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## Commands to Bring up the Pharma-Network

---

# npm run localnode

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.22000.1880]
(c) Microsoft Corporation. All rights reserved.

C:\Users\s4sha\OneDrive - 123\Documents\UPPGRAD\drugproblem>npm run localnode

> drugs-problem@1.0.0 localnode
> npx hardhat node

You are using a version of Node.js that is not supported by Hardhat, and it may work incorrectly, or not work at all.
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To learn more about which versions of Node.js are supported go to https://hardhat.org/nodejs-versions
Started HTTP and WebSocket JSON-RPC server at http://127.0.0.1:8545/

Accounts
=====

WARNING: These accounts, and their private keys, are publicly known.
Any funds sent to them on Mainnet or any other live network WILL BE LOST.

Account #0: 0xf39Fd6e51aad88F6F4ce6aB8827279cFfFb92266 (10000 ETH)
Private Key: 0xac0974bec39a17e36ba4a6b4d238ff944bacb478cbed5efcae784d7bf4f2ff80

Account #1: 0x70997970C51812dc3A010C7d01b50e0d17dc79C8 (10000 ETH)
Private Key: 0x59c6995e998f97a5a0044966f0945389dc9e86dae88c7a8412f4603b6b78690d

Account #2: 0x3C44CdDdB6a900fa2b585dd299e03d12FA4293BC (10000 ETH)
Private Key: 0x5de4111afa1a4b94908f83103eb1f1706367c2e68ca870fc3fb9a804cdab365a

Account #3: 0x90F79b66eB2c4f870365E785982E1f101E93b906 (10000 ETH)
Private Key: 0x7c852118294e51e653712a81e05800f419141751be58f605c371e15141b007a6

Account #4: 0x15d34AAf54267DB7D7c367839AAf71A00a2C6A65 (10000 ETH)
Private Key: 0x47e179ec197488593b187f80a00eb0da91f1b9d0b13f8733639f19c30a34926a

Account #5: 0x9965507D1a55bC2695C58ba16FB37d819B0A4dc (10000 ETH)
Private Key: 0x8b3a350cf5c34c9194ca85829a2df0ec3153be0318b5e2d3348e872092edffba

Account #6: 0x976EA74026E726554dB657fA54763abd0C3a0aa9 (10000 ETH)
Private Key: 0x92db14e403b83dfe3df233f83dfa3a0d7096f21ca9b0d6d6b8d88b2b4ec1564e

Account #7: 0x14dc79964da2C08b23698B3D3cc7Ca32193d9955 (10000 ETH)
Private Key: 0x4bbb85ce3377467afe5d46f804f221813b2bb87f24d81f60f1fcd7f7cbf4356

Account #8: 0x23618e81E3f5cdf7f54C3d65f7FBc0aBf5B21E8f (10000 ETH)
Private Key: 0xdbda1821b80551c9d65939329250298aa3472ba22f6ea921c0cf5d620ea67b97
```

```

Account #8: 0x23618e81E3f5cdF7f54C3d65f7FBc0aBf5B21E8f (10000 ETH)
Private Key: 0xdbda1821b80551c9d65939329250298aa3472ba22feeaa921c0cf5d620ea67b97

Account #9: 0xa0Ee7A142d267C1f36714E4a8F75612F20a79720 (10000 ETH)
Private Key: 0x2a871d0798f97d79848a013d4936a73bf4cc922c825d33c1cf7073dff6d409c6

Account #10: 0xBcd4042DE499D14e55001CcbB24a551F3b954096 (10000 ETH)
Private Key: 0xf214f2b2cd398c806f84e317254e0f0b801d0643303237d97a22a48e01628897

Account #11: 0x71bE63f3384f5fb98995898A86B02Fb2426c5788 (10000 ETH)
Private Key: 0x701b615bbdfb9de65240bc28bd21bbc0d996645a3dd57e7b12bc2bdf6f192c82

Account #12: 0xFAB80ac9d68B0B445fB7357272Ff202C5651694a (10000 ETH)
Private Key: 0xa267530f49f8280200edf313ee7af6b827f2a8bce2897751d06a843f644967b1

Account #13: 0x1CBd3b2770909D4e10f157cABC84C7264073C9Ec (10000 ETH)
Private Key: 0x47c99abed3324a2707c28afffff1267e45918ec8c3f20b8aa892e8b065d2942dd

Account #14: 0xdF3e18d648C6A983f673Ab319CCaE4f1a57C7097 (10000 ETH)
Private Key: 0xc526ee95bf44d8fc405a158bb884d9d1238d99f0612e9f33d006bb0789009aaa

Account #15: 0xcd3B766CCDd6AE721141F452C550Ca635964ce71 (10000 ETH)
Private Key: 0x8166f546bab6da521a8369cab06c5d2b9e46670292d85c875ee9ec20e84ffb61

Account #16: 0x2546BcD3c84621e976D8185a91A922aE77ECeC30 (10000 ETH)
Private Key: 0xea6c44ac03bff858b476bba40716402b03e41b8e97e276d1baec7c37d42484a0

Account #17: 0xbDA5747bFD65F08deb54cb465eB87D40e51B197E (10000 ETH)
Private Key: 0x689af8efa8c651a91ad287602527f3af2fe9f6501a7ac4b061667b5a93e037fd

Account #18: 0xdD2FD4581271e230360230F9337D5c0430Bf44C0 (10000 ETH)
Private Key: 0xde9be858da4a475276426320d5e9262ecfc3ba460bfac56360bfa6c4c28b4ee0

Account #19: 0x8626f6940E2eb28930eFb4CeF49B2d1F2C9C1199 (10000 ETH)
Private Key: 0xdf57089febbacf7ba0bc227dafbffa9fc08a93fdc68e1e42411a14efcf23656e

WARNING: These accounts, and their private keys, are publicly known.
Any funds sent to them on Mainnet or any other live network WILL BE LOST.

```

---

### *Command to Compile the Smart Contract*

---

# npm run compile

```

C:\Users\s4sha\OneDrive - 123\Documents\UPPGRAD\drugproblem>npm run compile

> drugs-problem@1.0.0 compile
> npx hardhat compile

You are using a version of Node.js that is not supported by Hardhat, and it may work incorrectly, or not work at all.

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Compiled 2 Solidity files successfully

C:\Users\s4sha\OneDrive - 123\Documents\UPPGRAD\drugproblem>

```

### Command to Deploy the Smart Contract

```
# npm run deploy:local
```

```
C:\Users\s4sha\OneDrive - 123\Documents\UPPGRAD\drugproblem>npm run deploy:local
> drugs-problem@1.0.0 deploy:local
> npx hardhat run --network localhost ./deployments/deploy.js

You are using a version of Node.js that is not supported by Hardhat, and it may work incorrectly, or not work at all.
Please, make sure you are using a supported version of Node.js.

To learn more about which versions of Node.js are supported go to https://hardhat.org/nodejs-versions
Deploying contracts with the account: 0xf39Fd6e51aad88F6F4ce6aB8827279cFfFb92266
Account balance: 10000000000000000000000000
Token Address: 0x5FbDB2315678aFecb367f032d93F642f64180aa3

C:\Users\s4sha\OneDrive - 123\Documents\UPPGRAD\drugproblem>
```

```
eth_accounts
eth_chainId (2)
eth_getBalance
eth_accounts
eth_blockNumber
eth_chainId (2)
eth_estimateGas
eth_getBlockByNumber
eth_feeHistory
eth_sendTransaction
  Contract deployment: Drugs
  Contract address: 0x5fbdb2315678afecb367f032d93f642f64180aa3
  Transaction: 0x407103391ae9b5a54feeee6d437c1f5e2abe82ac2671de7171c94c4c867afcb0
  From: 0xf39fd6e51aad88f6f4ce6ab8827279cfff9b92266
  Value: 0 ETH
  Gas used: 4534984 of 4534984
  Block #1: 0x0f4465124d42bb9fd1a484d0026febc36e76d76dbd724b1b2aafdeaadd394ba4

eth_chainId
eth_getTransactionByHash
```

---

*Command to Scale up the local node server*

