

```
File Edit Selection View Go ... DRUGTRACEABILITY
```

EXPLORER

- OPEN EDITORS
 - app.py src 1
- DRUGTRACEABILITY
 - build
 - contracts
 - logs
 - migrations
 - src
 - static
 - templates
- app.py 1
- test.py
- test
- bs-config.json
- package.json
- Readme.md
- truffle-config.js

OUTLINE

TIMELINE

```
src > app.py > connect_blockchain_drug
17 contract_address="0x2669Fdf385bC1aA93Df76755066beE72D5b76C46"
18 with open(artifact_path) as f:
19     contract_json=json.load(f)
20     contract_abi=contract_json['abi']
21
22 contract=web3.eth.contract(address=contract_address,abi=contract_abi)
23 print('connected with blockchain')
24 print("CONTRACT : ",contract)
25 return (contract,web3)
26
def connect_blockchain_register(app):
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

node + v ... ^ x

(nagenv2) C:\Users\Nagraj\Desktop\DRUG\DRUGTRACEABILITY\src>truffle develop
Truffle Develop started at http://127.0.0.1:9545/

Accounts:

- (0) 0x0953413aa42b6a48d18e3b0ad2aeeaf68f03ca74
- (1) 0xf9fac9fa4a1c94880ee7c148dd177cca1cadbc72
- (2) 0x8a23ae5f27f66ba7d8b89c4e6912d13a540fa3fa
- (3) 0x3dd77b7857e64fa04947ea03d45d41765e67ae51
- (4) 0x506237a43446fc534a9e60820bf5c0eca702937f
- (5) 0xdae6567024d9b9fa67eb3abd5612d74ce82cbb4
- (6) 0x06ef36d5a3ee0c465d054301d538bbfba646b60b
- (7) 0x2d0df384bf20acecf5e2e30c057194b42e436a52
- (8) 0x3620142d69b03b2f1f1c437e284984f3e2c3be70
- (9) 0x1c0f0c3dafd66498da0d7728752dbc62d0d34b35

Private Keys:

- (0) 6c7f03b6ef7e14226cb9c683c04dd75b9ab651b54abc1fbb81714f5d83218200
- (1) a9cd6ae5ba3020d35e53f15670b71cf22ecbdf85e92c499a509ad336897eedf
- (2) 354aedd6b1d81129ba29c9fb1b9fe0cef57304ab982b87543ec1989083361b51
- (3) 2387f910c813af5629b220d5bba68add996bb9ec684318f2d76f61ef1022bc1
- (4) 5d9b683328bcad971c86198f353c95bd2e4638ddc1a1991720e00c0db860aca0

Ln 17, Col 65 (42 selected) Spaces: 4 UTF-8 LF Python 3.7.6 64-bit

```
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```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

node + v ... ^ x

(7) 2263ffff448cd098dd68b62681c8d7ce0560f0584a20c6be038a86e152e8f679
(8) e634fd8bbf733d9426e9b7f53f75dc3aa3c34b35815af7707ee3f65ccf04ba17
(9) a4c180cf7e28602579fa8ea49ecee5e47f778b08e1c287825dbdb461b98557e

Mnemonic: recycle reveal carbon clarify chase spoon wall shuffle sweet cousin soccer cloth

⚠ Important ⚠ : This mnemonic was created for you by Truffle. It is not secure.
Ensure you do not use it on production blockchains, or else you risk losing funds.

truffle(develop)> truffle migrate

Compiling your contracts...

- > Compiling .\contracts\Migrations.sol
- > Compiling .\contracts\drug.sol
- > Compiling .\contracts\register.sol

> Artifacts written to C:\Users\Nagraj\Desktop\DRUG\DRUGTRACEABILITY\build\contracts

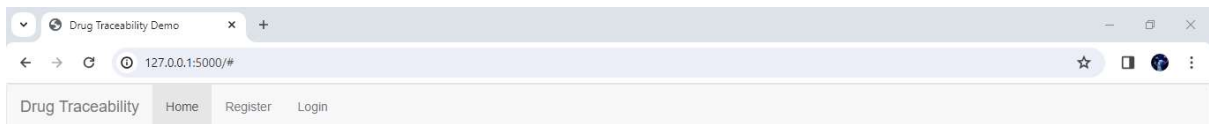
Ln 17, Col 65 (42 selected) Spaces: 4 UTF-8 LF Python 3.7.6 64-bit

