### Lab Setup:

# Step-1)Adding Peers node

```
Step-1/Acduming Preers inode

Fatal: Palled to read genesis file: open labl/genesis.json: no such file or directory

[Dhrumils-MBP:labl dhrumils is

[Dhrumils-MBP:labl dhrumils geth —datadir bkc_data init genesis.json

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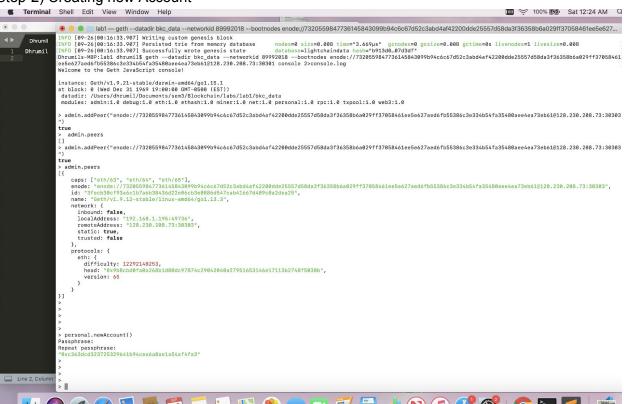
INFO (09-26 [08:16:33.887] XM init go uston genesis state

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INFO (09-26 [08:16:33.887] XM init go uston genesis state

INFO (09-26 [08:16
   instance: Geth/v1.9.21-stable/darwin-amd64/gg1.15.1
at block: 0 (Wed Dec 31 1969 19:00:00 GWT-0500 (EST))
datadir: // Lugers/dhrumi/lyOcuments/sem3/Blockchain/labs/lab1/bkc_data
modules: admin:1.0 debug:1.0 eth:1.0 ethsshil.0 miner:1.0 net:1.0 personal:1.0 rpc:1.0 txpool:1.0 web3:1.0
 |> admin.addree.
true
|> admin.peers
[]
|> admin.addPeer
          admin.addPeer("enode://7320559847736145843899b94c6c67d52c3abd4af42200dde25557d58da3f36358b6a029ff37058461ee5e627aed6fb55386c3e334b54fa35480aee4ea73eb61@128.230.208.73:30303")
            admin.addPeer(*enode://7328559847736145843099b94c6c67d52c3abd4af42200dde25557d58da3f36358b6a029ff37058461ee5e627aed6fb55386c3e334b54fa35480aee4ea73eb610128.230.208.73:30303*)
                caps: ["eth/63", "eth/64", "eth/65"],
enode: "enode://732955984773614884399994c6c67d52c3abd4af42288dde25557d58da3f36358b6a829ff37858461ee5e627aed6fb55386c3e334b54fa35488aee4ea73eb61@128.238.288.73:38383",
id: "3fecb3ec793aec137e6a98346222e80e5262e388866547eab41667d489c8a2dee25",
name: "Geth/v1.9.12-stable/linux-amd64/go1.13.3",
                name: "Geth/v1.4.12-stable/linux-amdo4/g
network: {
  inbound: false,
  localAddress: "192.168.1.195:49736*,
  remoteAddress: "128.230.208.73:30303",
  static: true,
  trusted: false
                           eth: {
    difficulty: 12292148253,
    head: "0x908cbd0fa0a268b1d80dc97874c29042040a27951653146e1711362748f5038b*,
    version: 65
```

