

PROPERTY REGISTRATION

Case Study Functionality Testing Document

Assignment : PROPERTY REGISTRATION Case Study

Submission to : Upgrad

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PropertyRegistration Use Case : The source for the specifications of detailed Property Registration Case study is provided in the assignment module of course 7(Hyperledger Fabric).

The assignment is divided into two segments, one is the fabricNetwork setup and the second one is Chaincode Development and deploying it on top of the network.

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SEGMENT1: FABRIC NETWORK SETUP

1. Prerequisites for fabric Network Set up

- Check the folders having Read-write-Execute permisions , if not change the permissions of the folders
- Add the path of the binaries to the .bashrc file
Add the bin folder of the property-registration to the .bashrc file
Step1: open the terminal, type the command
`sudo nano /root/.bashrc` (This will open the /root/.bashrc file on the terminal.)
Step2: Add the following at the end of this file:
`export PATH = ~workspace/property-registration/network/bin:$PATH`
save the file using Ctrl+X

2. Steps to start the fabric Network

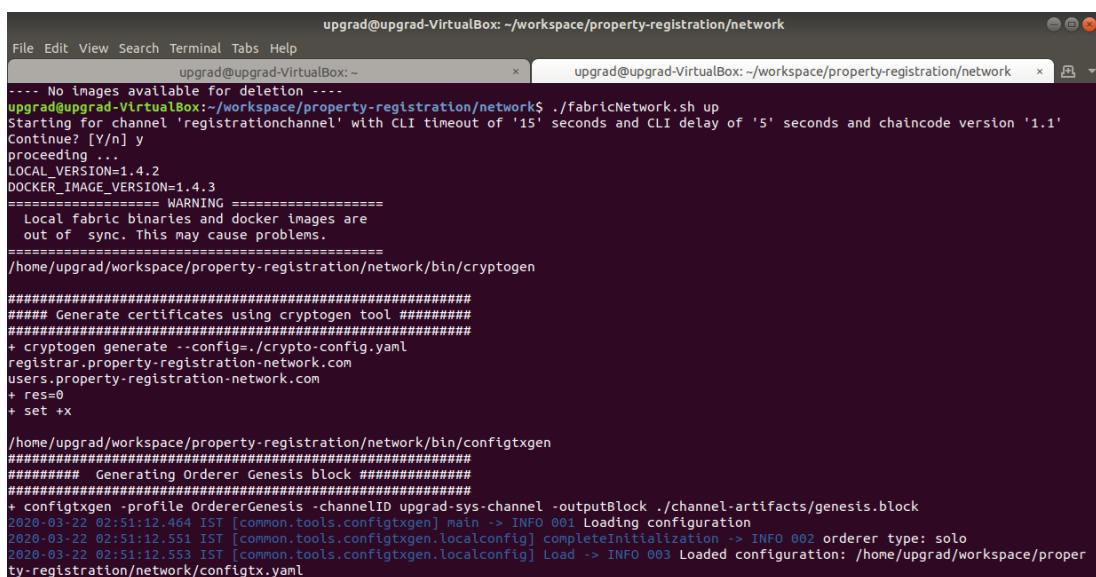
I. Bootstrap the network

Open a new tab in the terminal . Type the command `cd ~workspace/property-registration/network/`
Start the network using

`./fabricNetwork.sh up`

Note: Before starting the network make sure that there are no containers running.

Check the status by using the command `docker ps -a`. If any containers are up, remove the containers using `docker-compose -f docker-compose.yml down --volumes --remove-orphans`



The screenshot shows a terminal window with two tabs. The left tab shows the command `./fabricNetwork.sh up` being run. The output indicates that no images are available for deletion, and it starts a channel named 'registrationchannel'. It asks for confirmation to proceed ('Continue? [Y/n]'), which is answered with 'y'. It then shows environment variables `LOCAL_VERSION=1.4.2` and `DOCKER_IMAGE_VERSION=1.4.3`. A warning message states that local fabric binaries and docker images are out of sync, which may cause problems. The process then moves to the cryptogen directory, generating certificates using the cryptogen tool. It creates files for the registrar, property-registration-network.com, and users.property-registration-network.com. It then moves to the configtxgen directory, generating an Orderer Genesis block. The log shows configuration loading and initialization steps, including the creation of a genesis block and the loading of local configuration files.

```
upgrad@upgrad-VirtualBox: ~/workspace/property-registration/network
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~
upgrad@upgrad-VirtualBox:~/workspace/property-registration/network$ ./fabricNetwork.sh up
---- No images available for deletion ----
upgrad@upgrad-VirtualBox:~/workspace/property-registration/network$ ./fabricNetwork.sh up
Starting for channel 'registrationchannel' with CLI timeout of '15' seconds and CLI delay of '5' seconds and chaincode version '1.1'
Continue? [Y/n] y
proceeding ...
LOCAL_VERSION=1.4.2
DOCKER_IMAGE_VERSION=1.4.3
=====
===== WARNING =====
  Local fabric binaries and docker images are
  out of sync. This may cause problems.
=====
/home/upgrad/workspace/property-registration/network/bin/cryptogen

#####
#### Generate certificates using cryptogen tool #####
#####
+ cryptogen generate --config=./crypto-config.yaml
registrar.property-registration-network.com
users.property-registration-network.com
+ res=0
+ set +x

/home/upgrad/workspace/property-registration/network/bin/configtxgen
#####
##### Generating Orderer Genesis block #####
#####
+ configtxgen -profile OrdererGenesis -channelID upgrad-sys-channel -outputBlock ./channel-artifacts/genesis.block
2020-03-20 02:51:12.404 IST [common.tools.configtxgen] main -> INFO 001 Loading configuration
2020-03-20 02:51:12.551 IST [common.tools.configtxgen.localconfig] completeInitialization -> INFO 002 orderer type: solo
2020-03-20 02:51:12.553 IST [common.tools.configtxgen.localconfig] Load -> INFO 003 Loaded configuration: /home/upgrad/workspace/property-registration/network/configtx.yaml
```

```
upgrad@upgrad-VirtualBox: ~/workspace/property-registration/network
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~ upgrad@upgrad-VirtualBox: ~/workspace/property-registration/network
711d66ec2eb7 hyperledger/fabric-ca:latest "sh -c 'fabric-ca-se..." 3 days ago Exited (255) 7 hours ago 0.0.0.0
:9054->7054/tcp ca.upgrad.certification-network.com
6467d2ed808f hyperledger/fabric-peer:latest "peer node start --p..." 3 days ago Exited (1) 3 days ago
peer0.upgrad.certification-network.com
Sleeping 10s to allow cluster to complete booting

Setting Up Hyperledger Fabric Network

Channel name : registrationchannel
+ peer channel create -o orderer.property-registration-network.com:7050 -c registrationchannel -f ./channel-artifacts/channel.tx
Creating channel...
+ res=0
+ set +x
2020-03-21 21:22:14.428 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2020-03-21 21:22:14.620 UTC [cli.common] readBlock -> INFO 002 Received block: 0
===== Channel 'registrationchannel' created =====

Having all peers join the channel...
+ peer channel join -b registrationchannel.block
+ res=0
+ set +x
2020-03-21 21:22:14.858 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2020-03-21 21:22:15.085 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
===== peer0.registrar.registration-network.com joined channel 'registrationchannel' =====
```

```
upgrad@upgrad-VirtualBox: ~/workspace/property-registration/network
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~ upgrad@upgrad-VirtualBox: ~/workspace/property-registration/network
2020-03-21 21:22:30.377 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2020-03-21 21:22:36.481 UTC [channelCmd] executeJoin -> INFO 002 Successfully submitted proposal to join channel
+ peer channel update -o orderer.property-registration-network.com:7050 -c registrationchannel -f ./channel-artifacts/registrarMSPancho
rs.tx
Updating anchor peers for REGISTRAR...
+ res=0
+ set +x
2020-03-21 21:22:36.692 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2020-03-21 21:22:36.735 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
===== Anchor peers updated for org 'registrarMSP' on channel 'registrationchannel' =====

Updating anchor peers for USERS...
+ peer channel update -o orderer.property-registration-network.com:7050 -c registrationchannel -f ./channel-artifacts/usersMSPanchors.t
x
+ res=0
+ set +x
2020-03-21 21:22:41.965 UTC [channelCmd] InitCmdFactory -> INFO 001 Endorser and orderer connections initialized
2020-03-21 21:22:42.023 UTC [channelCmd] update -> INFO 002 Successfully submitted channel update
===== Anchor peers updated for org 'usersMSP' on channel 'registrationchannel' =====

===== All GOOD, Hyperledger Fabric Property Registration Network Is Now Up and Running! =====


```

II. Installing dependencies

Ensure that all the dependencies mentioned in the package.json file are available as node modules inside the chaincode folder. To generate node_modules, open a new tab in the terminal

SSH into chaincode container using command

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

Type the command “ls” to list the files present in chaincode folder

```
upgrad@upgrad-VirtualBox:~/workspace/property-registration/network$ docker exec -it chaincode /bin/bash
root@113b00812abd:/opt/gopath/src/chaincode# ls
index.js package.json registrar-contract.js users-contract.js
```