The screenshot shows a Visual Studio Code editor window titled 'DRUGTRACEABILITY'. The Explorer sidebar on the left shows a project structure with folders 'OPEN EDITORS', 'app.py src', 'DRUGTRACEABILITY', 'build', 'contracts', 'logs', 'migrations', 'src', 'static', and 'templates'. The 'app.py' file is open in the editor, showing the following code:

```
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25 return (contract,web3)
26
27 def connect_blockchain_register(app):
```

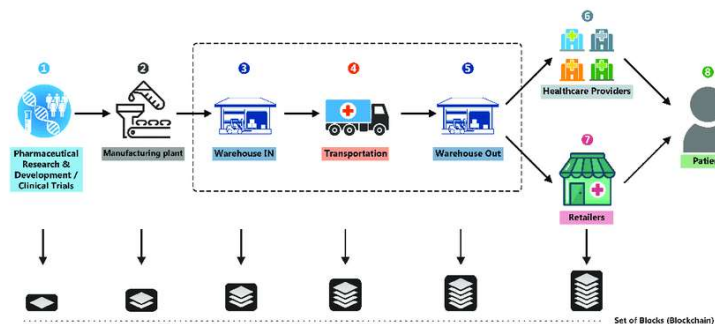
The TERMINAL panel at the bottom shows the output of running the application:

```
(nagenv2) C:\Users\Nagraj\Desktop\DRUG\DRUGTRACEABILITY\src>python app.py
* Serving Flask app 'app' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://127.0.0.1:5000 (Press CTRL+C to quit)
* Restarting with watchdog (windowsapi)
* Debugger is active!
* Debugger PIN: 454-701-244
```



Blockchain Based Approach for Drug Traceability in Healthcare

Healthcare Supply Chain is a complex network of several independent entities that include raw material suppliers, manufacturers, distributor, pharmacies, hospitals and patients. Tracking supplies through this network is non-trivial due to several factors including lack of information, centralized control and competing behaviour among stakeholders.



Ganache

ACCOUNTS

BLOCKS

TRANSACTIONS

CONTRACTS

EVENTS

LOGS

SEARCH FOR BLOCK NUMBERS OR TX HASHES

CURRENT BLOCK168

GAS PRICE20000000000

GAS LIMIT6721975

HARDFORKMERGE

NETWORK ID5777

RPC SERVERHTTP://127.0.0.1:7545

MINING STATUS30 SEC BLOCK TIME

WORKSPACECOHERENT-MOON

SWITCH

DRUGTRACEABILITY C:\Users\Nagraj\Desktop\DRUG\DRUGTRACEABILITY

NAME drug	ADDRESS 0×CCD54E29F9F01817C35A2021308162ddC4130719	TX COUNT 0	DEPLOYED
NAME Migrations	ADDRESS 0×D4eACE69E501C903076385B80854d18C2511124E	TX COUNT 0	DEPLOYED
NAME register	ADDRESS 0×22734B9c5A6fcC046d20b8bC618a177dc79f4fFb	TX COUNT 2	DEPLOYED