```
# npm run server
```

```
C:\Users\s4sha\OneDrive - 123\Documents\UPPGRAD\drugproblem>npm run server

> drugs-problem@1.0.0 server
> node ./backend/index.js

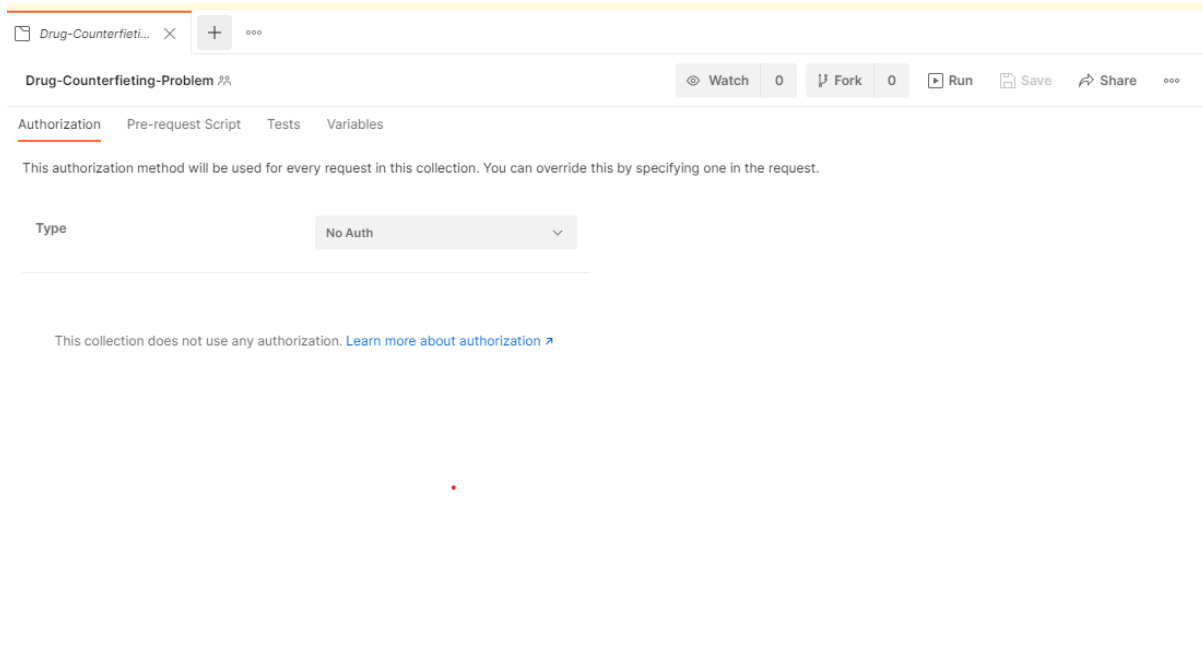
Server running on port 3000
```

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## Testing using Postman

---

1. Launch Postman
2. Import the Collection file from the project folder
3. Select a collection and run them



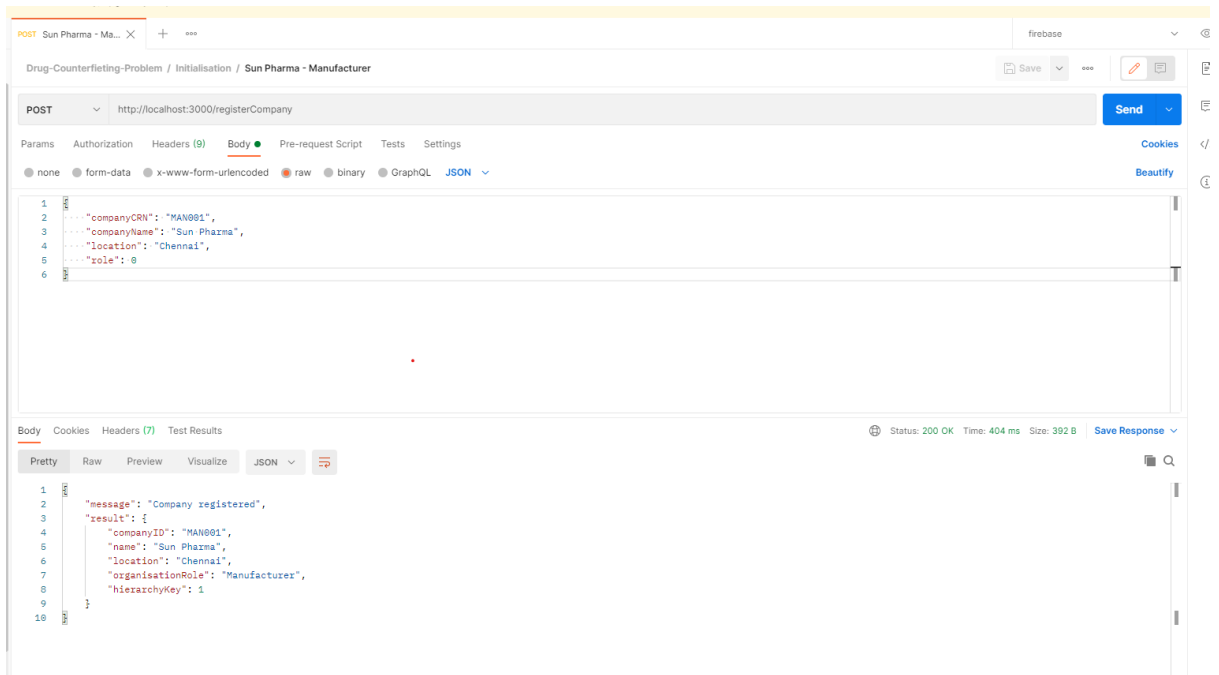
---

## Test Case 1: Initialization

---

1. Create a manufacturer with following details:

companyCRN: MAN001  
companyName: Sun Pharma  
location: Chennai  
role: 0



```

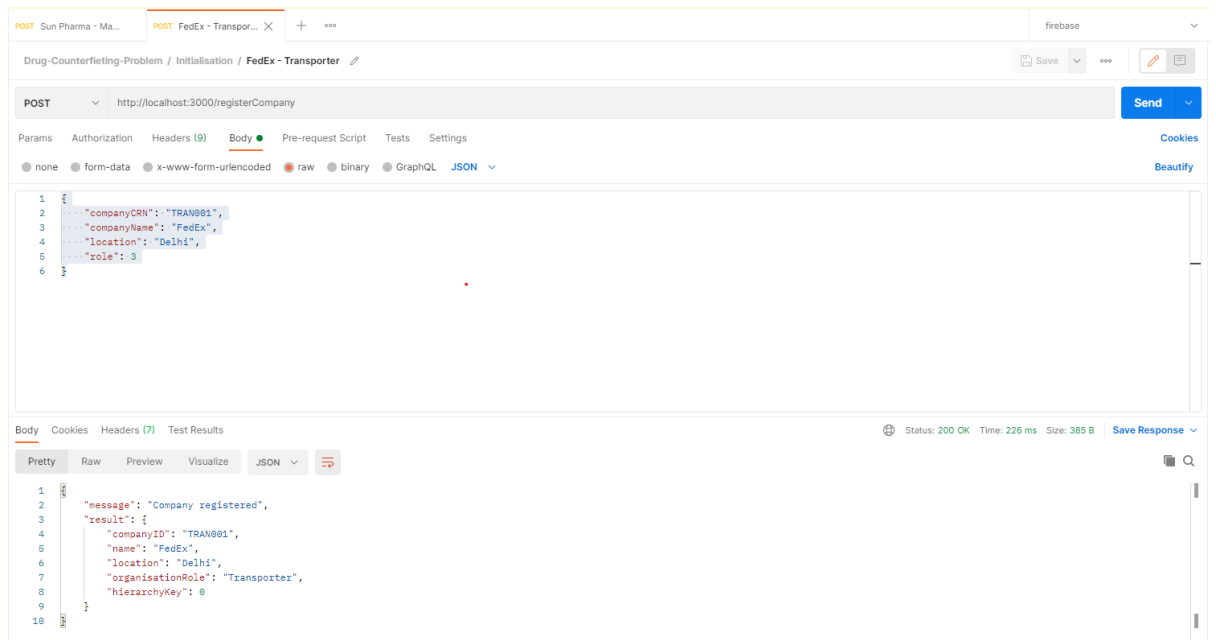
eth_chainId
eth_getTransactionByHash
eth_accounts
eth_estimateGas
eth_getBlockByNumber
eth_gasPrice
eth_sendTransaction
  Contract call:    Drugs#registerCompany
  Transaction:      0x56e35738bca60613d8afafec90286f65dc8296213fa024aea000ce8811a3a501
  From:             0x71be63f3384f5fb98995898a86b02fb2426c5788
  To:               0x5fbdb2315678afecb367f032d93f642f64180aa3
  Value:            0 ETH
  Gas used:         125513 of 125513
  Block #2:         0xf70e20d34e18120e86e3225f51a5a3660a619ae0628e2afc73337009f0f89f42