Install the dependencies using `npm install`

```
root@113b00812abd:/opt/gopath/src/chaincode ~ x root@113b00812abd:/opt/gopath/src/chaincode x
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~
root@113b00812abd:/opt/gopath/src/chaincode npm install
npm WARN deprecated mkdirp@0.5.1: Legacy versions of mkdirp are no longer supported. Please update to mkdirp 1.x. (Note that the API su
rface has changed to use Promises in 1.x.)
npm WARN deprecated circular-json@0.3.3: circularJSON is in maintenance only, flattened is its successor.

> @ampretia/x509@0.4.7 install /opt/gopath/src/chaincode/node_modules/fabric-shim/node_modules/@ampretia/x509
> node-gyp rebuild

make: Entering directory '/opt/gopath/src/chaincode/node_modules/fabric-shim/node_modules/@ampretia/x509/build'
  CXX(target) Release/obj.target/x509/src/addon.o
  CXX(target) Release/obj.target/x509/src/x509.o
  ./src/x509.cc: In function 'v8::Local<v8::Value> try_parse(const string&)':
  ./src/x509.cc:409:38: warning: value computed is not used [-Wunused-value]
    BIO_set_close(ext_bio, BIO_CLOSE);
                                ^
SOLINK_MODULE(target) Release/obj.target/x509.node
COPY Release/x509.node
make: Leaving directory '/opt/gopath/src/chaincode/node_modules/fabric-shim/node_modules/@ampretia/x509/build'

> grpc@1.23.3 install /opt/gopath/src/chaincode/node_modules/fabric-shim/node_modules/grpc
> node-pre-gyp install --fallback-to-build --library=static_library

node-pre-gyp WARN Using needle for node-pre-gyp https download
[grpc] Success: "/opt/gopath/src/chaincode/node_modules/fabric-shim/node_modules/grpc/src/node/extension_binary/node-v57-linux-x64-glib
c/grpc_node.node" is installed via remote
npm notice created a lockfile as package-lock.json. You should commit this file.
npm WARN regnet@0.0.1 No repository field.
npm WARN regnet@0.0.1 No license field.

added 492 packages from 1060 contributors and audited 988 packages in 103.913s
found 4 low severity vulnerabilities
```

To start the chaincode service on the container, type the below command

npm run start-dev

```
root@113b00812abd:/opt/gopath/src/chaincode# npm run start-dev
> regnet@0.0.1 start-dev /opt/gopath/src/chaincode
> fabric-chaincode-node start --peer.address peer0.registrar.property-registration-network.com:7053 --chaincode-id-name regnet:1.1

Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
2020-03-21T23:04:09.383Z info [shim:contracts-spi/bootstrap.js] No metadata file supplied in contract, introspection
will generate all the data
2020-03-21T23:04:09.385Z info [shim:contracts-spi/chaincodefromcontract.js] Using serializers {"transaction":"jsonSerializer","se
rializers":[]}
Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
2020-03-21T23:04:09.566Z info [shim:lib/chaincode.js] Registering with peer peer0.registrar.property-regist
ration-network.com:7053 as chaincode "regnet:1.1"

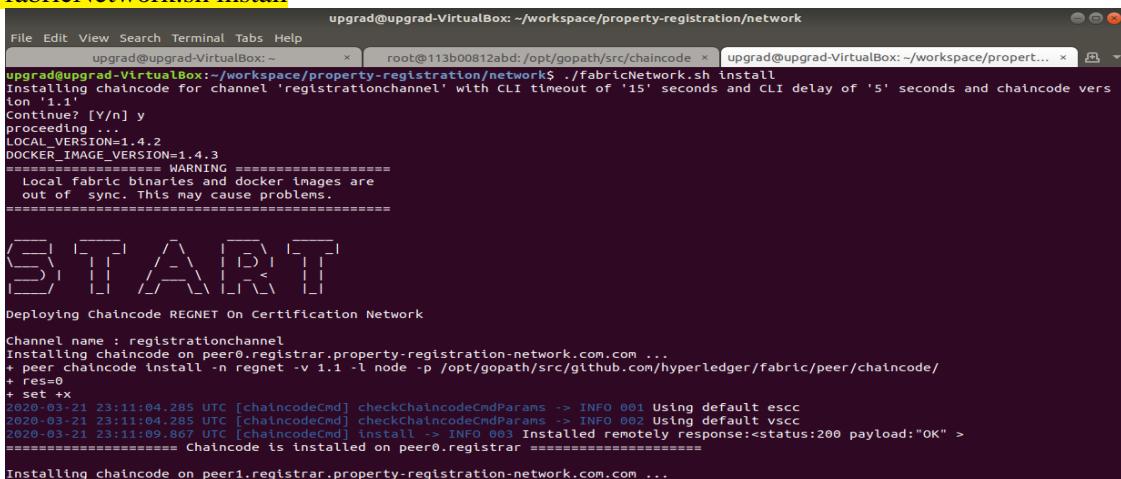
Command succeeded

2020-03-21T23:04:10.242Z info [shim:lib/handler.js] Successfully registered with peer node. State transfe
red to "established"
2020-03-21T23:04:10.245Z info [shim:lib/handler.js] Successfully established communication with peer node
└ State transferred to "ready"
```

III. Install and Instantiate the chaincode on the network

Open the new tab in the terminal and type the below command

```
/fabricNetwork.sh install
```



```
upgrad@upgrad-VirtualBox: ~/workspace/property-registration/network
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBox: ~          root@113b00812abd:/opt/gopath/src/chaincode > upgrad@upgrad-VirtualBox: ~/workspace/property...
upgrad@upgrad-VirtualBox:~/workspace/property-registration/network$ ./fabricNetwork.sh install
Installing chaincode for channel 'registrationchannel' with CLI timeout of '15' seconds and CLI delay of '5' seconds and chaincode version '1.1'
Continue? [Y/n] y
proceeding ...
LOCAL_VERSION=1.4.2
DOCKER_IMAGE_VERSION=1.4.3
===== WARNING =====
Local fabric binaries and docker images are
out of sync. This may cause problems.
=====
START
Deploying Chaincode REGNET On Certification Network
Channel name : registrationchannel
Installing chaincode on peer0.registrar.property-registration-network.com.com ...
+ peer chaincode install -n regnet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/
+ res=0
+ set +x
2020-03-21 23:11:04.285 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2020-03-21 23:11:04.285 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
2020-03-21 23:11:09.867 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >
===== Chaincode is installed on peer0.registrar =====
Installing chaincode on peer1.registrar.property-registration-network.com.com ...

```

The installation of chaincode was done successfully but an error encountered while instantiating the chaincode on peer0 of registrar

```
Instantiating chaincode on channel using peer0.registrar.property-registration-network.com.com ...
+ peer chaincode instantiate -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -l node -v 1.1 -c '{"Args":["org.property-registration-network.regnet:instantiate"]}' -P 'OR ('\\''registrarMSP.member'\\'',\\''usersMSP.member'\\'')'
+ res=1
+ set +x
2020-03-21 23:11:11.680 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc
2020-03-21 23:11:11.680 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc
Error: could not assemble transaction, err proposal response was not successful, error code 500, msg transaction returned with failure:
Error: Contract name is not known: org.property-registration-network.regnet
!!!!!!!!!!!!!! Chaincode instantiation on peer0.registrar on channel 'registrationchannel' failed !!!!!!!
===== ERROR !!! FAILED to execute Registration Network Bootstrap =====
```

Fixed the instantiation error by changing the Args parameter in the “utils.sh” file
In the instantiateChaincode() in line no. 142 and 147.

from:

```
peer chaincode instantiate -o orderer.property-registration-network.com:7050 -C "$CHANNEL_NAME"
-n regnet -l "${LANGUAGE}" -v "${VERSION}" -c '{"Args":["org.property-registration-
network.regnet:instantiate"]}' -P "OR
('registrarMSP.member','usersMSP.member','upgradMSP.member')"} >&log.txt
```

to:

```
peer chaincode instantiate -o orderer.property-registration-network.com:7050 -C "$CHANNEL_NAME"
-n regnet -l "${LANGUAGE}" -v "${VERSION}" -c '{"Args":["org.property-registration-
network.regnet.users:instantiate","org.propertyregistrationnetwork.regnet.registrar:instantiate"]}' -P "OR
('registrarMSP.member','usersMSP.member')"} >&log.txt
```

similarly in upgradeChaincode() line no. 165, 170 , invokeChaincode() changes done.

After making the necessary changes , need to instantiate the chaincode manually by following the below steps.

Note: we cannot run the automated script file because installation has already happened and re -installation of chaincode throws error saying “chaincode installation already exists”
open the new tab in the terminal and do it manually.

