

연구 보고서

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1. 연구 계획

- 생성한 체인코드와 동일한 실험 가정을 통해 가지고 실험 값에 따른 결과 테이블 생성 진행

2. 논문 연구 진행

```
2021-08-28T04:03:08.822Z - error: [Transaction]: Error: No valid responses from any peers. Errors:
  peer=peer0.org1.example.com, status=500, message=make sure the chaincode fixed-asset has been suc
  cessfully defined on channel mychannel and try again: chaincode fixed-asset not found
2021-08-28T04:03:10.167Z - error: [Transaction]: Error: No valid responses from any peers. Errors:
  peer=peer0.org2.example.com, status=500, message=make sure the chaincode index-asset has been suc
  cessfully defined on channel mychannel and try again: chaincode index-asset not found
sh: 1: fg: job (null) not created under job control
^Z[1] Terminated python3 expr-start.py session 5d267fe2c324be7c
```

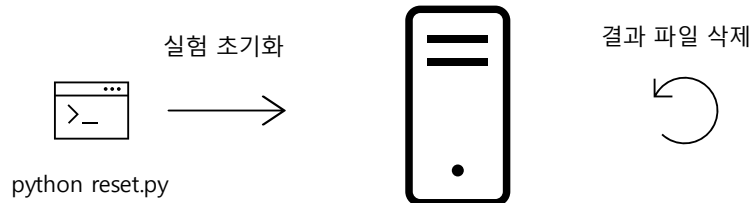
성능측정을 하기 위해 코드를 실행하면 체인코드가 작동하지 않는 것을 확인함.

```
Installing chaincode on peer0.org1...
Using organization 1
+ peer lifecycle chaincode install fixed-asset.tar.gz
+ res=1
Error: chaincode install failed with status: 500 - failed to invoke backing implementation of 'Instal
lChaincode': could not build chaincode: docker build failed: docker image build failed: docker build
failed: Error returned from build: 1 "+ INPUT_DIR=/chaincode/input
+ OUTPUT_DIR=/chaincode/output
+ cp -R /chaincode/input/src/. /chaincode/output
+ cd /chaincode/output
+ '[' -f package-lock.json -o -f npm-shrinkwrap.json ]
+ npm install --production
npm ERR! code EAI_AGAIN
npm ERR! errno EAI_AGAIN
npm ERR! request to https://registry.npmjs.org/fabric-shim failed, reason: getaddrinfo EAI_AGAIN regi
stry.npmjs.org

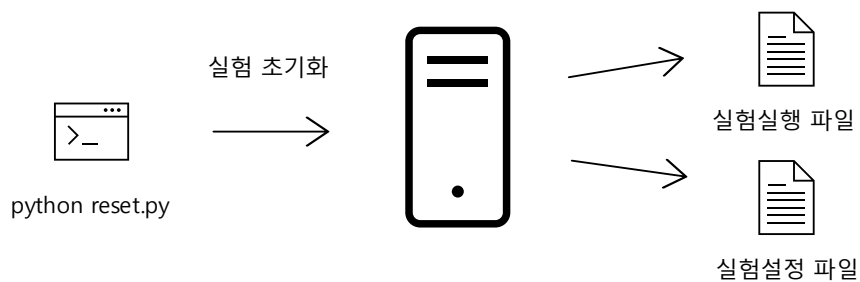
npm ERR! A complete log of this run can be found in:
npm ERR! /root/.npm/_logs/2021-08-28T03_45_47_228Z-debug.log
"
Chaincode installation on peer0.org1 has failed
Deploying chaincode failed
```

체인코드를 도커에 올리는 중 인터넷에 접속이 되지 않으면 진행되지 않는 것을 확인함. 그동안 명령어를 입력하며 진행했던 측정과정을 자동으로 진행할 수 있는 스크립트를 작성하기로 함.

```
h2test@h2test-VirtualBox:~/caliper-benchmarks/benchmarks/api/fabric/expr-make$ python3 reset.py
rm: cannot remove './expr-result/fixed-asset/get/*': No such file or directory
rm: cannot remove './expr-result/fixed-asset/update/*': No such file or directory
rm: cannot remove './expr-result/fixed-asset/delete/*': No such file or directory
rm: cannot remove './expr-result/index-asset/get/*': No such file or directory
rm: cannot remove './expr-result/index-asset/update/*': No such file or directory
rm: cannot remove './expr-result/index-asset/delete/*': No such file or directory
h2test@h2test-VirtualBox:~/caliper-benchmarks/benchmarks/api/fabric/expr-make$
```



파일명	reset.py
매개변수	없음
목표	성능측정 로그가 저장되는 디렉토리를 비우는 명령을 실행함.
<pre>expr-make.py expr-make-sh.py expr-make-yaml.py reset.py test-origin.sh test-origin.yaml h2test@h2test-VirtualBox:~/caliper-benchmarks/benchmarks/api/fabric/expr-make\$ python expr-make.py</pre>	