eth_getTransactionReceipt
eth_accounts
eth_call
  Contract call:    Drugs#getRegisteredCompany
  From:             0xf39fd6e51aad88f6f4ce6ab8827279cfff92266
  To:               0x5fbdb2315678afecb367f032d93f642f64180aa3

```

2. Create Transporter with following details:

companyCRN: TRAN001  
 companyName: FedEx  
 location: Delhi  
 role: 3



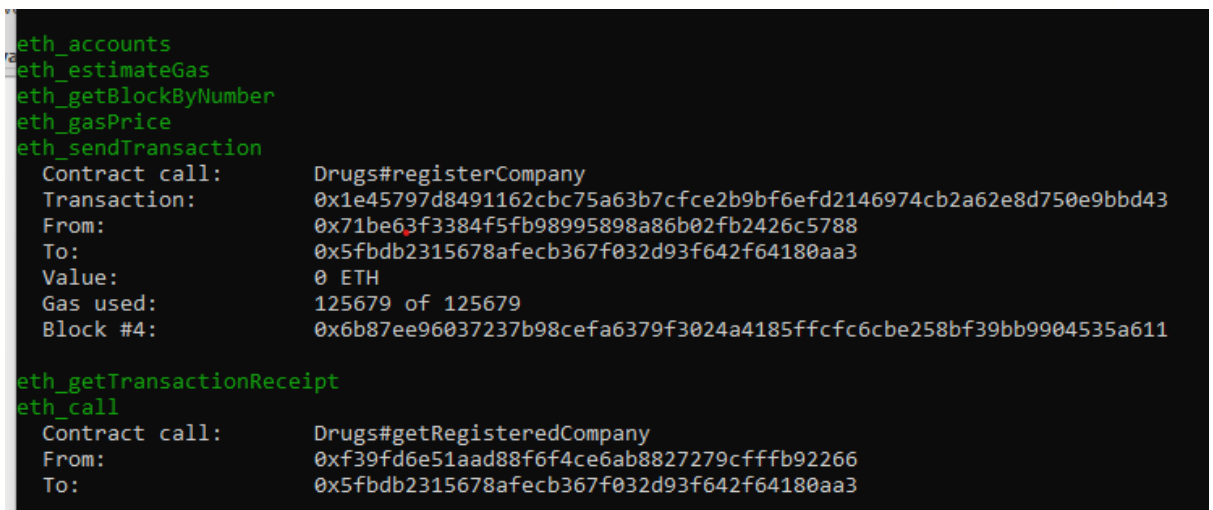
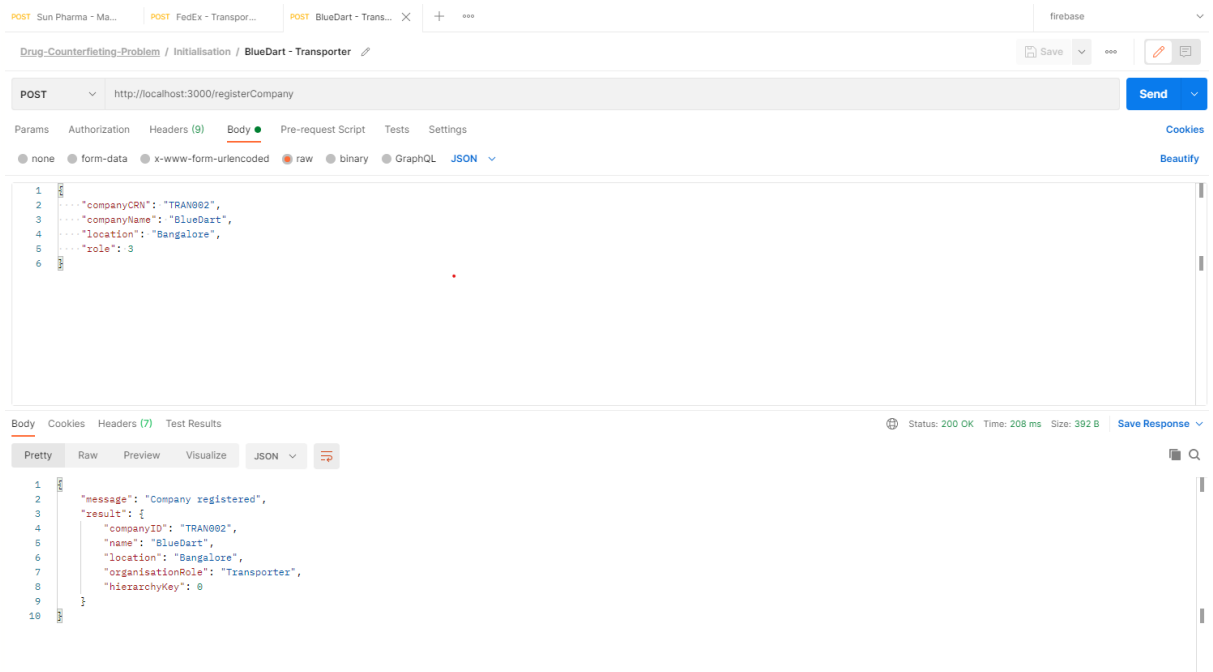
```

eth_accounts
eth_estimateGas
eth_getBlockByNumber
eth_gasPrice
eth_sendTransaction
  Contract call:    Drugs#registerCompany
  Transaction:      0x1cbdf87ac3b681c52c09a7b2a65ce19a8717f8097d2a25056fc776a02e87b439
  From:             0x71be63f3384f5fb98995898a86b02fb2426c5788
  To:               0x5fbdb2315678afecb367f032d93f642f64180aa3
  Value:            0 ETH
  Gas used:         125595 of 125595
  Block #3:         0x516e128d0ee771849f67edbaa9a14c12993e92c665a4ff8f68a728dd7d67b9b6

eth_getTransactionReceipt
eth_call
  Contract call:    Drugs#getRegisteredCompany
  From:             0xf39fd6e51aad88f6f4ce6ab8827279cfff9b2266
  To:               0x5fbdb2315678afecb367f032d93f642f64180aa3