Ssh into cli container

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

Update the environment variables:

```
CORE_PEER_LOCALMSPID="registrarMSP"
```

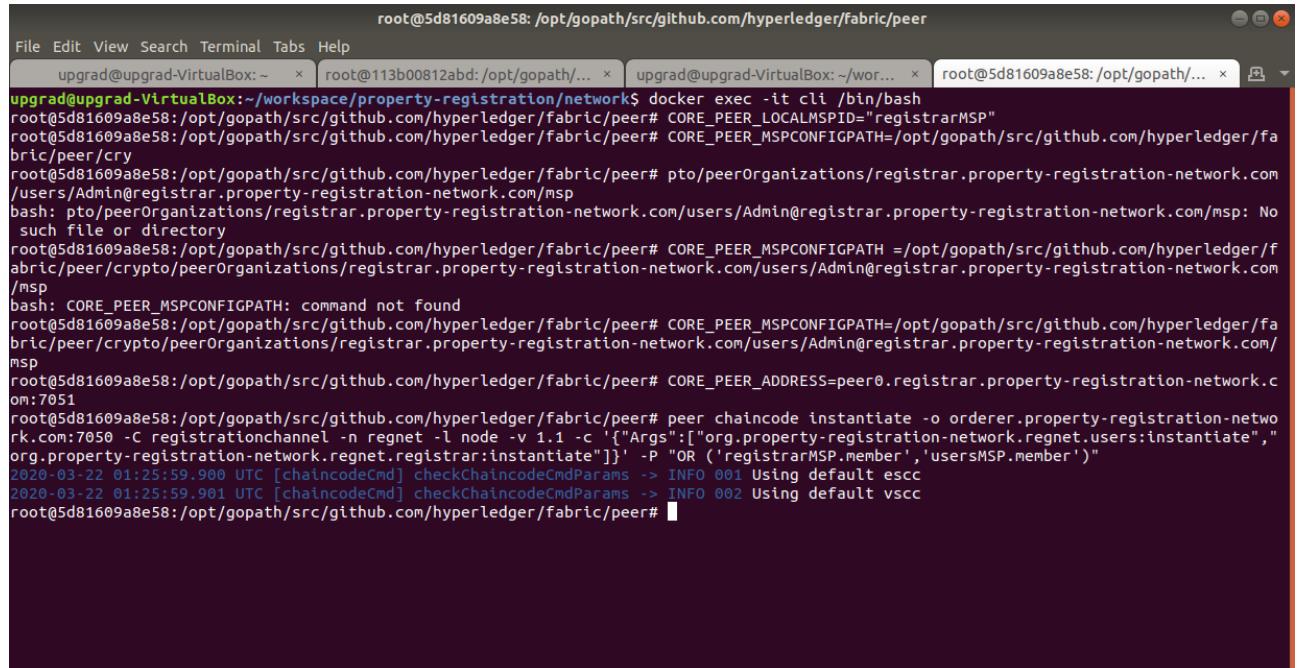
```
CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/cry
```

```
pto/peerOrganizations/registrar.property-registration-network.com/users/Admin@registrar.property-registration-network.com/msp  
CORE_PEER_ADDRESS=peer0.registrar.property-registration-network.com:7051
```

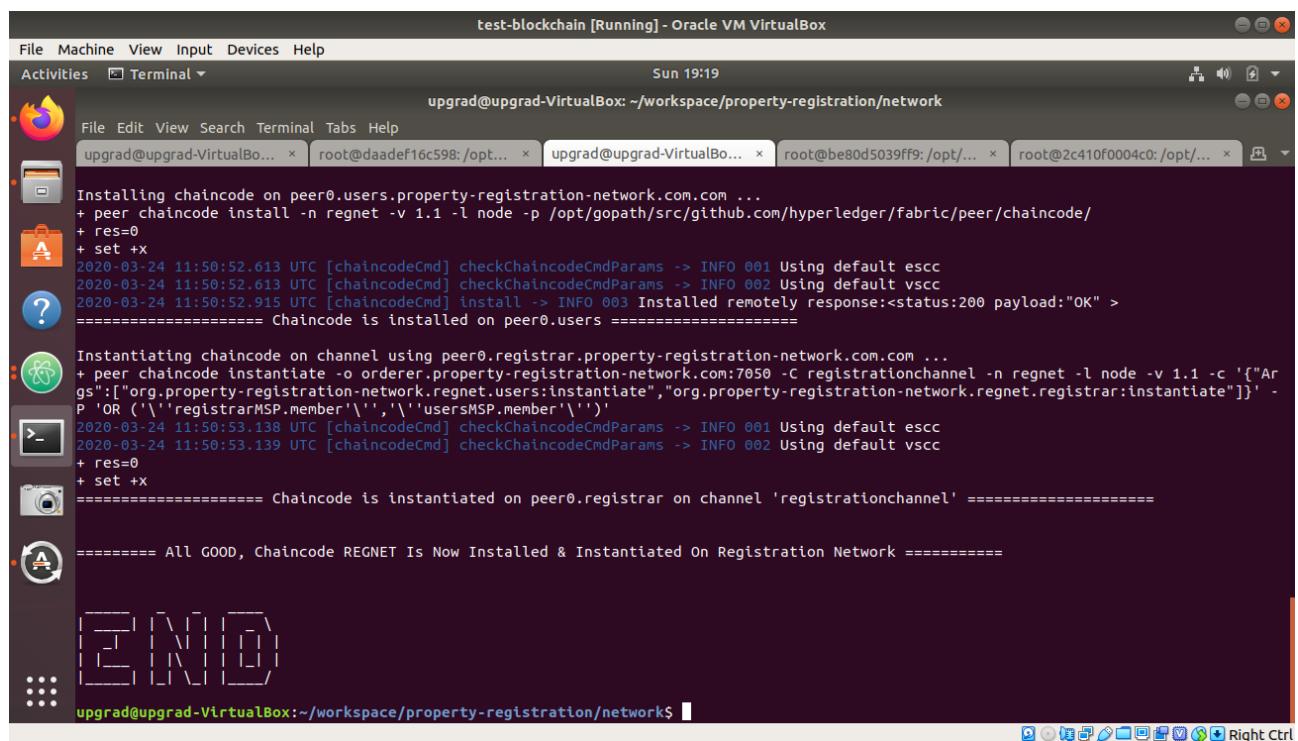
Now instantiate using:

```
peer chaincode instantiate -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -l node -v 1.1 -c '{"Args":["org.property-registration-network.regnet.users:instantiate","org.property-registrationnetwork.regnet.registrar:instantiate"]}' -P "OR ('registrarMSP.member','usersMSP.member')"
```

The screen will look as below:



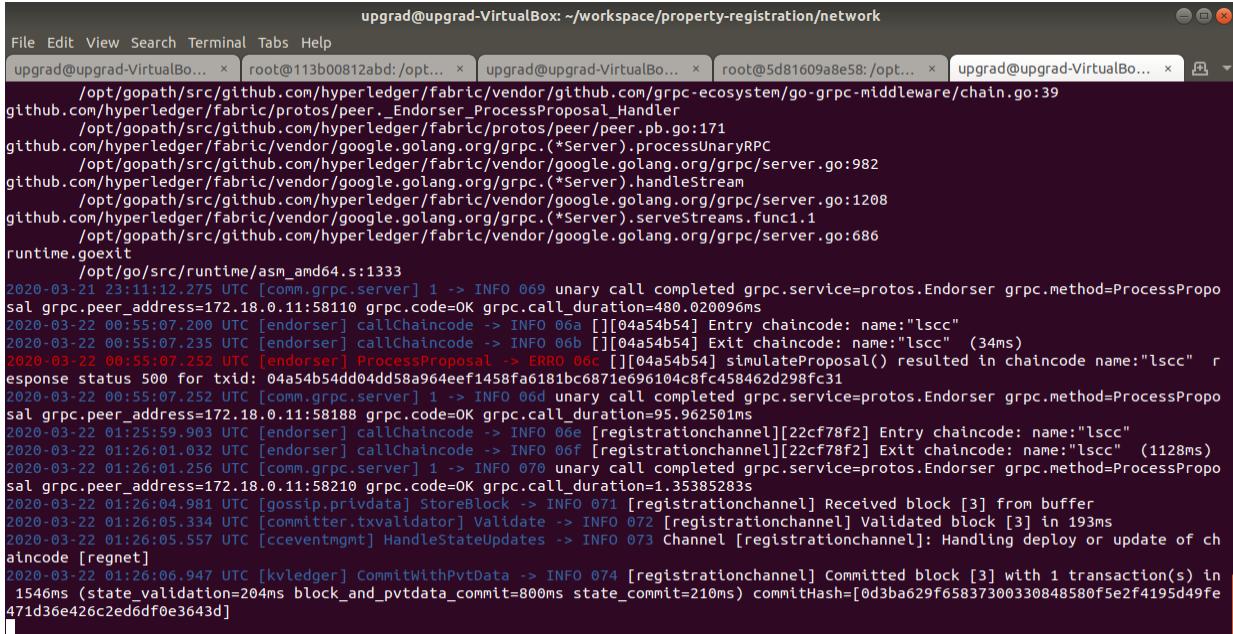
```
root@5d81609a8e58:/opt/gopath/src/github.com/hyperledger/fabric/peer  
File Edit View Search Terminal Tabs Help  
upgrade@upgrade-VirtualBox:~/workspace/property-registration/network$ docker exec -it cli /bin/bash  
root@5d81609a8e58:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_LOCALMSPID="registrarMSP"  
root@5d81609a8e58:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/cry  
root@5d81609a8e58:/opt/gopath/src/github.com/hyperledger/fabric/peer# pto/peerOrganizations/registrar.property-registration-network.com/users/Admin@registrar.property-registration-network.com/msp  
bash: pto/peerOrganizations/registrar.property-registration-network.com/users/Admin@registrar.property-registration-network.com/msp: No such file or directory  
root@5d81609a8e58:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/registrar.property-registration-network.com/users/Admin@registrar.property-registration-network.com/msp  
bash: CORE_PEER_MSPCONFIGPATH: command not found  
root@5d81609a8e58:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_MSPCONFIGPATH=/opt/gopath/src/github.com/hyperledger/fabric/peer/crypto/peerOrganizations/registrar.property-registration-network.com/users/Admin@registrar.property-registration-network.com/msp  
root@5d81609a8e58:/opt/gopath/src/github.com/hyperledger/fabric/peer# CORE_PEER_ADDRESS=peer0.registrar.property-registration-network.com:7051  
root@5d81609a8e58:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode instantiate -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -l node -v 1.1 -c '{"Args":["org.property-registration-network.regnet.users:instantiate","org.property-registration-network.regnet.registrar:instantiate"]}' -P "OR ('registrarMSP.member','usersMSP.member')"  
2020-03-22 01:25:59.900 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc  
2020-03-22 01:25:59.901 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc  
root@5d81609a8e58:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```



