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BE COMPS A2

**BLOCKCHAIN TECHNOLOGIES**

EXPERIMENT - 3

### **AIM**: Create a private blockchain using Go-Ethereum and do transactions.

### **THEORY**:

Blockchain is a chain of blocks that contains all information about all the transactions that take place in a network in an encrypted form by using public and private keys.

Blockchain technology can strengthen the basic services that are essential in trade finance. The blockchain model works on a decentralized, digitalized, and distributed ledger model. Because of these properties, this is more robust and secure than the proprietary, centralized which are currently used in the trading system.

In the simplest of terms, a blockchain is just a new form of a decentralized database.

**What is Ethereum?**

Ethereum is a decentralized open-source blockchain system that features its own cryptocurrency which is called ether(ETH). It is a platform that can be used for various Dapps which can be deployed by using Smart Contracts.

**Why Build a Private Blockchain Network?**

* In an Ethereum network if the nodes are not connected to the main network then it is known as a Private Ethereum Network.
* Only the nodes with the right permissions will be able to access this Blockchain.
* Privacy – Don’t want to key data on a public network that’s why enterprises build a private network.
* To test the smart contracts and to develop smart contracts.

CODE:

| geth attach \\.\pipe\geth.ipc > personal.newAccount() > miner.start() > eth.getBalance("AccountID") |
| --- |

OUTPUT:

| Windows PowerShell Copyright (C) Microsoft Corporation. All rights reserved.  Try the new cross-platform PowerShell https://aka.ms/pscore6  PS C:\Users\JARVIS> geth attach \\.\pipe\geth.ipc Welcome to the Geth JavaScript console!  instance: Geth/v1.10.25-stable-69568c55/windows-amd64/go1.18.5 at block: 0 (Thu Jan 01 1970 05:30:00 GMT+0530 (IST))  datadir: C:\Users\JARVIS\MyNetwork\MyPrivateChain  modules: admin:1.0 debug:1.0 engine:1.0 eth:1.0 ethash:1.0 miner:1.0 net:1.0 personal:1.0 rpc:1.0 txpool:1.0 web3:1.0  To exit, press ctrl-d or type exit > personal.newAccount() Passphrase: Repeat passphrase: "0x8349c267c9851d3c5ea356b05888c1842a152321" > eth.getBalance("0x8349c267c9851d3c5ea356b05888c1842a152321")  0 > miner.start() null > eth.getBalance("0x8349c267c9851d3c5ea356b05888c1842a152321") 0 > eth.getBalance("0x8349c267c9851d3c5ea356b05888c1842a152321") 0 > eth.getBalance("0x8349c267c9851d3c5ea356b05888c1842a152321") 0 > eth.getBalance("0x8349c267c9851d3c5ea356b05888c1842a152321") 0 > eth.getBalance("0x8349c267c9851d3c5ea356b05888c1842a152321") 0 > eth.getBalance("0x8349c267c9851d3c5ea356b05888c1842a152321") 0 > eth.getBalance("0x8349c267c9851d3c5ea356b05888c1842a152321") 10000000000000000000 > eth.getBalance("0x8349c267c9851d3c5ea356b05888c1842a152321") 2.24e+21 > eth.getBalance("0x8349c267c9851d3c5ea356b05888c1842a152321") 7.145e+21 |
| --- |

>

CODE:

| geth --datadir C:\Users\JARVIS\MyNetwork\MyPrivateChain --networkid 8080 |
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OUTPUT:

| PS C:\Users\JARVIS\MyNetwork> geth --datadir C:\Users\JARVIS\MyNetwork\MyPrivateChain --networkid 8080 INFO [10-06|13:24:23.757] Maximum peer count ETH=50 LES=0 total=50 INFO [10-06|13:24:23.767] Set global gas cap cap=50,000,000 INFO [10-06|13:24:23.774] Allocated trie memory caches clean=154.00MiB dirty=256.00MiB INFO [10-06|13:24:23.778] Allocated cache and file handles database=C:\Users\JARVIS\MyNetwork\MyPrivateChain\geth\chaindata cache=512.00MiB handles=8192 INFO [10-06|13:24:23.834] Opened ancient database database=C:\Users\JARVIS\MyNetwork\MyPrivateChain\geth\chaindata\ancient/chain readonly=false INFO [10-06|13:24:23.845] INFO [10-06|13:24:23.846] --------------------------------------------------------------------------------------------------------------------------------------------------------- INFO [10-06|13:24:23.855] Chain ID: 987 (unknown) INFO [10-06|13:24:23.858] Consensus: unknown INFO [10-06|13:24:23.861] INFO [10-06|13:24:24.010] The Merge is not yet available for this network! INFO [10-06|13:24:24.018] - Hard-fork specification: https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/paris.md INFO [10-06|13:24:24.027] --------------------------------------------------------------------------------------------------------------------------------------------------------- INFO [10-06|13:24:24.039] INFO [10-06|13:24:24.052] Disk storage enabled for ethash caches dir=C:\Users\JARVIS\MyNetwork\MyPrivateChain\geth\ethash count=3 INFO [10-06|13:24:24.060] Disk storage enabled for ethash DAGs dir=C:\Users\JARVIS\AppData\Local\Ethash count=2 INFO [10-06|13:24:24.069] Initialising Ethereum protocol network=8080 dbversion=8 INFO [10-06|13:24:24.076] Loaded most recent local header number=1711 hash=946de6..63626b td=349,259,572 age=0 INFO [10-06|13:24:24.084] Loaded most recent local full block number=1711 hash=946de6..63626b td=349,259,572 age=0 INFO [10-06|13:24:24.090] Loaded most recent local fast block number=1711  . . . sealhash=5c75a6..0441d2 uncles=0 txs=0 gas=0 fees=0 elapsed=0s INFO [10-06|13:24:42.174] Commit new sealing work number=1712 sealhash=5c75a6..0441d2 uncles=0 txs=0 gas=0 fees=0 elapsed=14.137ms INFO [10-06|13:24:42.350] Successfully sealed new block number=1712 sealhash=5c75a6..0441d2 hash=89ccb1..e84635 elapsed=189.474ms INFO [10-06|13:24:42.397] 🔨 mined potential block number=1712 hash=89ccb1..e84635 INFO [10-06|13:24:42.350] Commit new sealing work number=1713 sealhash=6849ae..0fa6da uncles=0 txs=0 gas=0 fees=0 elapsed="515.7µs" INFO [10-06|13:24:42.420] Commit new sealing work number=1713 sealhash=6849ae..0fa6da uncles=0 txs=0 gas=0 fees=0 elapsed=70.779ms INFO [10-06|13:24:42.628] Successfully sealed new block number=1713 sealhash=6849ae..0fa6da hash=4bac03..11be6f elapsed=277.553ms INFO [10-06|13:24:42.639] 🔨 mined potential block number=1713 hash=4bac03..11be6f INFO [10-06|13:24:42.628] Commit new sealing work number=1714 sealhash=b62041..44277d uncles=0 txs=0 gas=0 fees=0 elapsed="520.3µs" INFO [10-06|13:24:42.700] Commit new sealing work number=1714 sealhash=b62041..44277d uncles=0 txs=0 gas=0 fees=0 elapsed=72.368ms INFO [10-06|13:24:43.377] Successfully sealed new block number=1714 sealhash=b62041..44277d hash=3b4e4d..770552 elapsed=749.211ms INFO [10-06|13:24:43.413] 🔨 mined potential block number=1714 hash=3b4e4d..770552 INFO [10-06|13:24:45.149] Commit new sealing work number=1719 sealhash=76cf0e..68d28a uncles=0 txs=0 gas=0 fees=0 elapsed=0s INFO [10-06|13:24:45.320] Commit new sealing work number=1719 sealhash=76cf0e..68d28a uncles=0 txs=0 gas=0 fees=0 elapsed=170.856ms INFO [10-06|13:24:46.059] Successfully