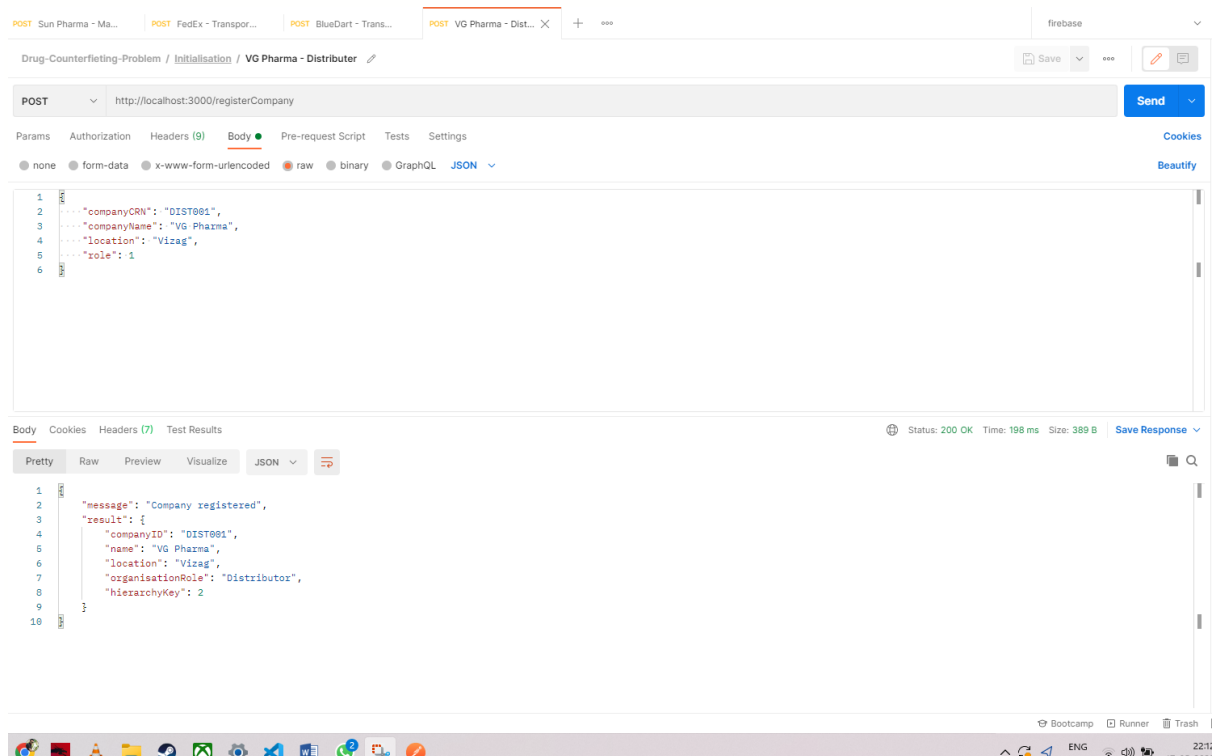
```

3. Create Transporter with following details:  
 companyCRN: TRAN002  
 companyName: BlueDart  
 location: Bangalore  
 role: 3



#### 4. Create Distributor with following details:

companyCRN: DIST001  
 companyName: VG Pharma  
 location: Vizag  
 role: 1



5. Create retailer with the following details:

companyCRN: RET001  
 companyName: Upgrad  
 location: Mumbai  
 role: 2



Drug-Counterfieting-Problem / Initialisation / Upgrad - Retailer

POST http://localhost:3000/registerCompany

Params Authorization Headers (9) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```

1  {
2    "companyCRN": "RET001",
3    "companyName": "Upgrad",
4    "location": "Mumbai",
5    "role": 2
6  }

```

Body Cookies Headers (7) Test Results

Status: 200 OK Time: 198 ms Size: 383 B Save Response

Pretty Raw Preview Visualize JSON

```

1  {
2    "message": "Company registered",
3    "result": {
4      "companyID": "RET001",
5      "name": "Upgrad",
6      "location": "Mumbai",
7      "organisationRole": "Retailer",
8      "hierarchyKey": 3
9    }
10 }

```

```

eth_accounts
eth_estimateGas
eth_getBlockByNumber
eth_gasPrice
eth_sendTransaction
  Contract call:    Drugs#registerCompany
  Transaction:      0x53c090fade0821c36626a752f6cc5494045c197ca5b95c455a80a99746c7ed42
  From:             0x71be63f3384f5fb98995898a86b02fb2426c5788
  To:               0x5fbdb2315678afecb367f032d93f642f64180aa3
  Value:            0 ETH
  Gas used:         125617 of 125617
  Block #6:         0xcc0fa8c8054150249c89008f53cf0c6127ff8bd779cd133befce111d66281706

eth_getTransactionReceipt
eth_call
  Contract call:    Drugs#getRegisteredCompany
  From:             0xf39fd6e51aad88f6f4ce6ab8827279cfff92266
  To:               0x5fbdb2315678afecb367f032d93f642f64180aa3

```

## 6. Create Drug

companyCRN: MAN001  
 drugName: Paracetamol  
 serialNumber: 001  
 mafDate: JAN2020  
 expDate: FEB2021

Drug-Counterfeiting-Problem / Initialisation / Paracetamol - 001

POST http://localhost:3000/addDrug

Params Authorization Headers (9) Body ● Pre-request Script Tests Settings

● none ● form-data ● x-www-form-urlencoded ● raw ● binary ● GraphQL JSON ▾

```
1 {
2   ... "companyCRN": "MAN001",
3   ... "drugName": "Paracetamol",
4   ... "serialNumber": "001",
5   ... "mafDate": "JAN2020",
6   ... "expDate": "FEB2021"
7 }
```

Body Cookies Headers (7) Test Results

Status: 200 OK Time: 374 ms Size: 435 B Save Response ▾

Pretty Raw Preview Visualize JSON ▾

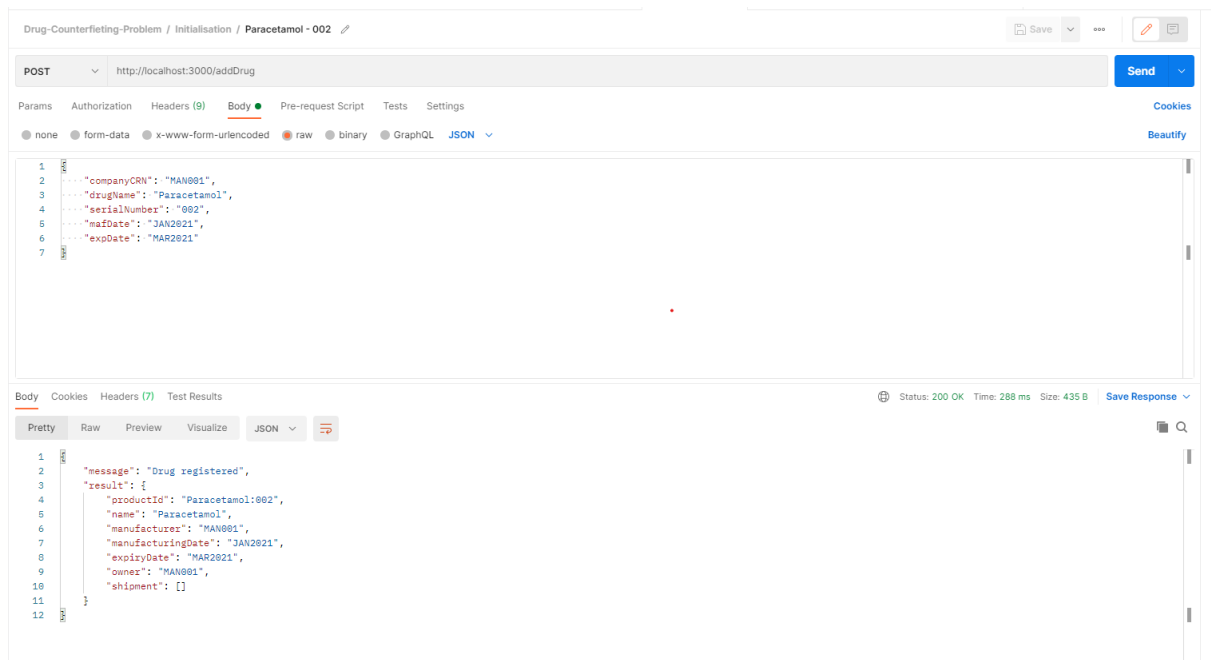
```
1 {
2   "message": "Drug registered",
3   "result": {
4     "productId": "Paracetamol:001",
5     "name": "Paracetamol",
6     "manufacturer": "MAN001",
7     "manufacturingDate": "JAN2020",
8     "expiryDate": "FEB2021",
9     "owner": "MAN001",
10    "shipment": []
11  }
12 }
```

```
eth_accounts
eth_estimateGas
eth_getBlockByNumber
eth_gasPrice
eth_sendTransaction
  Contract call:    Drugs#addDrug
  Transaction:      0xf6c9ac5fdc0ddcdf5b4d6a2c50d3d51736f74472c4ad7ce020d910da09f3ad67
  From:             0x71be63f3384f5fb98995898a86b02fb2426c5788
  To:               0x5fbdb2315678afecb367f032d93f642f64180aa3
  Value:            0 ETH
  Gas used:         220356 of 220356
  Block #:          0x4cc874e98970f71a49cb14ff9f80022843def0b6234515b9ee40f6f6444a367d

eth_getTransactionReceipt
eth_call
  Contract call:    Drugs#getRegisteredDrug
  From:             0xf39fd6e51aad88f6f4ce6ab8827279cfff92266
  To:               0x5fbdb2315678afecb367f032d93f642f64180aa3
```

## 7. Create Drug

companyCRN: MAN001  
drugName: Paracetamol  
serialNumber: 002  
mafDate: JAN2021  
expDate: MAR2021