```
test-blockchain [Running] - Oracle VM VirtualBox  
File Machine View Input Devices Help  
Activities Terminal ▾ Sun 19:19  
upgrade@upgrade-VirtualBox:~/workspace/property-registration/network  
File Edit View Search Terminal Tabs Help  
upgrad@upgrade-VirtualBox:~/workspace/property-registration/network$  
Installing chaincode on peer0.users.property-registration-network.com.com ...  
+ peer chaincode install -n regnet -v 1.1 -l node -p /opt/gopath/src/github.com/hyperledger/fabric/peer/chaincode/  
+ res=0  
+ set +x  
2020-03-24 11:50:52.613 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc  
2020-03-24 11:50:52.613 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc  
2020-03-24 11:50:52.915 UTC [chaincodeCmd] install -> INFO 003 Installed remotely response:<status:200 payload:"OK" >  
===== Chaincode is installed on peer0.users =====  
  
Instantiating chaincode on channel using peer0.registrar.property-registration-network.com.com ...  
+ peer chaincode instantiate -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -l node -v 1.1 -c '{"Args":["org.property-registration-network.regnet.users:instantiate","org.property-registration-network.regnet.registrar:instantiate"]}' -P "OR ('\\'\\'registrarMSP.member'\\'\\'','\\'\\'usersMSP.member'\\'\\'')"  
2020-03-24 11:50:53.138 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 001 Using default escc  
2020-03-24 11:50:53.139 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default vscc  
+ res=0  
+ set +x  
===== Chaincode is instantiated on peer0.registrar on channel 'registrationchannel' =====  
  
===== All GOOD, Chaincode REGNET Is Now Installed & Instantiated On Registration Network =====  
upgrad@upgrade-VirtualBox:~/workspace/property-registration/network$
```

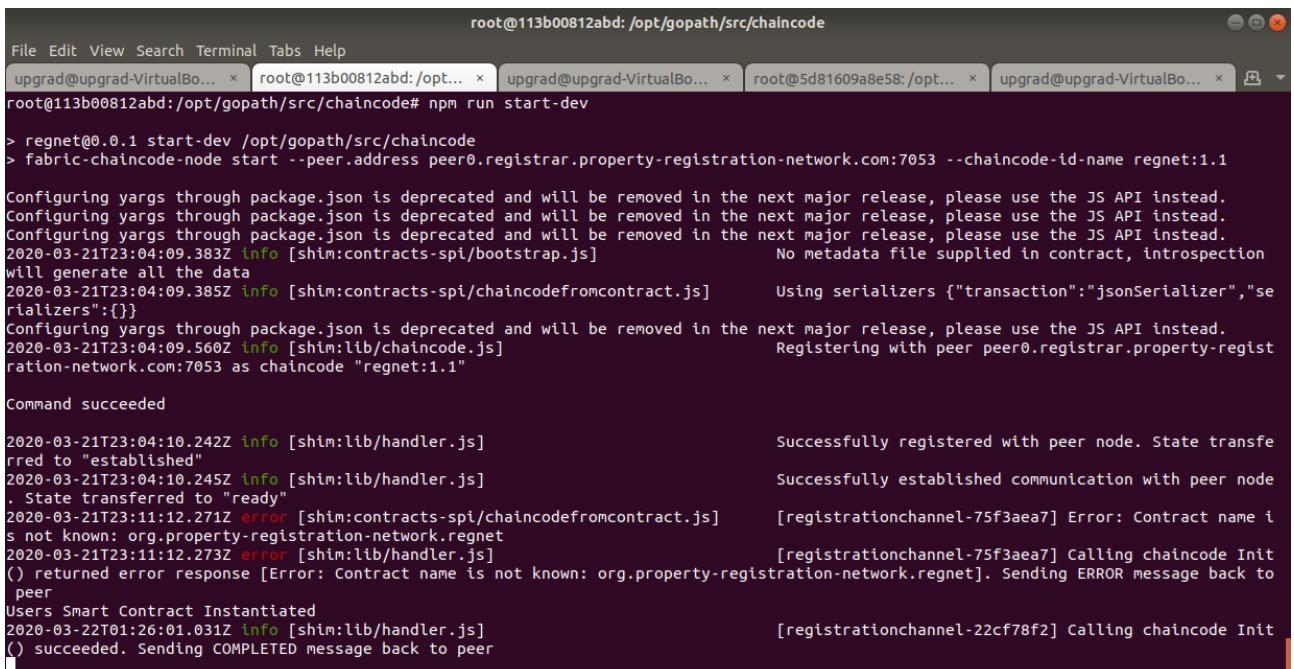
To reconfirm that the chaincode was properly instantiated, open a new tab to view the logs of the peer .

```
docker logs -f peer0.registrar.property-registration-network.com
```



```
upgrad@upgrad-VirtualBox: ~/workspace/property-registration/network
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBo... x root@113b00812abd:/opt... x upgrad@upgrad-VirtualBo... x root@5d81609a8e58:/opt... x upgrad@upgrad-VirtualBo... x
/github.com/hyperledger/fabric/protos/peer..Endorser_ProcessProposal_Handler
/github.com/hyperledger/fabric/protos/peer/peer.pb.go:171
github.com/hyperledger/fabric/vendor/google.golang.org/grpc.(*Server).processUnaryRPC
/github.com/hyperledger/fabric/vendor/google.golang.org/grpc/server.go:982
github.com/hyperledger/fabric/vendor/google.golang.org/grpc.(*Server).handleStream
/github.com/hyperledger/fabric/vendor/google.golang.org/grpc/server.go:1208
github.com/hyperledger/fabric/vendor/google.golang.org/grpc.(*Server).serveStreams.func1.1
/github.com/hyperledger/fabric/vendor/google.golang.org/grpc/server.go:686
runtime.goexit
/opt/go/src/runtime/asm_amd64.s:1333
2020-03-22 23:11:12.275 UTC [comm.grpc.server] 1 -> INFO 069 unary call completed grpc.service=protos.Endorser grpc.method=ProcessProposal
sal grpc.peer_address=172.18.0.11:58110 grpc.code=OK grpc.call_duration=480.020096ms
2020-03-22 00:55:07.200 UTC [endorser] callChaincode -> INFO 06a [[0xa54b54]] Entry chaincode: name:"lscc"
2020-03-22 00:55:07.200 UTC [endorser] callChaincode -> INFO 06b [[0xa54b54]] Exit chaincode: name:"lscc" (34ms)
2020-03-22 00:55:07.252 UTC [endorser] ProcessProposal -> ERROR 06c [[0xa54b54]] simulateProposal() resulted in chaincode name:"lscc" response status 500 for txid: 04a5b54dd04dd58a964eef1458fa6181bc6871e696104c8fc458462d298fc31
2020-03-22 00:55:07.252 UTC [comm.grpc.server] 1 -> INFO 06d unary call completed grpc.service=protos.Endorser grpc.method=ProcessProposal
sal grpc.peer_address=172.18.0.11:58188 grpc.code=OK grpc.call_duration=95.962501ms
2020-03-22 01:25:59.903 UTC [endorser] callChaincode -> INFO 06e [registrationchannel][22cf78f2] Entry chaincode: name:"lscc"
2020-03-22 01:26:01.032 UTC [endorser] callChaincode -> INFO 06f [registrationchannel][22cf78f2] Exit chaincode: name:"lscc" (1128ms)
2020-03-22 01:26:01.256 UTC [comm.grpc.server] 1 -> INFO 070 unary call completed grpc.service=protos.Endorser grpc.method=ProcessProposal
sal grpc.peer_address=172.18.0.11:58210 grpc.code=OK grpc.call_duration=1.35385283s
2020-03-22 01:26:04.981 UTC [gossip.privdata] StoreBlock -> INFO 071 [registrationchannel] Received block [3] from buffer
2020-03-22 01:26:05.334 UTC [committer.txvalidator] Validate -> INFO 072 [registrationchannel] Validated block [3] in 193ms
2020-03-22 01:26:05.557 UTC [cceventmgmt] HandleStateUpdates -> INFO 073 Channel [registrationchannel]: Handling deploy or update of chaincode [regnet]
2020-03-22 01:26:06.947 UTC [kvledger] CommitWithPvtData -> INFO 074 [registrationchannel] Committed block [3] with 1 transaction(s) in 1540ms (state_validation=204ms block_and_pvtdata_commit=800ms state_commit=210ms) commitHash=[0d3ba629f65837300330848580f5e2f4195d49fe471d36e426c2ed6df0e3643d]
```

The same can be confirmed from the tab where chaincode container was started. In the tab of the chaincode container, the output message “Users smart contract instantiated” will be displayed if the instantiate command is successfully executed.