파일명	expr-make.py
매개변수	없음
목표	test-origin.sh를 기본 틀로 실험을 진행하는 성능측정을 실행하는 쉘 스크립트와 test-origin.yaml을 파일을 가지고 설정파

일을 만드는 일을 실행함.

```
h2test@h2test-VirtualBox:~/caliper-benchmarks/benchmarks/api/fabric/index-asset$ ll -R
```

```
.:
total 28
drwxrwxr-x 7 h2test h2test 4096 8월 26 14:14 ./
drwxr-x-- 29 h2test h2test 4096 8월 27 12:35 ../
drwxrwxr-x 8 h2test h2test 4096 8월 29 13:08 create/
drwxrwxr-x 5 h2test h2test 4096 8월 29 13:09 delete/
drwxrwxr-x 5 h2test h2test 4096 8월 29 13:08 get/
drwxrwxr-x 5 h2test h2test 4096 8월 19 15:27 read/
drwxrwxr-x 5 h2test h2test 4096 8월 29 13:08 update/

./create:
total 32
drwxrwxr-x 8 h2test h2test 4096 8월 29 13:08 ./
drwxrwxr-x 7 h2test h2test 4096 8월 26 14:14 ../
drwxrwxr-x 2 h2test h2test 4096 8월 29 13:08 create-bytesize/
drwxr-x-- 2 h2test h2test 4096 8월 19 15:27 create-public-normal-asset/
drwxr-x-- 2 h2test h2test 4096 8월 19 15:27 create-public-normal-bytesize/
drwxr-x-- 2 h2test h2test 4096 8월 19 15:27 create-public-normal-sendrate/
drwxrwxr-x 2 h2test h2test 4096 8월 29 13:08 create-tps/
drwxrwxr-x 2 h2test h2test 4096 8월 29 13:08 create-txnum/

./create/create-bytesize:
total 192
drwxrwxr-x 2 h2test h2test 4096 8월 29 13:08 ./
drwxrwxr-x 8 h2test h2test 4096 8월 29 13:08 ../
-rwxrwxr-x 1 h2test h2test 1129 8월 29 13:08 create-bytesize-10000.sh*
-rw-rw-r-- 1 h2test h2test 2011 8월 29 13:08 create-bytesize-10000.yaml
-rwxrwxr-x 1 h2test h2test 1127 8월 29 13:08 create-bytesize-1000.sh*
-rw-rw-r-- 1 h2test h2test 2008 8월 29 13:08 create-bytesize-1000.yaml
-rwxrwxr-x 1 h2test h2test 1125 8월 29 13:08 create-bytesize-100.sh*
-rw-rw-r-- 1 h2test h2test 2005 8월 29 13:08 create-bytesize-100.yaml
-rwxrwxr-x 1 h2test h2test 1129 8월 29 13:08 create-bytesize-20000.sh*
-rw-rw-r-- 1 h2test h2test 2011 8월 29 13:08 create-bytesize-20000.yaml
-rwxrwxr-x 1 h2test h2test 1127 8월 29 13:08 create-bytesize-2000.sh*
-rw-rw-r-- 1 h2test h2test 2008 8월 29 13:08 create-bytesize-2000.yaml
-rwxrwxr-x 1 h2test h2test 1125 8월 29 13:08 create-bytesize-200.sh*
-rw-rw-r-- 1 h2test h2test 2005 8월 29 13:08 create-bytesize-200.yaml
-rwxrwxr-x 1 h2test h2test 1129 8월 29 13:08 create-bytesize-30000.sh*
-rw-rw-r-- 1 h2test h2test 2011 8월 29 13:08 create-bytesize-30000.yaml
-rwxrwxr-x 1 h2test h2test 1127 8월 29 13:08 create-bytesize-3000.sh*
-rw-rw-r-- 1 h2test h2test 2008 8월 29 13:08 create-bytesize-3000.yaml
-rwxrwxr-x 1 h2test h2test 1125 8월 29 13:08 create-bytesize-300.sh*
-rw-rw-r-- 1 h2test h2test 2005 8월 29 13:08 create-bytesize-300.yaml
-rwxrwxr-x 1 h2test h2test 1127 8월 29 13:08 create-bytesize-4000.sh*
-rw-rw-r-- 1 h2test h2test 2008 8월 29 13:08 create-bytesize-4000.yaml
-rwxrwxr-x 1 h2test h2test 1125 8월 29 13:08 create-bytesize-400.sh*
-rw-rw-r-- 1 h2test h2test 2005 8월 29 13:08 create-bytesize-400.yaml
```