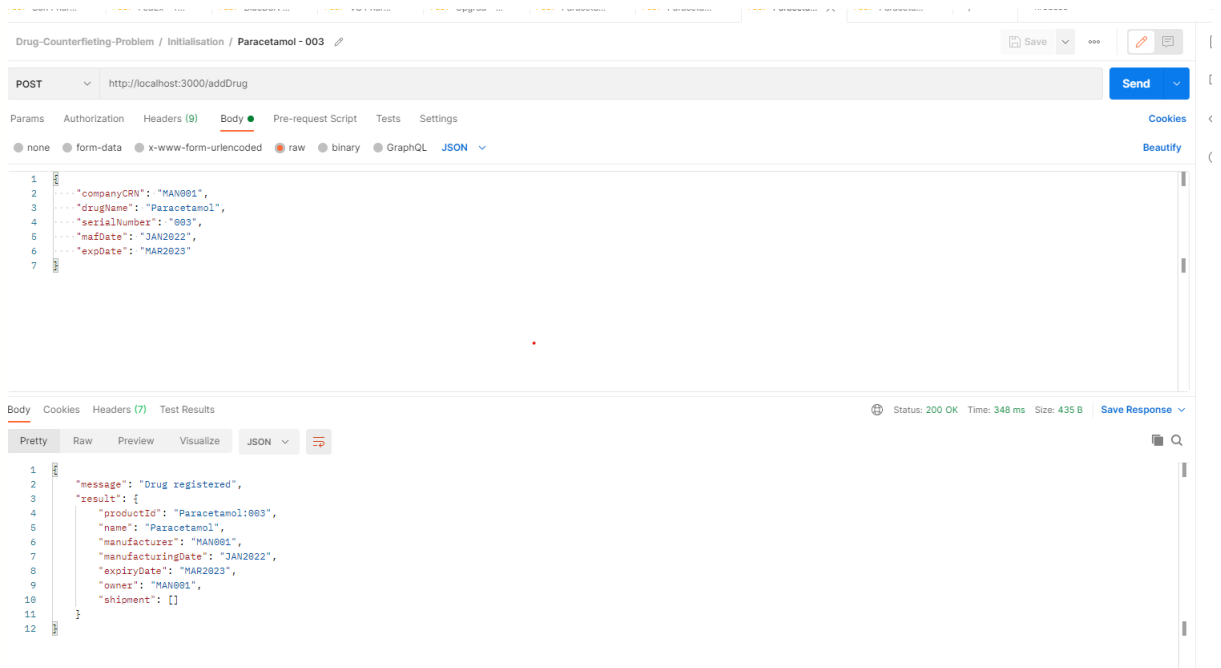


```
eth_accounts
eth_estimateGas
eth_getBlockByNumber
eth_gasPrice
eth_sendTransaction
Contract call:      Drugs#addDrug
Transaction:        0x9c2a55f4229ab20327206239fcffe271aa8f2d70d46bf5c3b5d1e5f91b1cf58a
From:               0x71be63f3384f5fb98995898a86b02fb2426c5788
To:                 0x5fbd2315678afecb367f032d93f642f64180aa3
Value:              0 ETH
Gas used:           220356 of 220356
Block #8:           0xa1ddeea1edd0448b02b5d759ae1880fe47416d227db1a9e28857e67b7b8ae55d

eth_getTransactionReceipt
eth_call
Contract call:      Drugs#getRegisteredDrug
From:               0xf39fd6e51aad88f6f4ce6ab8827279cfff92266
To:                 0x5fbd2315678afecb367f032d93f642f64180aa3
```

## 8. Create Drug

companyCRN: MAN001  
drugName: Paracetamol  
serialNumber: 003  
maDate: JAN2022  
expDate: MAR2023



```
eth_accounts
eth_estimateGas
eth_getBlockByNumber
eth_gasPrice
eth_sendTransaction
  Contract call: Drugs#addDrug
  Transaction: 0x7b97a5006b2a76877caf12e36b1fba03b066917bb3be77b86c472bb796b5db2c
  From: 0x71be63f3384f5fb98995898a86b02fb2426c5788
  To: 0x5fbdb2315678afecb367f032d93f642f64180aa3
  Value: 0 ETH
  Gas used: 220356 of 220356
  Block #9: 0x4eef4079debe61d051f5f37d714228fcd91f3398d03ef66b07252414cd173cb8

eth_getTransactionReceipt
eth_call
  Contract call: Drugs#getRegisteredDrug
  From: 0xf39fd6e51aad88f6f4ce6ab8827279cfff9b92266
  To: 0x5fbdb2315678afecb367f032d93f642f64180aa3
```

## 9. Create Drug

companyCRN: MAN001  
drugName: Paracetamol  
serialNumber: 003  
mafDate: JAN2022  
expDate: MAR2023

Drug-Counterfeiting-Problem / Initialisation / Paracetamol - 004

POST http://localhost:3000/addDrug

Params Authorization Headers (9) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1 {
2   "companyCRN": "MAN001",
3   "drugName": "Paracetamol",
4   "serialNumber": "004",
5   "maDate": "JAN2023",
6   "expDate": "MAR2024"
7 }
```

Body Cookies Headers (7) Test Results

Status: 200 OK Time: 315 ms Size: 435 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   "message": "Drug registered",
3   "result": {
4     "productId": "Paracetamol:004",
5     "name": "Paracetamol",
6     "manufacturer": "MAN001",
7     "manufacturingDate": "JAN2023",
8     "expiryDate": "MAR2024",
9     "owner": "MAN001",
10    "shipment": []
11  }
12 }
```

```
eth_accounts
eth_estimateGas
eth_getBlockByNumber
eth_gasPrice
eth_sendTransaction
  Contract call: Drugs#addDrug
  Transaction: 0x108dfefb0c65c9aac7b57a9e4705db631e4f8f3c3e8e8d87d9d78b392504f039
  From: 0x71be63f3384f5fb98995898a86b02fb2426c5788
  To: 0x5fbdb2315678afecb367f032d93f642f64180aa3
  Value: 0 ETH
  Gas used: 220356 of 220356
  Block #10: 0xcb266efc077029f8708d0ba0d991ad5cb030f6b5674a3ad1e11ae63e5c39e340

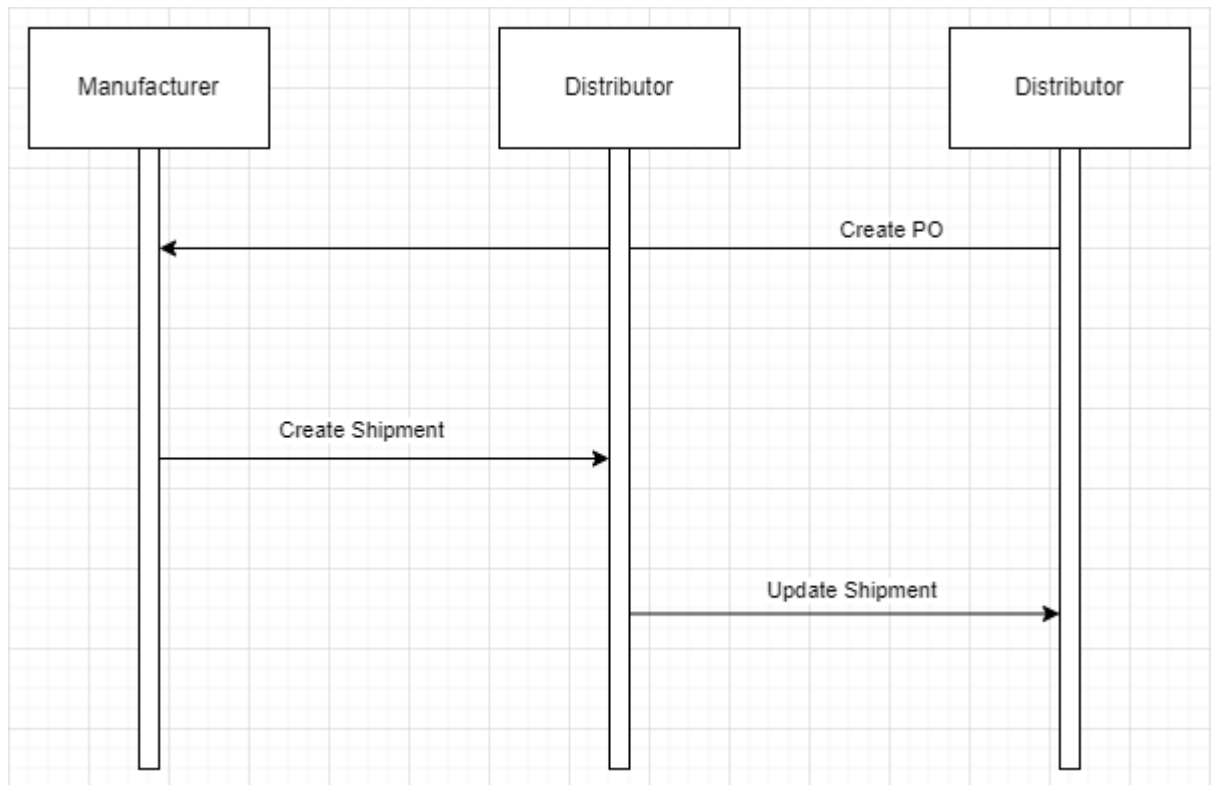
eth_getTransactionReceipt
eth_call
  Contract call: Drugs#getRegisteredDrug
  From: 0xf39fd6e51aad88f6f4ce6ab8827279cfff92266
  To: 0x5fbdb2315678afecb367f032d93f642f64180aa3
```