```
root@113b00812abd:/opt/gopath/src/chaincode
File Edit View Search Terminal Tabs Help
upgrad@upgrad-VirtualBo... x root@113b00812abd:/opt... x upgrad@upgrad-VirtualBo... x root@5d81609a8e58:/opt... x upgrad@upgrad-VirtualBo... x
root@113b00812abd:/opt/gopath/src/chaincode# npm run start-dev
> regnet@0.0.1 start-dev /opt/gopath/src/chaincode
> fabric-chaincode-node start --peer.address peer0.registrar.property-registration-network.com:7053 --chaincode-id-name regnet:1.1
Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
2020-03-21T23:04:09.383Z info [shim:contracts-spi/bootstrap.js] No metadata file supplied in contract, introspection
will generate all the data
2020-03-21T23:04:09.385Z info [shim:contracts-spi/chaincodefromcontract.js] Using serializers {"transaction":"jsonSerializer","serializers":{}}
Configuring yargs through package.json is deprecated and will be removed in the next major release, please use the JS API instead.
2020-03-21T23:04:09.560Z info [shim:lib/chaincode.js] Registering with peer peer0.registrar.property-registration-network.com:7053 as chaincode "regnet:1.1"
Command succeeded
2020-03-21T23:04:10.242Z info [shim:lib/handler.js] Successfully registered with peer node. State transferred to "established"
2020-03-21T23:04:10.245Z info [shim:lib/handler.js] Successfully established communication with peer node
. State transferred to "ready"
2020-03-21T23:11:12.271Z error [shim:contracts-spi/chaincodefromcontract.js] [registrationchannel-75f3aea7] Error: Contract name is not known: org.property-registration-network.regnet
2020-03-21T23:11:12.273Z error [shim:lib/handler.js] [registrationchannel-75f3aea7] Calling chaincode Init()
() returned error response [Error: Contract name is not known: org.property-registration-network.regnet]. Sending ERROR message back to peer
Users Smart Contract Instantiated
2020-03-22T01:26:01.031Z info [shim:lib/handler.js] [registrationchannel-22cf78f2] Calling chaincode Init()
() succeeded. Sending COMPLETED message back to peer
```

SEGMENT2: CHAINCODE DEVELOPMENT

3. Introduction:

The chaincode has two smart contracts a.Users Contract b. Registrar Contract

4. List of Functions:

Below are the list of functions in the smartcontracts to be invoked and tested.

S.NO	Name of the Function(Transaction)	Belongs to SmartContract
1	requestNewUser	Users Contract
2	approveNewUser	Registrar Contract
3	rechargeAccount	Users Contract
4	viewUser	Users Contract, Registrar Contract
5	propertyRegistrationRequest	Users Contract
6	approvePropertyRegistration	Registrar Contract
7	viewProperty	Users Contract, Registrar Contract
8	updateProperty	Users Contract
9	purchaseProperty	Users Contract

Note1: For invoking the functions present in the Users smart contract :

In the terminal tab of chaincode container type the command `npm run start-dev2`

Invoke all the functions related to Users smart contract in new tab of the terminal by SSH into the peer0 container of Users Organisation

`docker exec -it peer0.users.property-registration-network.com /bin/bash`

Note2:For invoking the functions present in the Registrar smart contract :

In the terminal tab of chaincode container , stop the node script by Cntrl+C and type the command `npm run start-dev`

Invoke all the functions related to Registrar smart contract in new tab of the terminal by SSH into the peer0 container of Registrar Organisation

`docker exec -it peer0.registrar.property-registration-network.com /bin/bash`

I. requestNewUser:

Initiator:User

step1: In the terminal tab of chaincode container type the command `npm run start-dev2`

step2: In new tab of the terminal

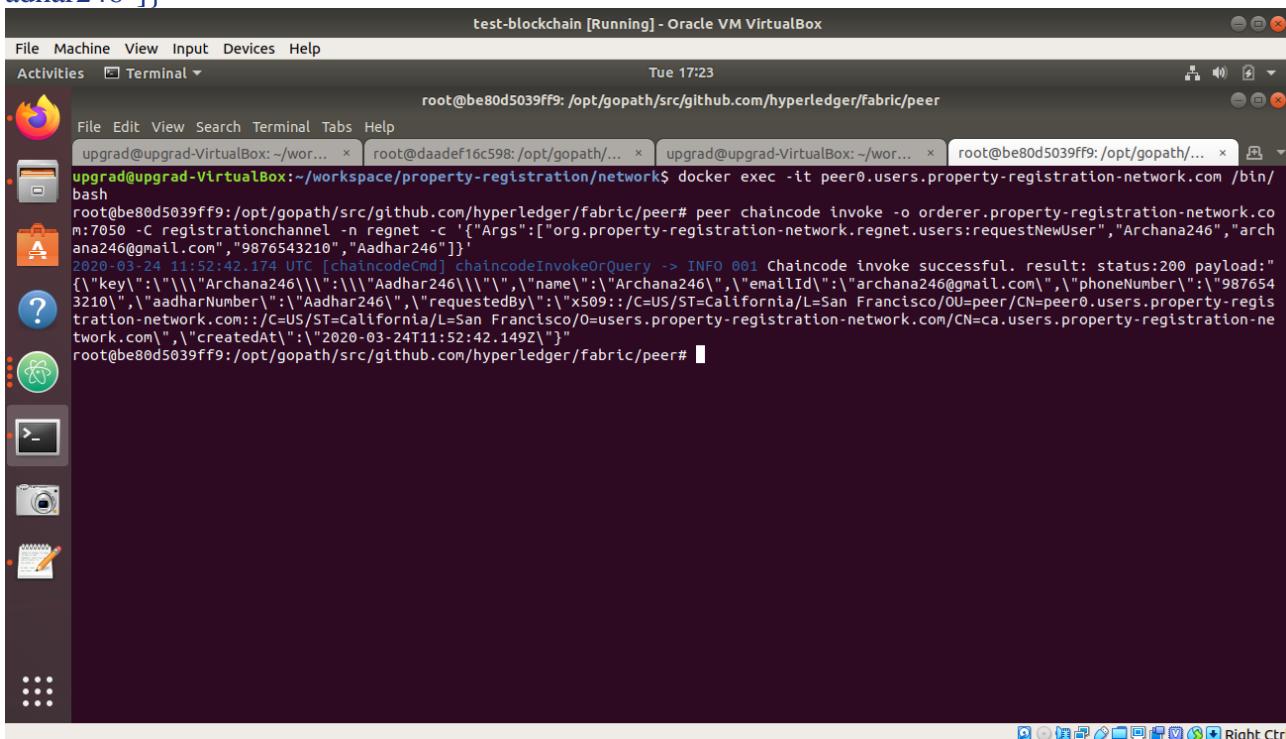
SSH into the peer0 container of Users Organisation

`docker exec -it peer0.users.property-registration-network.com /bin/bash`

step3: Invoke the function

UserName	RoleAssumed	Remarks
Archana246	Seller	ChaincodeInvoke Successful
Buyer1379	Buyer	ChaincodeInvoke Successful
Validation	1.If the user is trying to raise the request again: an error message is prompted 2.If the user is already approved by registrar and exists on the ledger, but trying to raise the request again: an error message is prompted	Successfull messages are prompted The second validation can be checked only after approved by the registrar; hence it is skipped here.

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:requestNewUser","Archana246","archana246@gmail.com","9876543210","Aadhar246"]}'
```



```
test-blockchain [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal Tue 17:23
root@be80d5039ff9:/opt/gopath/src/github.com/hyperledger/fabric/peer
upgrad@upgrad-VirtualBox:~/workspace/property-registration/network$ docker exec -it peer0.users.property-registration-network.com /bin/bash
root@be80d5039ff9:/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.users:requestNewUser","Archana246","archana246@gmail.com","9876543210","Aadhar246"]}'
2020-03-24 11:52:42.174 UTC [chaincodeCmd] chaincodeInvokeOrQuery > INFO 001 Chaincode invoke successful. result: status:200 payload:"{"key":"\\\\\"Archana246\\\\\\\"\\\\\\\"Aadhar246\\\\\\\"\\\\\\\", \"name\":\"Archana246\", \"emailId\":\"archana246@gmail.com\", \"phoneNumber\":\"9876543210\", \"aadharNumber\":\"Aadhar246\", \"requestedBy\":\"x509::C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.users.property-registration-network.com::/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.users.property-registration-network.com/CN=ca.users.property-registration-network.com\", \"createdAt\":\"2020-03-24T11:52:42.149Z\"}"
root@be80d5039ff9:/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.users:requestNewUser","Buyer1379","buyer1379@gmail.com","0123456798","Aadhar1379"]}'
```

```
root@be80d5039ff9:/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.users:requestNewUser","Buyer1379","buyer1379@gmail.com","0123456798","Aadhar1379"]}'  
2020-03-26 19:48:19.886 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload: {"key": "\\"Buyer1379\\\"", ":"Aadhar1379\\\"", "name": "Buyer1379", "emailId": "buyer1379@gmail.com", "phoneNumber": "0123456798", "aadharNumber": "Aadhar1379", "requestedBy": "x509::/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.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": "2020-03-26T19:48:19.851Z"}'
```

