254 ..opt/gopath/src/chaincode -- ssh root@139.59.61.254 ..hyperledger/fabric/peer -- ssh root@139.59.61.254 ..hyperledger/fabric/peer -- ssh root@139.59.61.254 + upGrad
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet:viewProperty", "001"]}'
2021-10-27 17:50:13.750 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{\\"propertyId\\":\\"001\\",\\"owner\\":\\"\\u0000org.property-registration-network.regnet.user\\u0000harsha\\u00001234-5678-0981\\u0000\\",\\"price\\":225,\\"state\\":\\"REQUESTED\\",\\"createdBy\\":\\"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin@users.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=users.property-registration-network.com/CN=ca.users.property-registration-network.com\\",\\"createdAt\\":\\"2021-10-27T17:43:21.496Z\\",\\"updatedBy\\":\\"x509:/C=US/ST=California/L=San Francisco/OU=client/CN=Admin@registrar.property-registration-network.com:/C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\\",\\"updatedAt\\":\\"2021-10-27T17:48:50.240Z\\",\\"status\\":\\"REGISTERED\\"}"
root@8c79ff50b8d0:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

## updateProperty:

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.usercontract:updateProperty", "001", "onSale", "harsha", "1234-5678-0981"]}'
```

## purchaseProperty:

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.usercontract:purchaseProperty", "001", "Nikki", "1011-5678-0981"]}'
```