---

### Test Case 2: Supply Chain Part-A

---

This test case covers the request created by the distributor to manufacturer (createPO) & supply of the drugs (createShipment) from the manufacturer to the distributor via transport (updateShipment)



## 1. Create PO

buyerCRN: DIST001  
sellerCRN: MAN001  
drugName: Paracetamol  
quantity: 3

Supply Chain / Supply Chain - PartA / Create PO

POST http://localhost:3000/createPO

Params Authorization Headers (9) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1 {
2   ...."buyerCRN": "DIST001",
3   ...."sellerCRN": "MAN001",
4   ...."drugName": "Paracetamol",
5   ...."quantity": 3
6 }
```

Body Cookies Headers (7) Test Results

Pretty Raw Preview Visualize JSON

```
1 {
2   "message": "PO Created",
3   "result": {
4     "poId": "DIST001:Paracetamol",
5     "drugName": "Paracetamol",
6     "buyer": "DIST001",
7     "quantity": 3,
8     "seller": "MAN001"
9   }
10 }
```

Status: 200 OK Time: 672 ms Size: 374 B Save Response

```

eth_accounts
eth_estimateGas
eth_getBlockByNumber
eth_gasPrice
eth_sendTransaction
  Contract call:      Drugs#createPO
  Transaction:        0x32e870cd619159c1eb332b716fb82c831badebbf377761dd226a09fd80580ff7
  From:               0x71be63f3384f5fb98995898a86b02fb2426c5788
  To:                 0x5fbdb2315678afecb367f032d93f642f64180aa3
  Value:              0 ETH
  Gas used:           151281 of 151281
  Block #:            0xa07331010cfcc4a06ca3e9685c24f7ce63f047dacc076e2eee0899733cbfd975

eth_getTransactionReceipt
eth_call
  Contract call:      Drugs#getRegisteredPO
  From:               0xf39fd6e51aad88f6f4ce6ab8827279cfff92266
  To:                 0x5fbdb2315678afecb367f032d93f642f64180aa3

```

## 2. Create Shipment

buyerCRN: DIST001

drugName: Paracetamol

listOfAssets: [001, 002, 003]

transporterCRN: TRAN002

The screenshot displays a REST client interface with a POST request to `http://localhost:3000/createShipment`. The request body is a JSON object containing the following data:

```

{
  "buyerCRN": "DIST001",
  "drugName": "Paracetamol",
  "listOfAssets": ["001", "002", "003"],
  "transporterCRN": "TRAN002"
}

```

The response status is 200 OK, and the response body is a JSON object indicating the shipment was created successfully:

```

{
  "message": "Shipment Created",
  "result": {
    "shipmentID": "DIST001:Paracetamol",
    "creator": "NAN001",
    "assets": [
      "001",
      "002",
      "003"
    ],
    "transporter": "TRAN002",
    "status": "In-Transit"
  }
}

```

```

eth_accounts
eth_estimateGas
eth_getBlockByNumber
eth_gasPrice
eth_sendTransaction
  Contract call:      Drugs#createShipment
  Transaction:        0xa2d9471a6bbe1a1f56c0feb5fa8789e7f5582f584edb6a161ddb17e034c89688
  From:               0x71be63f3384f5fb98995898a86b02fb2426c5788
  To:                 0x5fbdb2315678afecb367f032d93f642f64180aa3
  Value:              0 ETH
  Gas used:           561446 of 561446
  Block #12:          0x7d405277c0af49108b745417800f6b6572549db537186d1291b76e30f484c023

eth_getTransactionReceipt
eth_call
  Contract call:      Drugs#getRegisteredShipment
  From:               0xf39fd6e51aad88f6f4ce6ab8827279cfff92266
  To:                 0x5fbdb2315678afecb367f032d93f642f64180aa3

```

### DRUG CURRENT STATE (001):

The screenshot shows a REST client interface for a POST request to `http://localhost:3000/viewDrugCurrentState`. The request body is a JSON object: `{ "drugName": "Paracetamol", "serialNumber": "001" }`. The response is a 200 OK status with a JSON body: `{ "message": "viewDrugCurrentState", "result": "Drug dispatched by seller: MAN001 with transporter: TRAN002 for PO DIST001:Paracetamol" }`.

```

eth_call
  Contract call:      Drugs#viewDrugCurrentState
  From:               0xf39fd6e51aad88f6f4ce6ab8827279cfff92266
  To:                 0x5fbdb2315678afecb367f032d93f642f64180aa3

```

### 3. Update Shipment

buyerCRN: DIST001

drugName: Paracetamol

transporterCRN: TRAN002



POST Create PO POST Create Shipment POST View Drug Curre... POST Update Shipment X + ... firebase

Supply Chain / Supply Chain - PartA / Update Shipment Save ...

POST http://localhost:3000/updateShipment Send

Params Authorization Headers (9) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1
2 {
3   "buyexCRN": "DIST001",
4   "drugName": "Paracetamol",
5   "transporterCRN": "TRAN002"
6 }
```

Body Cookies Headers (7) Test Results Status: 200 OK Time: 663 ms Size: 405 B Save Response

Pretty Raw Preview Visualize JSON

```
1
2 {
3   "message": "Shipment Updated",
4   "result": {
5     "shipmentID": "DIST001:Paracetamol",
6     "creator": "MAN001",
7     "assets": [
8       "001",
9       "002",
10      "003"
11     ],
12     "transporter": "TRAN002",
13     "status": "Delivered"
14   }
15 }
```

```
eth_accounts
eth_estimateGas
eth_getBlockByNumber
eth_gasPrice
eth_sendTransaction
  Contract call:      Drugs#updateShipment
  Transaction:        0x6d11f4baa647523a7ead31fa5c7908b94eee2c526b94d1d92ec6f111b94a3208
  From:               0x71be63f3384f5fb98995898a86b02fb2426c5788
  To:                 0x5fbd2315678afecb367f032d93f642f64180aa3
  Value:              0 ETH
  Gas used:           503449 of 503449
  Block #13:          0x90056f96a97b95c5234d5d5487f403ec3a787f3f1cba433be617de06473a0904

eth_getTransactionReceipt
eth_call
  Contract call:      Drugs#getRegisteredShipment
  From:               0xf39fd6e51aad88f6f4ce6ab8827279cfff92266
  To:                 0x5fbd2315678afecb367f032d93f642f64180aa3
```

DRUG HISTORY(001):

