



THE CHINESE UNIVERSITY OF HONG KONG, SHENZHEN

MDS 6117

BLOCKCHAIN TECHNOLOGY AND DEVELOPMENT

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## Assignment 3

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# 1 Task

## (a) Install the chaincode

The success screenshot:

```
whale@mds6117:~$ docker exec cliMagnetocorp peer chaincode list --installed
Get installed chaincodes on peer:
Name: papercontract, Version: 0, Path: /opt/gopath/src/github.com/contract, Id: 96b95b32a93259036224ca0fb61c9eada83683508f26d207329753b738b6404f
```

Figure 1: Install the chaincode

## (b) Instantiate the chaincode

The success screenshot (mychannel6)

```
whale@mds6117:~/go/src/github.com/hyperledger/fabric-samples/commercial-paper/organization/magnetocorp/contract$ docker
exec cliMagnetocorp peer chaincode instantiate -n papercontract -v 0 -l node -c '{"Args":["org.papernet.commercialpaper:
instantiate"]}' -C mychannel6 -P "AND ('Org1MSP.member')"
2022-04-30 03:48:53.830 UTC [chaincodeCmd] InitCmdFactory -> INFO 001 Retrieved channel (mychannel6) orderer endpoint: o
rderer.example.com:7050
2022-04-30 03:48:53.833 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 002 Using default escc
2022-04-30 03:48:53.833 UTC [chaincodeCmd] checkChaincodeCmdParams -> INFO 003 Using default vscc
whale@mds6117:~/go/src/github.com/hyperledger/fabric-samples/commercial-paper/organization/magnetocorp/contract$ docker
exec cliMagnetocorp peer chaincode list --instantiated -C mychannel6
Get instantiated chaincodes on channel mychannel6:
Name: papercontract, Version: 0, Path: /opt/gopath/src/github.com/contract, Escc: escc, Vscc: vscc
```

Figure 2: Instantiate the chaincode

## (c) Modify application programs

The screenshot of these modified parameters in issue.js:

```
const issueResponse = await contract.submitTransaction('issue', 'Magnetocorp', '118010141', '2021-03-21', '2022-
03-20', '88888888');
```

Figure 3: Modify application program issue.js

The screenshot of these modified parameters in buy.js:

```
const buyResponse = await contract.submitTransaction('buy', 'Magnetocorp', '118010141', 'Magnetocorp', 'DigiBank', '88888888'
, '2021-03-21');
```

Figure 4: Modify application program buy.js

The nano screenshot of modified parameters in redeem.js:

```
const redeemResponse = await contract.submitTransaction('redeem', 'Magnetocorp', '118010141', 'DigiBank', '2022-03-20');
```

Figure 5: Modify application program redeem.js

**(d) Run application programs**

Issue:

```
whale@mds6117:~/go/src/github.com/hyperledger/fabric-samples/commercial-paper/organization/magnetocorp/application$ node issue.js
Connect to Fabric gateway.
Use network channel: mychannel6.
Use org.papernet.commercialpaper smart contract.
Submit commercial paper issue transaction.
Process issue transaction response.{"class":"org.papernet.commercialpaper","key":"\\Magnetocorp\\":"118010141\\","currentState":1,"issuer":"Magnetocorp","paperNumber":"118010141","issueDateTime":"2021-03-21","maturityDateTime":"2022-03-20","faceValue":"88888888","owner":"Magnetocorp"}
Magnetocorp commercial paper : 118010141 successfully issued for value 88888888
Transaction complete.
Disconnect from Fabric gateway.
Issue program complete.
```

**Figure 6:** issue.js

Buy:

```
whale@mds6117:~/go/src/github.com/hyperledger/fabric-samples/commercial-paper/organization/digibank/application$ node buy.js
Connect to Fabric gateway.
Use network channel: mychannel6.
Use org.papernet.commercialpaper smart contract.
Submit commercial paper buy transaction.
Process buy transaction response.
Magnetocorp commercial paper : 118010141 successfully purchased by DigiBank
Transaction complete.
Disconnect from Fabric gateway.
Buy program complete.
```

**Figure 7:** buy.js

Redeem:

```
whale@mds6117:~/go/src/github.com/hyperledger/fabric-samples/commercial-paper/organization/digibank/application$ node redeem.js
Connect to Fabric gateway.
Use network channel: mychannel6.
Use org.papernet.commercialpaper smart contract.
Submit commercial paper redeem transaction.
Process redeem transaction response.
Magnetocorp commercial paper : 118010141 successfully redeemed with Magnetocorp
Transaction complete.
Disconnect from Fabric gateway.
Redeem program complete.
```

**Figure 8:** redeem.js