Ganache

ACCOUNTS

BLOCKS

TRANSACTIONS

CONTRACTS

EVENTS

LOGS

SEARCH FOR BLOCK NUMBERS OR TX HASHES

CURRENT BLOCK167

GAS PRICE20000000000

GAS LIMIT6721975

HARDFORKMERGE

NETWORK ID5777

RPC SERVERHTTP://127.0.0.1:7545

MINING STATUS30 SEC BLOCK TIME

WORKSPACECOHERENT-MOON

SWITCH

MNEMONIC

give stone satisfy wide shine sing else olympic album female stable educate

HD PATH

m44'60'0"0account_index

ADDRESS 0×7a2D7c7c8CbAaf4AB4b4b171a5b0B23f0109EB18	BALANCE 99.99 ETH	TX COUNT 10	INDEX 0	
ADDRESS 0×C2aD3e178e1260DF1A9B64173C04e9da31a1e119	BALANCE 100.00 ETH	TX COUNT 8	INDEX 1	
ADDRESS 0×2d3C9ff40b104b8E164267666a0FdA78968E454a	BALANCE 100.00 ETH	TX COUNT 2	INDEX 2	
ADDRESS 0×0c295ae4DF296069e9A3C5faF54A5faA668a3cF9	BALANCE 100.00 ETH	TX COUNT 3	INDEX 3	
ADDRESS 0×8e0D23519243A7F2DA5Eea2Cf3Ba8d1e2076CE99	BALANCE 100.00 ETH	TX COUNT 3	INDEX 4	
ADDRESS 0×786f5cA786C0e5A2C28d56102b9e7858cc540D33	BALANCE 100.00 ETH	TX COUNT 2	INDEX 5	

ACCOUNTS

BLOCKS

TRANSACTIONS

CONTRACTS

EVENTS

LOGS

SEARCH FOR BLOCK, TRANSACTION, CONTRACT

CURRENT BLOCK
170

INIT POOL
20000000000

CAL LIMIT
4721975

MAXIMUM
MEMO

NETWORK ID
5777

RPC SERVER
HTTP://127.0.0.1:7545

MINING STATUS
30 SEC BLOCK TIME

MINER NAME
CIPHER-SIDEON

SWITCH

MNEMONIC

give stone satisfy wide shine sing else olympic album female stable educate

HD PATH
m44'88'8'0account_index

ACCOUNT INFORMATION

ACCOUNT ADDRESS
0x7a2D7c7c8CbAaf4AB4b4b171a5b0B23f0109EB18

PRIVATE KEY
0x13cd146cb4c7f91a1a3220dc5fd6d971212e4b4b552edbb76625bfc5bdf8f3dc
Do not use this private key on a public blockchain; use it for development purposes only!

DONE

ADDRESS
0x7a2D7c7c8CbAaf4AB4b4b171a5b0B23f0109EB18

TX COUNT
10

INDEX
0

ADDRESS
0xC2aD3e178e1260DF1A9B64173C04e9da31a1e119

TX COUNT
8

INDEX
1

ADDRESS
0x2d3C9ff40b104b8E164267666a8E164267666a8E164267666a

TX COUNT
2

INDEX
2

ADDRESS
0x0c295ae4DF296069e9A3C5faF58c295ae4DF296069e9A3C5faF5

TX COUNT
3

INDEX
3

ADDRESS
0x8e0D23519243A7F2DA5Eea2Cf38a8d1e2076CE99

BALANCE
100.00 ETH

TX COUNT
3

INDEX
4

ADDRESS
0x786f5cA786C0e5A2C28d56102b9e7858cc540D33

BALANCE
100.00 ETH

TX COUNT
2

INDEX
5

ACCOUNTS

BLOCKS

TRANSACTIONS

CONTRACTS

EVENTS

LOGS

SEARCH FOR BLOCK, TRANSACTION, CONTRACT

CURRENT BLOCK
171

INIT POOL
20000000000

CAL LIMIT
4721975

MAXIMUM
MEMO

NETWORK ID
5777

RPC SERVER
HTTP://127.0.0.1:7545

MINING STATUS
30 SEC BLOCK TIME

MINER NAME
CIPHER-SIDEON

SWITCH

MNEMONIC

give stone satisfy wide shine sing else olympic album female stable educate

HD PATH
m44'88'8'0account_index

ACCOUNT INFORMATION

ACCOUNT ADDRESS
0xC2aD3e178e1260DF1A9B64173C04e9da31a1e119

PRIVATE KEY
0x4d13e3ba979772ceeb66723f6dbadcaf7840e9f99299266e97e5f7e896718314
Do not use this private key on a public blockchain; use it for development purposes only!