sealed new block number=1719 sealhash=76cf0e..68d28a hash=01211a..0bdf6b elapsed=909.991ms INFO [10-06|13:24:46.059] 🔗 block reached canonical chain number=1712 hash=89ccb1..e84635 INFO [10-06|13:24:46.141] Commit new sealing work number=1720 sealhash=235cfd..9ce6da uncles=0 txs=0 gas=0 fees=0 elapsed=82.196ms INFO [10-06|13:24:46.148] 🔨 mined potential block number=1719 hash=01211a..0bdf6b INFO [10-06|13:24:46.201] Commit new sealing work number=1720 sealhash=235cfd..9ce6da uncles=0 txs=0 gas=0 fees=0 elapsed=141.705ms INFO [10-06|13:24:46.404] Successfully sealed new block number=1720 sealhash=235cfd..9ce6da hash=4cd006..8ad3ea elapsed=345.457ms INFO [10-06|13:24:46.405] 🔗 block reached canonical chain number=1713 hash=4bac03..11be6f INFO [10-06|13:24:46.427] Commit new sealing work number=1721 sealhash=7716ba..7b8f50 uncles=0 txs=0 gas=0 fees=0 elapsed=22.441ms INFO [10-06|13:24:46.434] 🔨 mined potential block number=1720 hash=4cd006..8ad3ea INFO [10-06|13:24:46.461] Commit new sealing work number=1721 sealhash=7716ba..7b8f50 uncles=0 txs=0 gas=0 fees=0 elapsed=56.785ms INFO [10-06|13:24:46.461] Successfully sealed new block number=1721 sealhash=7716ba..7b8f50 hash=bc8dac..388632 elapsed=56.264ms INFO [10-06|13:24:46.471] 🔗 block reached canonical chain number=1714 hash=3b4e4d..770552 INFO [10-06|13:24:46.503] Commit new sealing work number=1722 sealhash=50e7db..99cd45 uncles=0 txs=0 gas=0 fees=0 elapsed=32.257ms INFO [10-06|13:24:46.504] 🔨 mined potential block number=1721 hash=bc8dac..388632 INFO [10-06|13:24:46.554] Commit new sealing work number=1722 sealhash=50e7db..99cd45 uncles=0 txs=0 gas=0 fees=0 elapsed=83.091ms INFO [10-06|13:24:46.555] Successfully sealed new block number=1722 sealhash=50e7db..99cd45 hash=99590d..e2c713 elapsed=83.604ms INFO [10-06|13:24:46.563] 🔗 block reached canonical chain number=1715 hash=f6b5e0..c4be0e INFO [10-06|13:24:46.625] Commit new sealing work number=1723 sealhash=56e066..d37ae7 uncles=0 txs=0 gas=0 fees=0 elapsed=62.056ms INFO [10-06|13:24:46.632] 🔨 mined potential block number=1722 hash=99590d..e2c713 INFO [10-06|13:24:47.095] Commit new sealing work number=1725 sealhash=7f103a..f0b8a5 uncles=0 txs=0 gas=0 fees=0 elapsed=281.047ms INFO [10-06|13:24:47.140] Commit new sealing work number=1725 sealhash=7f103a..f0b8a5 uncles=0 txs=0 gas=0 fees=0 elapsed=326.700ms INFO [10-06|13:24:48.351] Successfully sealed new block number=1725 sealhash=7f103a..f0b8a5 hash=bcc4c7..9e7e83 elapsed=1.537s INFO [10-06|13:24:48.351] 🔗 block reached canonical chain number=1718 hash=764605..91b0ae INFO [10-06|13:24:48.373] Commit new sealing work number=1726 sealhash=49927e..c13d99 uncles=0 txs=0 gas=0 fees=0 elapsed=21.276ms INFO [10-06|13:24:48.373] 🔨 mined potential block number=1725 hash=bcc4c7..9e7e83 INFO [10-06|13:24:48.446] Commit new sealing work number=1726 sealhash=49927e..c13d99 uncles=0 txs=0 gas=0 fees=0 elapsed=94.910ms INFO [10-06|13:24:48.485] Successfully sealed new block number=1726 sealhash=49927e..c13d99 hash=0cfec8..c44807 elapsed=133.607ms INFO [10-06|13:24:48.485] 🔗 block reached canonical chain number=1719 hash=01211a..0bdf6b INFO [10-06|13:24:48.527] Commit new sealing work number=1727 sealhash=69d7c4..46eda8 uncles=0 txs=0 gas=0 fees=0 elapsed=41.71ms INFO [10-06|13:24:48.536] 🔨 mined potential block number=1726 hash=0cfec8..c44807 INFO [10-06|13:24:48.557] Commit new sealing work number=1727 sealhash=69d7c4..46eda8 uncles=0 txs=0 gas=0 fees=0 elapsed=71.798ms INFO [10-06|13:24:49.570] Looking for peers peercount=1 tried=112 static=0 INFO [10-06|13:25:09.786] Looking for peers peercount=0 tried=77 static=0 |
| --- |