# Step-2) Creating new Account



Question 1) I have unlocked the account and have started the mining process. As you can see in the screen shot after 1 minute the amount of coin i have mined has increased because when i run miner.getHashRate() i get a value which is greater than zero which means that mining process was running.

```
🖲 🥚 🌑 🏣 lab1 — geth --datadir bkc_data --networkid 89992018 --bootnodes enode://7320559847736145843099b94c6c67d52c3abd4af42200dde25557d58da3f36358b6a029ff37058461ee5e627...
    Dhrumil
              personal.newAccount()
              etn.accounts
"0xc363dcd323725329641b94cea6a8ae1a54af4fa3"]
web3.fromWei(eth.getBalance(eth.accounts[0]),"ether")
             personal.newAccount()
            true
|> miner.start(1)
| null
              miner.getHashrate()
             > web3.fromWei(eth.getBalance(eth.accounts[1]),"ether")
              web3.fromWei(eth.getBalance(eth.accounts[1]), "ether")
              web3.fromWei(eth.getBalance(eth.accounts[1]), "ether")
               web3.fromWei(eth.getBalance(eth.accounts[1]), "ether")
               web3.fromWei(eth.getBalance(eth.accounts[1]), "ether")
               web3.fromWei(eth.getBalance(eth.accounts[1]),"ether")
              miner.getHashrate()
             22514
> web3.fromWei(eth.getBalance(eth.accounts[1]), "ether")
Line 2, Colum
```

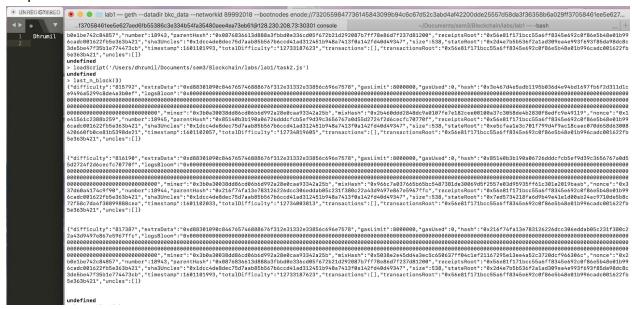
#### Question 2)

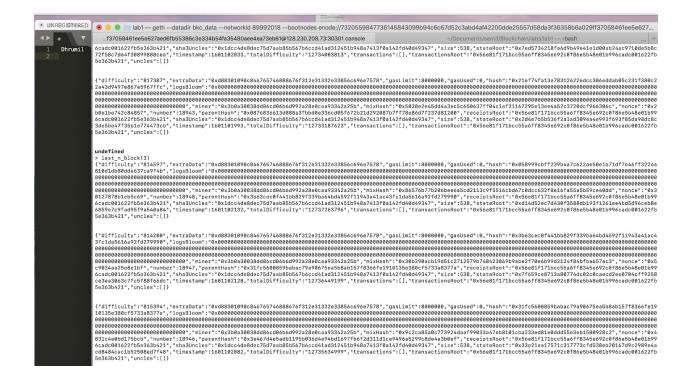
Below is the script that I have used to accomplish this task. In last\_n\_block i have used for loop to iterate and get the (current-i)th block where current block is web3.eth.blockNumber . "get\_latest\_transcation" method iterates from the latest block till the transaction count of the block is non zero . Once we find the block number and transaction count we can use the getTransactionFromBlock method to print the transaction.

### Script:

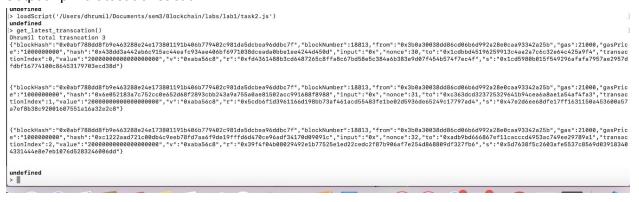
```
function last_n_block(n){
     var latest_block = web3.eth.blockNumber;
     for (var i=0; i < n; i++) {
        console.log(JSON.stringify(web3.eth.getBlock(latest_block - i)));
        console.log("\n");
     }
}
function get_latest_transcation(){
     var latest_block = web3.eth.blockNumber;
     var current = 0;</pre>
```

### Output: Print last 3 block





### Output: print latest transaction



# Task 3)

In this task we have submitted the transaction. After that we have used the "getTranscation"method to find out the block number this transaction is included in. We then check the latest block which is included in the block chain. As we can see from the screen shot this transaction is included in the blockchain.