Drug-Counterfeiting-Problem / View History

POST http://localhost:3000/viewHistory

Params Authorization Headers (9) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1 {
2   "drugName": "Paracetamol",
3   "serialNumber": "991"
4 }
```

Body Cookies Headers (7) Test Results

Status: 200 OK Time: 136 ms Size: 473 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   "message": "View History",
3   "result": [
4     "Drug added by Manufacturer",
5     "Drug dispatched by seller MAN081 with transporter TRAN082 for PO DIST001:Paracetamol",
6     "Drug delivered by transporter TRAN082 to buyer DIST001 for PO DIST001:Paracetamol"
7   ]
8 }
```

eth\_call

Contract call: Drugs#viewHistory

From: 0xf39fd6e51aad88f6f4ce6ab8827279cffffb92266

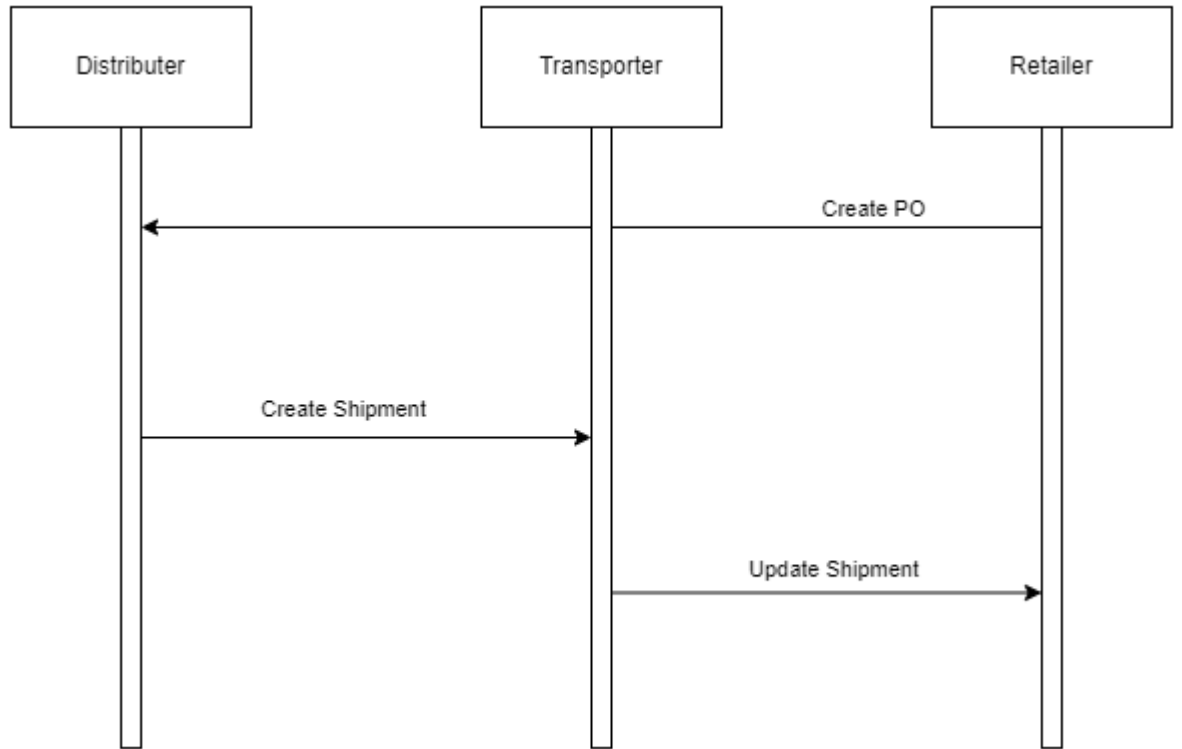
To: 0x5fbdb2315678afecb367f032d93f642f64180aa3

---

### Test Case 2: Supply Chain Part-B

---

This test case covers the request created by the retailer to distributor (createPO) & supply of the drugs (createShipment) from the distributor to the retailer via transport (updateShipment)



## 1. Create PO

buyerCRN: RET001  
sellerCRN: DIST001  
drugName: Paracetamol  
quantity: 2

Supply Chain / Supply Chain - PartB / Create PO

POST http://localhost:3000/createPO

Params Authorization Headers (9) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1 {
2   "buyerCRN": "RET001",
3   "sellerCRN": "DIST001",
4   "drugName": "Paracetamol",
5   "quantity": 2
6 }
```

Body Cookies Headers (7) Test Results

Pretty Raw Preview Visualize JSON

```
1 {
2   "message": "PO Created",
3   "result": {
4     "poId": "RET001:Paracetamol",
5     "drugName": "Paracetamol",
6     "buyer": "RET001",
7     "quantity": 2,
8     "seller": "DIST001"
9   }
10 }
```

Status: 200 OK Time: 398 ms Size: 373 B Save Response

```

eth_accounts
eth_estimateGas
eth_getBlockByNumber
eth_gasPrice
eth_sendTransaction
  Contract call:      Drugs#createPO
  Transaction:        0x006eae5d8fd396fc33a5774d88b2da33160fa59221372ad8bea94464a8340bea
  From:               0x71be63f3384f5fb98995898a86b02fb2426c5788
  To:                 0x5fbd2315678afecb367f032d93f642f64180aa3
  Value:              0 ETH
  Gas used:           151977 of 151977
  Block #14:          0x0ea35ecbda4cb709fc7f45b6f4e68b05446ebec5c89a7d24b1cc0548d4e5020d

eth_getTransactionReceipt
eth_call
  Contract call:      Drugs#getRegisteredPO
  From:               0xf39fd6e51aad88f6f4ce6ab8827279cfff92266
  To:                 0x5fbd2315678afecb367f032d93f642f64180aa3

```

## 2. Create Shipment

buyerCRN: RET001

drugName: Paracetamol

listOfAssets: [001, 002]

transporterCRN: TRAN002

The screenshot displays a REST client interface with a POST request to `http://localhost:3000/createShipment`. The request body is a JSON object containing the following data:

```

{
  "buyerCRN": "RET001",
  "drugName": "Paracetamol",
  "listOfAssets": ["001", "002"],
  "transporterCRN": "TRAN002"
}

```

The response status is 200 OK, and the response body is a JSON object indicating the shipment was created successfully:

```

{
  "message": "Shipment Created",
  "result": {
    "shipmentID": "RET001:Paracetamol",
    "creator": "DIST001",
    "assets": [
      "001",
      "002"
    ],
    "transporter": "TRAN002",
    "status": "In-Transit"
  }
}

```

```

eth_accounts
eth_estimateGas
eth_getBlockByNumber
eth_gasPrice
eth_sendTransaction
  Contract call:    Drugs#createShipment
  Transaction:      0xd117634293dfe7ef7b049f3327922d20277a2a7a962c7e1245bc70c4a11e2d02
  From:             0x71be63f3384f5fb98995898a86b02fb2426c5788
  To:               0x5fbdb2315678afecb367f032d93f642f64180aa3
  Value:            0 ETH
  Gas used:         429460 of 429460
  Block #15:        0x5e0bc3ae236f214a2248f8ece367100362988b25afbd68646721b405a36df4d9

eth_getTransactionReceipt
eth_call
  Contract call:    Drugs#getRegisteredShipment
  From:             0xf39fd6e51aad88f6f4ce6ab8827279cfff92266
  To:               0x5fbdb2315678afecb367f032d93f642f64180aa3

```

### 3. Update Shipment

buyerCRN: RET001

drugName: Paracetamol

transporterCRN: TRAN002

The screenshot displays a REST client interface with a tab for 'POST Update Ship...'. The request is a POST to 'http://localhost:3000/updateShipment' with a JSON body containing shipment details. The response is a 200 OK status with a JSON body indicating the shipment was updated successfully.

**Request:**

```

POST http://localhost:3000/updateShipment
{
  "buyerCRN": "RET001",
  "drugName": "Paracetamol",
  "transporterCRN": "TRAN002"
}

```

**Response:**

```

{
  "message": "Shipment Updated",
  "result": {
    "shipmentID": "RET001:Paracetamol",
    "creator": "DIST001",
    "assets": [
      "001",
      "002"
    ],
    "transporter": "TRAN002",
    "status": "Delivered"
  }
}

```