DONE

ADDRESS
0x7a2D7c7c8CbAaf4AB4b4b171a5b0B23f0109EB18

TX COUNT
10

INDEX
0

ADDRESS
0xC2aD3e178e1260DF1A9B64173C04e9da31a1e119

TX COUNT
8

INDEX
1

ADDRESS
0x2d3C9ff40b104b8E164267666a8E164267666a8E164267666a

TX COUNT
2

INDEX
2

ADDRESS
0x0c295ae4DF296069e9A3C5faF58c295ae4DF296069e9A3C5faF5

TX COUNT
3

INDEX
3

ADDRESS
0x8e0D23519243A7F2DA5Eea2Cf38a8d1e2076CE99

BALANCE
100.00 ETH

TX COUNT
3

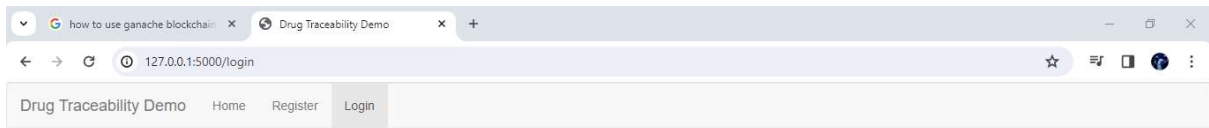
INDEX
4

ADDRESS
0x786f5cA786C0e5A2C28d56102b9e7858cc540D33

BALANCE
100.00 ETH

TX COUNT
2

INDEX
5



Registration is Completed...with Hash & Walet Values are

HASH Value 0x8ac666cafb3237f010bd58198b882ca811484ffe4ab3693606ff1fcadba4e07

Wallet Address0x220433C73fae8eabAE2BB50e38BfB77c844890d6

Login form

Enter your Wallet Address:

Password:

Login



Login form

Enter your Wallet Address:

Password:

Login

Lab Dashboard

Sanctioning Drug to the Manufacturer for production

Enter Manufacturer Wallet Address:

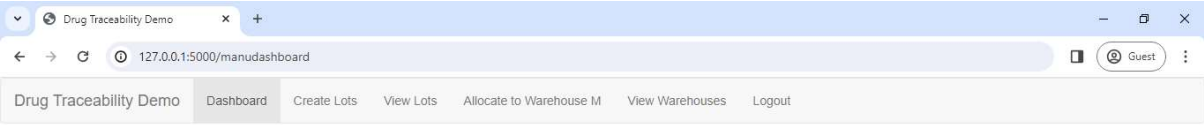
Formula to share:

Share

Lab Dashboard

List of Manufacturers who are producing our drugs

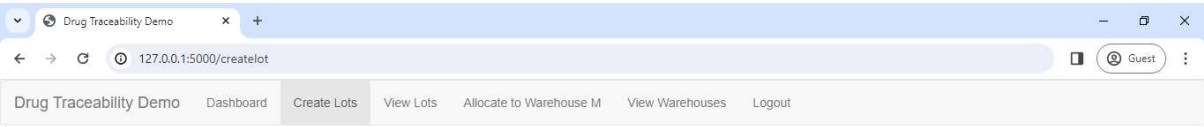
Manufacturer Wallet	Manufacturer Name	Drug Sanctioned
0x7a2D7c7c8CbAaf4AB4b4b171a5b0B23f0109EB18	NagL2	h2n2
0xC2aD3e178e1260DF1A9B64173C04e9da31a1e119	NagM1	H1B12GGH
0xC2aD3e178e1260DF1A9B64173C04e9da31a1e119	NagM1	KL45THG



Manufacturers Dashboard

Sanctioned Drugs for production

Drug Formula	Lab Name	Lab Wallet Address
H1B12GGH	NagL2	0x7a2D7c7c8CbAaf4AB4b4b171a5b0B23f0109EB18
KL45THG	NagL2	0x7a2D7c7c8CbAaf4AB4b4b171a5b0B23f0109EB18



Manufacturers Dashboard

Create lots from production lines

Enter Lot id:

How many pills are there in this lot:

Select the drug formula of the lot:

KL45THG

Create Lot

Manufacturers Dashboard

Store lots in Warehouse M

Enter Lot id:

845627

Enter Warehouse M Wallet Address:

0x2d3C9ff40b104b8E164267666a0FdA78968E454d

Allocate to Warehouse

Manufacturers Dashboard

View lots to export

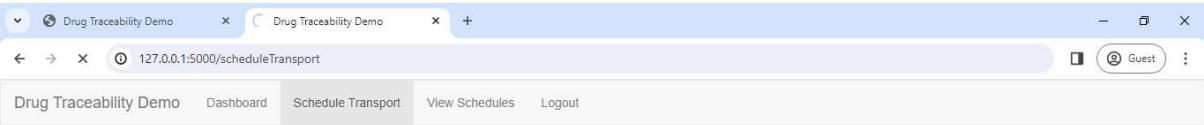
Lot Manufacturer	Lot Manufacturer Address	Lot Id	Lot Pill Count	Lot Lab Formula	Lot Status
NagM1	0xC2aD3e178e1260DF1A9B64173C04e9da31a1e119	11011	50		Allocated
NagM1	0xC2aD3e178e1260DF1A9B64173C04e9da31a1e119	845627	250	KL45THG	Available



Manufacturers Dashboard

View lots to export

Lot Manufacturer	Lot Manufacturer Address	Lot Id	Lot Pill Count	Lot Lab Formula	Lot Status
NagM1	0xC2aD3e178e1260DF1A9B64173C04e9da31a1e119	11011	50		Allocated
NagM1	0xC2aD3e178e1260DF1A9B64173C04e9da31a1e119	845627	250	KL45THG	Available



Warehouse M Dashboard

Schedule a Transport

Enter Lot id:

Through whom you want to transfer

To which warehouse you want to transfer

Warehouse M Dashboard

Schedule a Transport

Enter Lot id:

845627

Through whom you want to transfer

0x0c295ae4df296069e9a3c5faF54A5faA668a3cF9

To which warehouse you want to transfer

0x8e0D23519243A7F2DA5Eea2Cf3Ba8d1e2076CE99

Schedule Transport

Warehouse M Dashboard

Received Lots for Storage

Manufacturer	Manufacturer Wallet	Lot Id	Lot Formula	Lot Pill Count	Status
NagM1	0xC2aD3e178e1260DF1A9B64173C04e9da31a1e119	11011		50	Available
NagM1	0xC2aD3e178e1260DF1A9B64173C04e9da31a1e119	845627	KL45THG	250	In-Transit



Transporter Dashboard

Transportation Schedules

Sender	Sender Wallet	Receiver	Receiver Wallet	Lot Id	Status
NagWMI1	0x2d3C9ff40b104b8E164267666a0FdA78968E454a	NagWT1	0x8e0D23519243A7F2DA5Eea2Cf3Ba8d1e2076CE99	845627	In-transit



Transporter Dashboard

Update Transport

Enter Lot id:

Select your Status:

2 -> Delivered

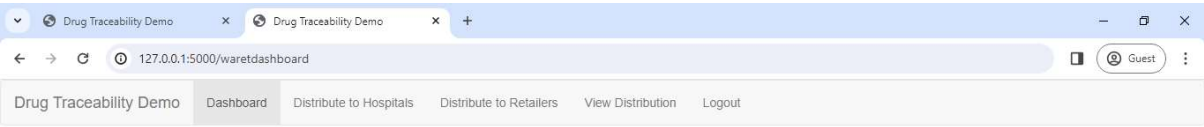
Schedule Transport



Transporter Dashboard

Transportation Schedules

Sender	Sender Wallet	Receiver	Receiver Wallet	Lot Id	Status
NagWM1	0x2d3C9ff40b104b8E164267666a0FdA78968E454a	NagWT1	0x8e0D23519243A7F2DA5Eea2Cf3Ba8d1e2076CE99	845627	Delivered



Warehouse T Dashboard

Received Lots for Distribution

From Warehouse	Manufactured By	Transported By	Lot Id	Lot Formula	Lot Pill Count	Status
NagWM1	NagM1	NagT1	845627	KL45THG	250	Available

Warehouse T Dashboard

Distribute to Hospitals

Select the drug that you want to distribute:

KL45THG

To which hospital you want to distribute

0x786f5cA786C0e5A2C28d56102b9e7858cc540D33

Enter number of pills you want to distribute

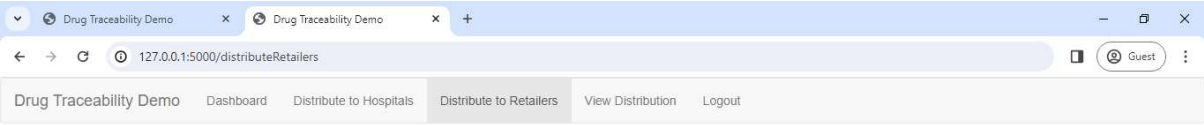
50

Distribute to Hospital

Warehouse T Dashboard

Received Lots for Distribution

Distributed to	Medicine Name	Distributed Count
NagH1	KL45THG	50



Warehouse T Dashboard

Distribute to Retailers

Select the drug that you want to distribute:

KL45THG

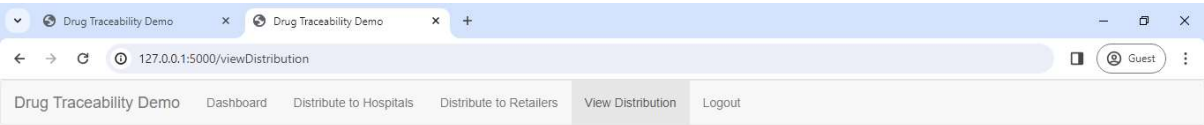
To which retailer you want to distribute

0x2b044AdaeeBd7d7BdAad5D895C583CA17bac55eF

Enter number of pills you want to distribute

50

Distribute to Retailer



Warehouse T Dashboard

Received Lots for Distribution

Distributed to	Medicine Name	Distributed Count
NagR1	KL45THG	50
NagH1	KL45THG	50

Hospitals Dashboard

Received Medicines from Distributor

From Distributor	Manufactured By	Researched By	Medicine Name	Pill Count
NagWT1	NagM1	NagL2	KL45THG	50

Hospitals Dashboard

Give to Patient

Select the drug that you want to give:

KL45THG

To which patient you want to allocate

0xf60dF24c681ebee92C2d0faE168C28Cfd788F705

Enter number of pills you want to allocate

10

Give it to patient



Hospitals Dashboard

Patient Records

Patient Name	Patient Wallet	Medicine Name	Pill Count
NagP1	0x160dF24c681ebee92C2d0faE168C28Cfd788F705	KL45THG	10



Patients Dashboard

Medical Consultation List

Consultation By	Manufactured By	Researched By	Medicine Name	Pill Count
NagH1	NagM1	NagL2	KL45THG	10

Patients Dashboard

Medical Consultation List

Select the drug that you want to give:

KL45THG

To which patient you want to allocate

Its working fine and my problems has been solved

Feedback

Lab Dashboard

Feedbacks of our Drugs

Drug Name	Feedback of Client	Drug Sanctioned to
h2n2	Nice Job	NagL2
H1B12GGH	Nice Job	NagM1
KL45THG	Nice Job	NagM1
KL45THG	Its working fine and my problems has been solved	NagM1

```
File Edit Selection View Go ... DRUGTRACEABILITY

app.py 1 x
src > app.py > connect_Blockchain_drug
671     l=len(data)
672     return render_template('rgivetoPatient.html',len1=l,dashboard_data1=data)
673
674 @app.route('/rgivetoPatientForm',methods=['GET','POST'])
675 def rgivetoPatientForm():
676     drug=request.form['lotlabform']
677     patientid=request.form['patientId']
678     count=int(request.form['lotpillcount'])
679     print(drug,patientid,count)
680     contract,web3=connect_Blockchain_drug(session['walletaddr'])
681     tx_hash=contract.functions.givetoPatients(session['walletaddr'],patientid,drug,count).transact()
682     web3.eth.waitForTransactionReceipt(tx_hash)
683     return redirect('/rviewPatients')
684
685 @app.route('/rviewPatients')
686 def rviewPatients():
687
688     contract,web3=connect_Blockchain_register(0)
689     _users,_passwords,_roles,_names=contract.functions.viewUsers().call()
690
691     contract,web3=connect_Blockchain_drug(session['walletaddr'])
692     _givers,_patients,_giverslotlabform,_giverscount=contract.functions.viewPatients().call()
693
694     data=[]
695     for i in range(len(_patients)):
696         if _givers[i]==session['walletaddr']:
697             dummy=[]
698             patientIndex=_users.index(_patients[i])
699             dummy.append(_names[patientIndex])
700             dummy.append(_patients[i])
701             dummy.append(_giverslotlabform[i])
702             dummy.append(_giverscount[i])
```

Ln 17, Col 65 (42 selected) Spaces: 4 UTF-8 LF Python 3.7.6 64-bit