If an user is trying to raise the request again an error “userRequest already Exists” is thrown

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:requestNewUser","Buyer1379","buyer1379@gmail.com","0123456798","Aadhar1379"]}'
```

```
root@be80d5039ff9:/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.users:requestNewUser","Buyer1379","buyer1379@gmail.com","0123456798","Aadhar1379"]}'  
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: userRequest already exists"
```

II. approveNewUser:

Initiator: Registrar

step1: In the terminal tab of chaincode container , Stop the node script by using cntrl+c, then type the command *npm run start-dev*

step2: In new tab of the terminal

SSH into the peer0 container of Registrar Organisation

docker exec -it peer0.registrar.property-registration-network.com /bin/bash

step3: Invoke the function

UserName	RoleAssumed	Remarks
Archana246	Seller	ChaincodeInvoke Successful
Buyer1379	Buyer	ChaincodeInvoke Successful
Validation	1.If the userRequest not found: an error message is prompted 2.If the user is already approved : an error message is prompted	Successfull messages are prompted

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c'{"Args":["org.property-registration-network.regnet.registrar:approveNewUser","Archana246","Aadhar246"]}'
```

```
test-blockchain [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal
File Edit View Search Terminal Help
Tue 17:42
root@2c410f0004c0:/opt/gopath/src/github.com/hyperledger/fabric/peer
root@daaef16c98:/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.registrar:approveNewUser","Archana246","Aadhar246"]}'
root@2c410f0004c0:/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.registrar:approveNewUser","Archana246","Aadhar246"]}' | jq .
{
  "status": 200,
  "payload": {
    "key": "\\"Archana246\\\" : \\"Aadhar246\\\", \"name\": \"Archana246\", \"emailId\": \"archana246@gmail.com\", \"phoneNumber\": \"9876543210\", \"aadharNumber\": \"Aadhar246\", \"approvedBy\": \"x509::C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.registrar.property-registration-network.com\", \"createdAt\": \"2020-03-24T11:52:42.149Z\", \"upgradCoins\": 0, \"updatedAt\": \"2020-03-24T11:58:20.198Z\""
  }
}
root@2c410f0004c0:/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.registrar:approveNewUser","Buyer1379","Aadhar1379"]}'
```

```
root@2c410f0004c0:/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.registrar:approveNewUser","Buyer1379","Aadhar1379"]}' | jq .
{
  "status": 200,
  "payload": {
    "key": "\\"Buyer1379\\\" : \\"Aadhar1379\\\", \"name\": \"Buyer1379\", \"emailId\": \"buyer1379@gmail.com\", \"phoneNumber\": \"0123456798\", \"aadharNumber\": \"Aadhar1379\", \"approvedBy\": \"x509::C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.registrar.property-registration-network.com::C=US/ST=California/L=San Francisco/0=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\", \"createdAt\": \"2020-03-26T19:48:19.851Z\", \"upgradCoins\": 0, \"updatedAt\": \"2020-03-26T19:55:52.898Z\""
  }
}
```

If the user request is already approved an error “user already approved” is thrown

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c'{"Args":["org.property-registration-network.regnet.registrar:approveNewUser","Buyer1379","Aadhar1379"]}'
```

```
root@2c410f0004c0:/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.registrar:approveNewUser","Buyer1379","Aadhar1379"]}' | jq .
{
  "status": 500,
  "message": "transaction returned with failure: Error: User already Approved"
}
```

If the user request is not found an error “userRequest doesnt exist” is thrown

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c'{"Args":["org.property-registration-network.regnet.registrar:approveNewUser","Buyer137957","Aadhar137957"]}'
```

```
root@2c410f0004c0:/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.registrar:approveNewUser","Buyer137957","Aadhar137957"]}' | jq .
{
  "status": 500,
  "message": "transaction returned with failure: Error: userRequest doesnt Exist"
}
```

III. viewUser:

Initiator: Registrar		
Initiator:User		
UserName	Remarks	
<i>viewUser: in Registrar contract</i>	ChaincodeInvoke Successful	<p><i>step1: In the peer0 container of Registrar Organisation tab of the terminal ,</i></p> <p><i>step2: Invoke the function</i></p>
<i>viewUser: in User contract</i>	ChaincodeInvoke Successful	<p><i>step1: In the terminal tab of chaincode container , Stop the node script by using cntrl+c, then type the command npm run start-dev2</i></p> <p><i>step2: In the peer0 container of Users Organisation tab of the terminal ,</i></p> <p><i>step3: Invoke the function</i></p>

viewUser: in registrar contract

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:viewUser","Archana246","Aadhar246"]}'
```

```
root@2c410f0004c0:/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.registrar:viewUser","Archana246","Aadhar246"]}'
```

```
2020-03-24 12:17:04.357 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{"key":"\\\\"Archana246\\\\"\\\\"Aadhar246\\\\"\\\\"", "name": "Archana246", "emailId": "archana246@gmail.com", "phoneNumber": "9876543210", "aadharNumber": "Aadhar246", "approvedBy": "x509::/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.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", "createdAt": "2020-03-24T11:52:42.149Z", "upgradCoins": 0, "updatedAt": "2020-03-24T11:58:20.198Z"}"
```

```
root@2c410f0004c0:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

viewUser: in users contract

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:viewUser","Archana246","Aadhar246"]}'
```

```
root@be80d5039ff9:/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.users:viewUser","Archana246","Aadhar246"]}'
```

```
2020-03-24 12:32:56.776 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"{"key":"\\\\"Archana246\\\\"\\\\"Aadhar246\\\\"\\\\"", "name": "Archana246", "emailId": "archana246@gmail.com", "phoneNumber": "9876543210", "aadharNumber": "Aadhar246", "approvedBy": "x509::/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.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", "createdAt": "2020-03-24T11:52:42.149Z", "upgradCoins": 0, "updatedAt": "2020-03-24T11:58:20.198Z"}"
```

```
root@be80d5039ff9:/opt/gopath/src/github.com/hyperledger/fabric/peer#
```

IV. rechargeAccount:

Initiator: User		
step1: In the peer0 container of Users Organisation tab of the terminal ,		
step2: Invoke the function		
UserName	RoleAssumed	Remarks
Archana246	Seller	Recharged the account with upg500. ChaincodeInvoke Successful
Buyer1379	Buyer	Recharged the account twice with upg1000. ChaincodeInvoke Successful
Validation	1.If the user is not found: an error message is prompted 2.If an invalid bank TransactionId is entered: an error message is prompted	Successful messages are prompted

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:rechargeAccount","Archana246","Aadhar246","upg500"]}'
```

```
[root@be80d5039ff9:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.co  
n:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:rechargeAccount","Archana246","Aad  
har246","upg500"]}'  
2020-03-25 16:08:31.352 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:  
{"key": "\\"Archana246\\\" : \\"Aadhar246\\\", \"name\": \"Archana246\", \"emailId\": \"archana246@gmail.com\", \"phoneNumber\": \"987654  
3210\", \"aadharNumber\": \"Aadhar246\", \"approvedBy\": \"x509::C=US/ST=California/L=San Francisco/O=peer/CN=peer0.registrar.property-re  
gistration-network.com::C=US/ST=California/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-regi  
stration-network.com\", \"createdAt\": \"2020-03-24T11:52:42.149Z\", \"upgradCoins\":500, \"updatedAt\": \"2020-03-25T16:08:31.319Z\"]"
```

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:rechargeAccount","Buyer1379","Aadhar1379","upg1000"]}'
```