CODE:

| geth attach \\.\pipe\geth.ipc > eth.getAccounts > eth.getBalance(eth.accounts[0]) > personal.newAccount() > personal.unlockAccount(eth.accounts[1]) > eth.sendTransaction({from: eth.accounts[0], to: eth.accounts[1], value: 5000000000000000000000}) > eth.getTransaction( "0x8c7bd56a3cfc077b7371ca02db868c4a98906d35c5923cddd9bf6832f9df1f0b ") > miner.start(1) |
| --- |

OUTPUT:

| C:\Users\JARVIS>geth attach \\.\pipe\geth.ipc Welcome to the Geth JavaScript console!  instance: Geth/v1.10.25-stable-69568c55/windows-amd64/go1.18.5 coinbase: 0x8349c267c9851d3c5ea356b05888c1842a152321 at block: 1726 (Thu Oct 06 2022 13:43:05 GMT+0530 (IST))  datadir: C:\Users\JARVIS\MyNetwork\MyPrivateChain  modules: admin:1.0 debug:1.0 engine:1.0 eth:1.0 ethash:1.0 miner:1.0 net:1.0 personal:1.0 rpc:1.0 txpool:1.0 web3:1.0  To exit, press ctrl-d or type exit > > eth.getAccounts function(callback) > eth.getAccounts() undefined > eth.accounts ["0x8349c267c9851d3c5ea356b05888c1842a152321"] > eth.getBalance(eth.accounts^C > > > eth.accounts(eth.accounts["0x8349c267c9851d3c5ea356b05888c1842a152321"]) TypeError: Not a function: 0x8349c267c9851d3c5ea356b05888c1842a152321  at <eval>:1:13(7)  > eth.getBalance(eth.accounts[0]) 8.63e+21 > personal.newAccount() Passphrase: Repeat passphrase: "0x01cc5b0baf74d0b1581281c1b09433789af809a9" > > eth.accounts ["0x8349c267c9851d3c5ea356b05888c1842a152321", "0x01cc5b0baf74d0b1581281c1b09433789af809a9"] > eth.getBalance(eth.accounts[1]) 0 > personal.unlockAccount function github.com/ethereum/go-ethereum/internal/jsre.MakeCallback.func1() > personal.unlockAccount(eth.accounts[0]) Unlock account 0x8349c267c9851d3c5ea356b05888c1842a152321 Passphrase: true > > personal.unlockAccount(eth.accounts[1]) Unlock account 0x01cc5b0baf74d0b1581281c1b09433789af809a9 Passphrase: true > eth.sendTransaction({from: eth.accounts[0], to: eth.accounts[1], value: 5000000000000000000000}) "0x8c7bd56a3cfc077b7371ca02db868c4a98906d35c5923cddd9bf6832f9df1f0b" > eth.getTransaction("0x8c7bd56a3cfc077b7371ca02db868c4a98906d35c5923cddd9bf6832f9df1f0b") {  blockHash: null,  blockNumber: null,  chainId: "0x3db",  from: "0x8349c267c9851d3c5ea356b05888c1842a152321",  gas: 21000,  gasPrice: 1000000000,  hash: "0x8c7bd56a3cfc077b7371ca02db868c4a98906d35c5923cddd9bf6832f9df1f0b",  input: "0x",  nonce: 0,  r: "0x6b71fb1658cd2208d2e31af2b54425f3750922d98b733d24deca72c12fbd00c1",  s: "0x4c75a062d2e054f11f5b51910133d2ef366e2f19b70609ec00abeab120ab4879",  to: "0x01cc5b0baf74d0b1581281c1b09433789af809a9",  transactionIndex: null,  type: "0x0",  v: "0x7da",  value: 5e+21 } > miner.start(1) null > eth.getTransaction("0x8c7bd56a3cfc077b7371ca02db868c4a98906d35c5923cddd9bf6832f9df1f0b") {  blockHash: null,  blockNumber: null,  chainId: "0x3db",  from: "0x8349c267c9851d3c5ea356b05888c1842a152321",  gas: 21000,  gasPrice: 1000000000,  hash: "0x8c7bd56a3cfc077b7371ca02db868c4a98906d35c5923cddd9bf6832f9df1f0b",  input: "0x",  nonce: 0,  r: "0x6b71fb1658cd2208d2e31af2b54425f3750922d98b733d24deca72c12fbd00c1",  s: "0x4c75a062d2e054f11f5b51910133d2ef366e2f19b70609ec00abeab120ab4879",  to: "0x01cc5b0baf74d0b1581281c1b09433789af809a9",  transactionIndex: null,  type: "0x0",  v: "0x7da",  value: 5e+21 } > eth.getTransaction("0x8c7bd56a3cfc077b7371ca02db868c4a98906d35c5923cddd9bf6832f9df1f0b") {  blockHash: "0x95bf213e3f3745f8c4454608560bbeed5b887eeb0eb8edab35e0c9c486fcf7b0",  blockNumber: 1727,  chainId: "0x3db",  from: "0x8349c267c9851d3c5ea356b05888c1842a152321",  gas: 21000,  gasPrice: 1000000000,  hash: "0x8c7bd56a3cfc077b7371ca02db868c4a98906d35c5923cddd9bf6832f9df1f0b",  input: "0x",  nonce: 0,  r: "0x6b71fb1658cd2208d2e31af2b54425f3750922d98b733d24deca72c12fbd00c1",  s: "0x4c75a062d2e054f11f5b51910133d2ef366e2f19b70609ec00abeab120ab4879",  to: "0x01cc5b0baf74d0b1581281c1b09433789af809a9",  transactionIndex: 0,  type: "0x0",  v: "0x7da",  value: 5e+21 } > eth.getTransaction("0x8c7bd56a3cfc077b7371ca02db868c4a98906d35c5923cddd9bf6832f9df1f0b""0x8c7bd56a3cfc077b7371ca02db868c4a98906d35c5923cddd9bf6832f9df1f0b" > eth.getBalance(eth.accounts[0])  3.64e+21 > eth.getBalance(eth.accounts[1]) 5e+21 > |
| --- |