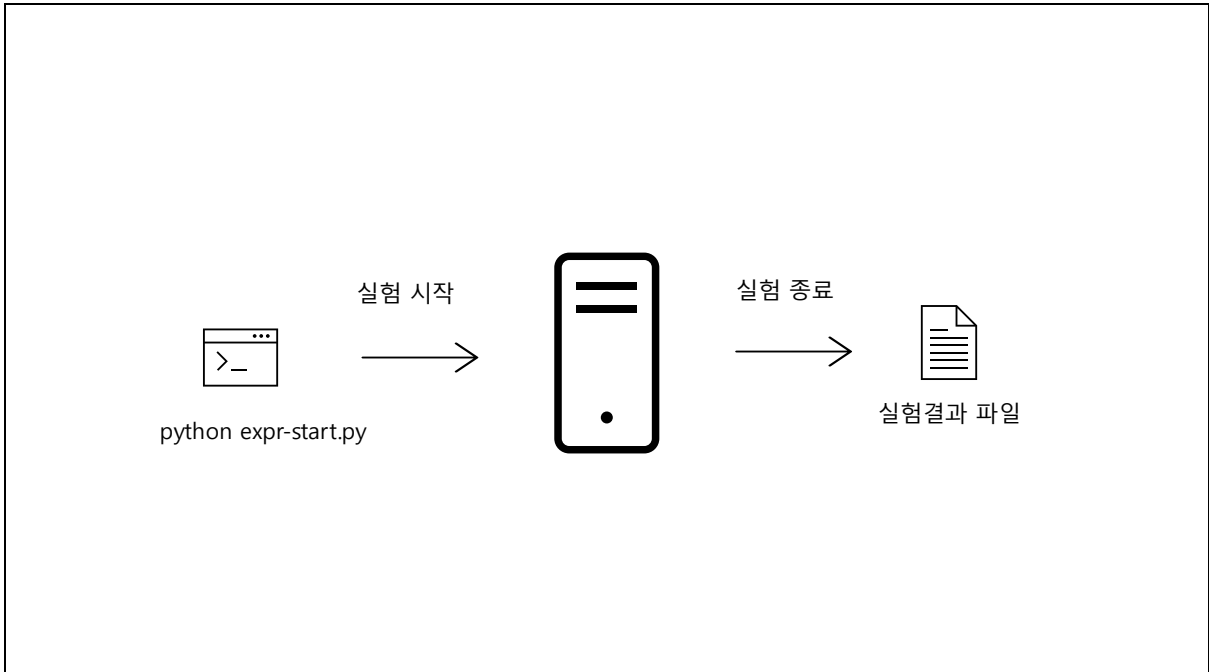
expr-make.py를 실행하면 쉘스크립트 파일과 yaml 설정 파일이 생성됨.

```
h2test@h2test-VirtualBox:~/caliper-benchmarks/benchmarks/api/fabric/expr-prog$ python3 expr-start.py
npm WARN deprecated cloudant-follow@0.18.2: This package is no longer maintained.
npm WARN deprecated cloudant-follow@0.18.2: This package is no longer maintained.
npm WARN winston-daily-rotate-file@4.5.5 requires a peer of winston@^3 but none is installed. You must install peer dependencies yourself.

npm WARN winston-daily-rotate-file@4.5.5 requires a peer of winston@^3 but none is installed. You must install peer dependencies yourself.

sh: 1: fg: job (null) not created under job control
npm WARN deprecated cloudant-follow@0.18.2: This package is no longer maintained.
npm WARN deprecated cloudant-follow@0.18.2: This package is no longer maintained.
npm WARN winston-daily-rotate-file@4.5.5 requires a peer of winston@^3 but none is installed. You must install peer dependencies yourself.

npm WARN winston-daily-rotate-file@4.5.5 requires a peer of winston@^3 but none is installed. You must install peer dependencies yourself.
```



파일명	expr-start.py
매개변수	없음
목표	성능측정을 동시에 실행하는 명령어를 실행함.

▼ expr-result	●
▼ fixed-asset	●
▼ create	●
≡ create-tps-1.txt	U
≡ create-txnum-1.txt	U
▼ delete	●
≡ delete-tps-1.txt	U
≡ delete-txnum-1.txt	U
▼ get	●
≡ get-tps-1.txt	U
≡ get-txnum-1.txt	U
▼ update	●
≡ update-tps-1.txt	U
≡ update-txnum-1.txt	U
▼ index-asset	●
▼ create	●
≡ create-tps-1.txt	U
≡ create-txnum-1.txt	U
▼ delete	●
≡ delete-tps-1.txt	U
≡ delete-txnum-1.txt	U
▼ get	●
≡ get-tps-1.txt	U
≡ get-txnum-1.txt	U
▼ update	●
≡ update-tps-1.txt	U
≡ update-txnum-1.txt	U

expr-start.py를 실행하게 되면 expr-result에 실행한 로그 파일을 저장하게 되고 체인코드명/함수이름/함수이름-변수명-설정한 실험값.txt로 로그파일이 저장됨.
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3. 다음 계획

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| - 논문 초안 작성 |
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