```
root@be80d5039ff9:/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.users:rechargeAccount","Buyer1379","Aadhar1379","upgr1000"]}'  
2020-03-26 20:38:25.373 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload: "(\\"key\\":\"\\\\\\\"Buyer1379\\\\\\\":\\\\\\\"Aadhar1379\\\\\\\", \"name\\":\"Buyer1379\", \"emailId\\\":\"buyer1379@gmail.com\", \"phoneNumber\\\":\"0123456798\", \"aadharNumber\\\":\"Aadhar1379\", \"approvedBy\\\":\"x509::C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.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\", \"createdAt\\\":\"2020-03-26T19:48:19.851Z\", \"upgradCoins\\\":1000, \"updatedAt\\\":\"2020-03-26T20:38:25.298Z\"}"
```

recharging again with `upg1000`, now the `upgradCoins` should get updated to 2000

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:rechargeAccount","Buyer1379","Aadhar1379","upg1000"]}'
```

```
root@be80d5039ff9:/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.users:rechargeAccount","Buyer1379","Aadhar1379","upg1000"]}]

2020-03-26 20:38:36.777 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload: "[{\\"key\\": \"\\\\\"Buyer1379\\\\\":\\\\\"Aadhar1379\\\\\", \\"name\\\": \"Buyer1379\", \\"emailId\\\": \"buyer1379@gmail.com\", \\"phoneNumber\\\": \"0123456798\", \\"aadharNumber\\\": \"Aadhar1379\", \\"approvedBy\\\": \"x509:/C=US/ST=California/L=San Francisco/O=peer/CN=peer0.registrar.property-registration-network.com::/C=US/ST=California/L=San Francisco/O=register.property-registration-network.com/CN=ca.registrar.property-registration-network.com\", \\"createdAt\\\": \"2020-03-26T19:48:19.851Z\", \\"upgradcoins\\\": 2000, \\"updatedAt\\\": \"2020-03-26T20:38:36.756Z\"}]"
```

If the user is not found an error “User doesnt exist” is thrown

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:rechargeAccount","ar001","Aadhar0011","upg500"]}'
```

```
root@be80d5039ff9:/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.users:rechargeAccount","ar001","Aadhar0011","upg500"]}'  
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: User doesnt exist"
```

If the user enters a non-valid bankTransactionId an error “Invalid BankTransactionid” is thrown

Note : validBankTransactionIds [upg100, upg500, upg1000]

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:rechargeAccount","Buyer1379","Aadhar1379","upg800"]}'
```

```
root@be80d5039ff9:/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.users:rechargeAccount","Buyer1379","Aadhar1379","upg800"]}'  
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Invalid BankTansactio  
nId"
```

V. propertyRegistrationRequest:

Initiator: User

step1:In the peer0 container of Users Organisation tab of the terminal ,

step2: Invoke the function

Note: As per assignment specification requirement, “status” is one of the input parameter to this function. After assignment walk through session, made clear that the status attribute can be added to property object in the approvePropertyRegistration function.

UserName	RoleAssumed	Remarks
Archana246	Seller	Raised the request for registering the property . ChaincodeInvoke Successful
Validation	1.If the user is trying raise the property registration request again for the same propertyId: an error message is prompted 2.If an unregistered user is trying to raise the property registration request: an error message is prompted	Successfull messages are prompted

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:propertyRegistrationRequest","001","1000","Archana246","Aadhar246"]}'
```

```
root@be80d5039ff9:/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.users:propertyRegistrationRequest","001","1000","Archana246","Aadhar246"]}'  
2020-03-25 18:32:43.573 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload: "[{"key": "\\"001\\\"", "propertyId": "\\001", "price": "\\1000", "owner": "\\\"Archana246\\\"\\\"Aadhar246\\\"", "requestedBy": "\\\"x509::/C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.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\": \"2020-03-25T18:32:43.510Z\\\""}]"
```

If the user is trying to raise the property registration request again for the same propertyId then an error “PropertyRequest already Exists” is thrown

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:propertyRegistrationRequest","001","1000","Archana246","Aadhar246"]}'  
root@be80d5039ff9:/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.users:propertyRegistrationRequest","001","1000","Archana246","Aadhar246"]}'  
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: PropertyRequest already Exists"
```

If the unregistered user is trying to raise the property registration request an error “user doesnt exist” is thrown

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:propertyRegistrationRequest","091","2000","Arch1","Aadhar2"]}'  
root@be80d5039ff9:/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.users:propertyRegistrationRequest","091","2000","Arch1","Aadhar2"]}'  
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: User doesnt exist"
```

VI. approvePropertyRegistration:

Initiator: Registrar

step1: In the terminal tab of chaincode container , Stop the node script by using cntrl+c, then type the command `npm run start-dev`

step2:In the peer0 container of Registrar Organisation tab of the terminal ,

step3: Invoke the function

UserName	RoleAssumed	Remarks
Archana246	Seller	ChaincodeInvoke Successful
Validation	1.If the property request is not found: an error message is prompted 2.If the property is already approved : an error message is prompted	Successfull messages are prompted

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

```
root@2c410f0004c0:/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.registrar:approvePropertyRegistration", "001"] }'  
2020-03-26 14:27:41.203 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload: "[{"key":"\"\\\"001\\\"", "propertyId":"\"001\", \"price\":\"1000\", \"owner\":\"\\\"Archana246\\\"\\\"\\\"Aadhar246\\\"\\\", \"status\":\"\\\"registered\\\"", \"approvedBy\":\"\\\"x509::C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.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\", \"createdAt\":\"\\\"2020-03-25T18:32:43.510Z\\\"", \"updatedAt\":\"\\\"2020-03-26T14:27:41.188Z\\\""}]"
```

If the propertyRequest is not found an error “PropertyRequest doesnt exist”

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

```
network.regnet.registrar:approvePropertyRegistration","0051"]}'
```

```
root@2c410f0004c0:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.co
m:7050 -C registrationchannel -n regnet -c'{"Args":["org.property-registration-network.regnet.registrar:approvePropertyRegistration","0
051"]}'
```

```
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: PropertyRequest doesn
t exist"
```

If the property is already approved and trying to approve again , then an error “Property already Approved” is thrown

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

```
network.regnet.registrar:approvePropertyRegistration","001"]}'
```

```
root@2c410f0004c0:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.co
m:7050 -C registrationchannel -n regnet -c'{"Args":["org.property-registration-network.regnet.registrar:approvePropertyRegistration","0
01"]}'
```

```
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Property already Appr
oved"
```

VII. viewProperty:

Initiator: Registrar

Initiator:User

UserName	Remarks	
<i>viewProperty: in Registrar contract</i>	ChaincodeInvoke Successful	step1: <i>In the peer0 container of Registrar Organisation tab of the terminal ,</i> step2: <i> Invoke the function</i>
<i>viewProperty: in User contract</i>	ChaincodeInvoke Successful	step1: <i>In the terminal tab of chaincode container , Stop the node script by using cntrl+c, then type the command npm run start-dev2</i> step2: <i>In the peer0 container of Users Organisation tab of the terminal ,</i> step3: <i> Invoke the function</i>

viewProperty:Registrar contract

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

```
root@2c410f0004c0:/opt/gopath/src/github.com/hyperledger/fabric/peer# peer chaincode invoke -o orderer.property-registration-network.co
m:7050 -C registrationchannel -n regnet -c'{"Args":["org.property-registration-network.regnet.registrar:viewProperty","001"]}'
```

```
2020-03-26 14:41:54.065 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:"
```

```
{\"key\":\"\\\"001\\\"\", \"propertyId\":\"001\", \"price\": \"1000\", \"owner\":\"\\\"Archana246\\\"\":\"\\\"Aadhar246\\\"\", \"status\": \"regis
tered\", \"approvedBy\": \"x509::C=US/ST=California/L=San Francisco/OU=peer0.registrar.property-registration-network.com::CN=ca.registr
ar.property-registration-network.com\", \"crea
tedAt\": \"2020-03-25T18:32:43.510Z\", \"updatedAt\": \"2020-03-26T14:27:41.188Z\""}'
```

viewProperty: in User contract

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

```
root@be80d5039ff9:/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.users:viewProperty","001"]}'  
2020-03-26 14:49:58.306 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload: [{"key": "\\"001\\\"", "propertyId": "\\"001\\\"", "price": "\\"1000\\\"", "owner": "\\"Archana246\\\"", "status": "\\"registered\\\"", "approvedBy": "\\"x509::C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.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\\\"", "createdAt": "\\"2020-03-25T18:32:43.510Z\\\"", "updatedAt": "\\"2020-03-26T14:27:41.188Z\\\""}]
```

VIII. updateProperty:

Initiator: User

step1:*In the peer0 container of Users Organisation tab of the terminal ,*

step2: *Invoke the function*

UserName	RoleAssumed	Remarks
Archana246	Seller	Updating the property attribute from “registered” to “onsale”ChaincodeInvoke Successful
Validation	1.If the user is not found: an error message is prompted 2.If the property is not found: an error message is prompted 3.If the non-owner of the property tries to update the property :an error message is prompted	Successfull messages are prompted

peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:updateProperty","001","Archana246","Aadhar246","onsale"]}'

```
root@be80d5039ff9:/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.users:updateProperty","001","Archana246","Aadhar246","onsale"]}'  
2020-03-26 15:53:40.730 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload: [{"key": "\\"001\\\"", "propertyId": "\\"001\\\"", "price": "\\"1000\\\"", "owner": "\\"Archana246\\\"", "status": "\\"onsale\\\"", "approvedBy": "\\"x509::C=US/ST=California/L=San Francisco/OU=peer/CN=peer0.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\\\"", "createdAt": "\\"2020-03-25T18:32:43.510Z\\\"", "updatedAt": "\\"2020-03-26T15:53:40.716Z\\\""}]
```

If the user is not found then an error “User doesnt exist” is thrown

peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:updateProperty","001","Arc246","Aad246","onsale"]}'