```

eth_accounts
eth_estimateGas
eth_getBlockByNumber
eth_gasPrice
eth_sendTransaction
  Contract call:      Drugs#updateShipment
  Transaction:        0x7a1beb372fe9a3a3e5b443f5eeef8a3b89e32460383c4d4b6f09717edd3c82219
  From:                0x71be63f3384f5fb98995898a86b02fb2426c5788
  To:                  0x5fbdb2315678afecb367f032d93f642f64180aa3
  Value:               0 ETH
  Gas used:            316758 of 316758
  Block #16:           0x5cdedd27604d21e02f103f1ba70f089ef1049296ceb6d4477485dfc75d2a4f92

eth_getTransactionReceipt
eth_call
  Contract call:      Drugs#getRegisteredShipment
  From:                0xf39fd6e51aad88f6f4ce6ab8827279cffffb92266
  To:                  0x5fbdb2315678afecb367f032d93f642f64180aa3

```

## CURRENT DRUG HISTORY:

The screenshot shows a REST client interface with the following details:

- Method:** POST
- URL:** http://localhost:3000/viewHistory
- Body (JSON):**

```

{
  "drugName": "Paracetamol",
  "serialNumber": "001"
}

```
- Status:** 200 OK
- Time:** 126 ms
- Size:** 643 B
- Response (JSON):**

```

{
  "message": "View History",
  "result": [
    "Drug added by Manufacturer",
    "Drug dispatched by seller MAN001 with transporter TRAN002 for PO DIST001:Paracetamol",
    "Drug delivered by transporter TRAN002 to buyer DIST001:Paracetamol",
    "Drug dispatched by seller DIST001 with transporter TRAN002 for PO RET001:Paracetamol",
    "Drug delivered by transporter TRAN002 to buyer RET001:Paracetamol"
  ]
}

```

```

eth_call
  Contract call:      Drugs#viewHistory
  From:                0xf39fd6e51aad88f6f4ce6ab8827279cffffb92266
  To:                  0x5fbdb2315678afecb367f032d93f642f64180aa3

```

## Test Case 2: Supply Chain – Part C

In this test case a customer simply buys the drug from the retailer (retailDug)

## 1. Retail Drug

drugName: Paracetamol  
serialNumber: 001  
retailerCRN: RET001  
customerAadhar: AAD001

The screenshot shows a REST client interface with the following details:

- Method:** POST
- URL:** http://localhost:3000/retailDrug
- Body (raw):**

```
1 {
2   "drugName": "Paracetamol",
3   "serialNumber": "001",
4   "retailerCRN": "RET001",
5   "customerAadhar": "AAD001"
6 }
```
- Status:** 200 OK, Time: 405 ms, Size: 473 B
- Body (JSON):**

```
1 {
2   "message": "Retail Drug",
3   "result": {
4     "productId": "Paracetamol:001",
5     "name": "Paracetamol",
6     "manufacturer": "NAN001",
7     "manufacturingDate": "JAN2020",
8     "expiryDate": "FEB2021",
9     "owner": "AAD001",
10    "shipment": {
11      "DIST001:Paracetamol",
12      "RET001:Paracetamol"
13    }
14  }
15 }
```

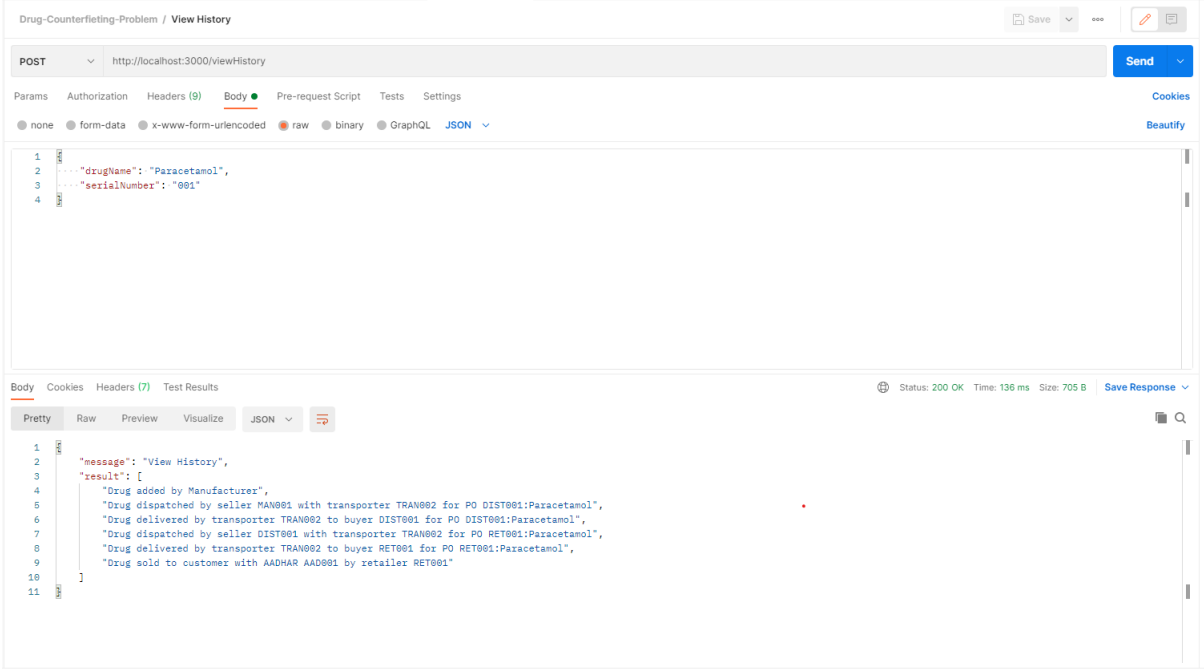
```
eth_accounts
eth_estimateGas
eth_getBlockByNumber
eth_gasPrice
eth_sendTransaction
  Contract call:    Drugs#retailDrug
  Transaction:     0xf457bcd9944d93b7ab50e55df806d0b46e26d8cc8377a9d42a655ca739c98b6
  From:            0x71be63f3384f5fb98995898a86b02fb2426c5788
  To:              0x5fbd2315678afecb367f032d93f642f64180aa3
  Value:           0 ETH
  Gas used:        110435 of 110435
  Block #17:       0x04a507cc352c2cd8e3466c0faeb700a508b8ef6d9b9ea84c0a976dba92ed5a6c

eth_getTransactionReceipt
eth_call
  Contract call:    Drugs#getRegisteredDrug
  From:             0xf39fd6e51aad88f6f4ce6ab8827279cfff92266
  To:               0x5fbd2315678afecb367f032d93f642f64180aa3
```

## TestCase 3 – Veiw Drug

### 1. View Drug History

drugName: Paracetamol  
serialNumber: 001



The screenshot shows a REST client interface for a 'Drug-Counterfeiting-Problem' project. A POST request is sent to 'http://localhost:3000/viewHistory' with a JSON body containing 'drugName': 'Paracetamol' and 'serialNumber': '001'. The response is a 200 OK status with a JSON body containing a message and a list of drug history entries.

```
POST http://localhost:3000/viewHistory
```

```
{  "drugName": "Paracetamol",  "serialNumber": "001"}
```

```
{  "message": "View History",  "result": [    "Drug added by Manufacturer",    "Drug dispatched by seller MAN001 with transporter TRAN002 for PO DIST001:Paracetamol",    "Drug delivered by transporter TRAN002 to buyer DIST001 for PO DIST001:Paracetamol",    "Drug dispatched by seller DIST001 with transporter TRAN002 for PO RET001:Paracetamol",    "Drug delivered by transporter TRAN002 to buyer RET001 for PO RET001:Paracetamol",    "Drug sold to customer with AADHAR AAD001 by retailer RET001"  ]}
```

eth\_call  
Contract call: Drugs#viewHistory  
From: 0xf39fd6e51aad88f6f4ce6ab8827279cffffb92266  
To: 0x5fbdb2315678afecb367f032d93f642f64180aa3

### 2. View Drug current State

drugName: Paracetamol  
serialNumber: 001



Drug-Counterfeiting-Problem / View Drug Current State

POST http://localhost:3000/viewDrugCurrentState

Params Authorization Headers (9) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1 {
2   "drugName": "Paracetamol",
3   "serialNumber": "001"
4 }
```

Body Cookies Headers (7) Test Results

Status: 200 OK Time: 82 ms Size: 341 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   "message": "viewDrugCurrentState",
3   "result": "Drug sold to customer with AADHAR AAD001 by retailer RET001"
4 }
```

```
eth_call
Contract call:      Drugs#viewDrugCurrentState
From:               0xf39fd6e51aad88f6f4ce6ab8827279cfff92266
To:                 0x5fbdb2315678afecb367f032d93f642f64180aa3
```