```
root@be80d5039ff9:/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.users:updateProperty","001","Arc246","Aad246","onsale"]}'
```

Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: User doesnt exist"

If the property doesn't exist then error "Property doesn't exist" is thrown

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:updateProperty","0012","Archana246","Aadhar246","onsale"]}'
```

```
root@be80d5039ff9:/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.users:updateProperty","0012","Archana246","Aadhar246","onsale"]}'  
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Property doesn't exist"
```

If the non-owner of the property is trying to update the property then an error "The owner of the property can only update" is thrown

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:updateProperty","001","Buyer1","Aadhar1","onsale"]}'
```

```
root@be80d5039ff9:/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.users:updateProperty","001","Buyer1","Aadhar1","onsale"]}'  
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Not Authorised: The owner of the property can only update"
```

IX. purchaseProperty:

Initiator: User

step1: In the peer0 container of Users Organisation tab of the terminal ,
step2: Invoke the function

UserName	RoleAssumed	Remarks
Buyer1379	Buyer	ChaincodeInvoke Successful
Validation	1.If the user is not found: an error message is prompted 2.If the property is not found: an error message is prompted 3.If the property is not listed for sale:an error message is prompted 4.If the buyer has insufficient fund:an error message is prompted	Successfull messages are prompted

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:purchaseProperty","001","Buyer1379","Aadhar1379"]}'
```

```
root@be80d5039ff9:/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.users:purchaseProperty","001","Buyer1379","Aadhar1379"]}'  
2020-03-26 21:06:36.140 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload: {"key": "\\"001\\\"", "propertyId": "\\"001\\\"", "price": "\\"1000\\\"", "owner": "\\\\"Buyer1379\\\"": \\\\"Aadhar1379\\\"\\\"", "status": "\\"registered\\\"", "approvedBy": "\\"x509::C=US/ST=California/L=San Francisco/OU=peer0.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\\\"", "createdAt": "\\"2020-03-25T18:32:43.510Z\\\"", "updatedAt": "\\"2020-03-26T21:06:36.035Z\\\""}"
```

If the user is not found an error “Buyer Details doesnt exist is thrown”

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:purchaseProperty","700","Buyer1234","Aadhar1234"]}'
```

```
root@be80d5039ff9:/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.users:purchaseProperty","700","Buyer1234"]}'  
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Buyer Details doesnt exist"
```

If the property is not found an error “Property Details doesnt exist” is thrown

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:purchaseProperty","8700","Buyer1379","Aadhar1379"]}'
```

```
root@be80d5039ff9:/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.users:purchaseProperty","8700","Buyer1379"]}'  
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Property Details does not exist"
```

Checking whether the buyer details are updating correctly after purchasing the property

viewUser: check the details of the buyer whose upgradCoins now should be changed to 1000. Originally the buyer has 2000 upgrad coins.

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:viewUser","Buyer1379","Aadhar1379"]}'
```

```
root@be80d5039ff9:/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.users:viewUser","Buyer1379","Aadhar1379"]}'  
2020-03-26 21:20:19.737 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:>{"key":"\\\\"Buyer1379\\\\"\\\\"Aadhar1379\\\\"\\", "name":\\\\"Buyer1379\\\", \"emailId":\\\\"buyer1379@gmail.com\\\", \"phoneNumber\":\\\\"0123456789\\\", \"aadharNumber\":\\\\"Aadhar1379\\\", \"approvedBy\":\\\\"x509:::C=US/ST=California/L=San Francisco/O=peer0.registrar.property-registration-network.com::C=US/ST=California/L=San Francisco/O=peer0.registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\\\", \"createdAt\":\\\\"2020-03-26T19:48:19.851Z\\\", \"upgradCoins\":1000, \"updatedAt\":\\\\"2020-03-26T21:06:36.035Z\\\""}
```

purchaseProperty Additional checks:

Buyer trying to buy the property which is not kept for sale. Then an error “Property not listed for sale is thrown”.

Note : To check this condition created two more users with usernames Buyer1 and seller1.(Forgot to check with previously created users)

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:purchaseProperty","700","Buyer1","Aadhar1"]}'
```

```
root@be80d5039ff9:/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.users:purchaseProperty","700","Buyer1","Aadhar1"]}'  
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Property is not listed for sale"
```

Buyer trying to buy the property who has insufficient funds , then an error “Buyer doesnt have sufficient fund to purchase the property”

Below is the screen shot for reference for viewing the details of the Buyer1 and seller1 details:

The Buyer has 100 upgradcoins in his wallet.

```
root@be80d5039ff9:/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.users:viewUser","Buyer1","Aadhar1"]}'  
2020-03-27 10:07:03.562 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:>{"key":"\\\\"Buyer1\\\\"\\\\"Aadhar1\\\\"\\", "name":\\\\"Buyer1\\\", \"emailId":\\\\"buyer1@gmail.com\\\", \"phoneNumber\":\\\\"0123456789\\\", \"aadharNumber\":\\\\"Aadhar1\\\", \"approvedBy\":\\\\"x509:::C=US/ST=California/L=San Francisco/O=peer0.registrar.property-registration-network.com::C=US/ST=California/L=San Francisco/O=peer0.registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\\\", \"createdAt\":\\\\"2020-03-27T09:27:08.006Z\\\", \"upgradCoins\":100, \"updatedAt\":\\\\"2020-03-27T09:34:07.707Z\\\""}  
root@be80d5039ff9:/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.users:viewUser","seller1","Aadhar1"]}'  
2020-03-27 10:07:24.614 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:>{"key":"\\\\"seller1\\\\"\\\\"Aadhar1\\\\"\\", "name":\\\\"seller1\\\", \"emailId":\\\\"seller1@gmail.com\\\", \"phoneNumber\":\\\\"0132465789\\\", \"aadharNumber\":\\\\"Aadhar1\\\", \"approvedBy\":\\\\"x509:::C=US/ST=California/L=San Francisco/O=peer0.registrar.property-registration-network.com::C=US/ST=California/L=San Francisco/O=peer0.registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\\\", \"createdAt\":\\\\"2020-03-27T09:28:32.245Z\\\", \"upgradCoins\":500, \"updatedAt\":\\\\"2020-03-27T09:33:06.727Z\\\""}
```

The property is listed for the price 500 by the seller

```
root@be80d5039ff9:/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.users:viewProperty","700"]}'  
2020-03-27 10:14:08.695 UTC [chaincodeCmd] chaincodeInvokeOrQuery -> INFO 001 Chaincode invoke successful. result: status:200 payload:  
{"key": "\\"700\\\"", "propertyId": "\\"700\\\"", "price": "\\"500\\\"", "owner": "\\"\\\"\\\"seller1\\\"\\\"", "status": "\\"onsale\\\"",  
"approvedBy": "\\"x509::/C=US/ST=California/L=San Francisco/O=peer/CN=peer0.registrar.property-registration-network.com::C=US/ST=Califor  
nia/L=San Francisco/O=registrar.property-registration-network.com/CN=ca.registrar.property-registration-network.com\\\"", "createdAt": "\\"  
2020-03-27T09:38:56.358Z\\\"", "updatedAt": "\\"2020-03-27T10:05:21.401Z\\\""}  
[1]
```

peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:purchaseProperty","700","Buyer1","Aadhar1"]}'

```
root@be80d5039ff9:/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.users:purchaseProperty","700","Buyer1","Aadhar1"]}'  
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Buyer doesnt have sufficient fund to purchase the property"  
[1]
```

X. validateOrganisation:

Initiator: User

step1: In the peer0 container of Users Organisation tab of the terminal ,

step2: Invoke the function

Validation	Invoking the approveNewUser by Users organization an error message is prompted	Successful messages are prompted
------------	--	----------------------------------

peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.registrar:approveNewUser","Buyer1","Aadhar1"]}'

```
root@be80d5039ff9:/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.registrar:approveNewUser","Buyer1","Aadhar1"]}'  
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Only users from Registrar Organisation can invoke this function call"  
[1]
```

Initiator: Registrar

step1: In the terminal tab of chaincode container , Stop the node script by using cntrl+c, then type the command `npm run start-dev`

step2:In the peer0 container of Registrar Organisation tab of the terminal ,

step3: Invoke the function

Validation	Invoking the requestNewUser by Registrar organization:an error message is prompted	Successful messages are prompted
------------	--	----------------------------------

```
peer chaincode invoke -o orderer.property-registration-network.com:7050 -C registrationchannel -n regnet -c '{"Args":["org.property-registration-network.regnet.users:requestNewUser","Buyer1","buyer1@gmail.com","0123465789","Aadhar1"]}'
```

```
root@2c410f0004c0:/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.users:requestNewUser","Buyer1","buyer1@gmail.com","0123465789","Aadhar1"]}'  
Error: endorsement failure during invoke. response: status:500 message:"transaction returned with failure: Error: Only users from Users Organisation can invoke this function call"
```