CODE:

| geth --datadir C:\Users\JARVIS\MyNetwork\MyPrivateChain init C:\Users\JARVIS\MyNetwork\genesis.json  geth --datadir C:\Users\JARVIS\MyNetwork\MyPrivateChain -networkid 8080 |
| --- |

OUTPUT:

| C:\Users\JARVIS\MyNetwork>geth --datadir C:\Users\JARVIS\MyNetwork\MyPrivateChain init C:\Users\JARVIS\MyNetwork\genesis.json INFO [10-07|08:14:23.568] Maximum peer count ETH=50 LES=0 total=50 INFO [10-07|08:14:23.677] Set global gas cap cap=50,000,000 INFO [10-07|08:14:23.719] Allocated cache and file handles database=C:\Users\JARVIS\MyNetwork\MyPrivateChain\geth\chaindata cache=16.00MiB handles=16 INFO [10-07|08:14:23.913] Opened ancient database database=C:\Users\JARVIS\MyNetwork\MyPrivateChain\geth\chaindata\ancient/chain readonly=false INFO [10-07|08:14:24.002] Successfully wrote genesis state database=chaindata hash=d1a12d..4c8725 INFO [10-07|08:14:24.053] Allocated cache and file handles database=C:\Users\JARVIS\MyNetwork\MyPrivateChain\geth\lightchaindata cache=16.00MiB handles=16 INFO [10-07|08:14:24.213] Opened ancient database database=C:\Users\JARVIS\MyNetwork\MyPrivateChain\geth\lightchaindata\ancient/chain readonly=false INFO [10-07|08:14:24.294] Successfully wrote genesis state database=lightchaindata hash=d1a12d..4c8725  C:\Users\JARVIS\MyNetwork>geth --datadir C:\Users\JARVIS\MyNetwork\MyPrivateChain -networkid 8080 INFO [10-07|08:16:49.906] Maximum peer count ETH=50 LES=0 total=50 INFO [10-07|08:16:49.957] Set global gas cap cap=50,000,000 INFO [10-07|08:16:49.993] Allocated trie memory caches clean=154.00MiB dirty=256.00MiB INFO [10-07|08:16:50.033] Allocated cache and file handles database=C:\Users\JARVIS\MyNetwork\MyPrivateChain\geth\chaindata cache=512.00MiB handles=8192 INFO [10-07|08:16:50.165] Opened ancient database database=C:\Users\JARVIS\MyNetwork\MyPrivateChain\geth\chaindata\ancient/chain readonly=false INFO [10-07|08:16:50.237] INFO [10-07|08:16:50.249] --------------------------------------------------------------------------------------------------------------------------------------------------------- INFO [10-07|08:16:50.321] Chain ID: 987 (unknown) INFO [10-07|08:16:50.345] Consensus: unknown INFO [10-07|08:16:50.365] INFO [10-07|08:16:50.380] Pre-Merge hard forks: INFO [10-07|08:16:50.402] - Homestead: 0 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/homestead.md) INFO [10-07|08:16:50.483] - Tangerine Whistle (EIP 150): 0 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/tangerine-whistle.md) INFO [10-07|08:16:50.563] - Spurious Dragon/1 (EIP 155): 0 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/spurious-dragon.md) INFO [10-07|08:16:50.635] - Spurious Dragon/2 (EIP 158): 0 (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/spurious-dragon.md) INFO [10-07|08:16:50.713] - Byzantium: <nil> (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/byzantium.md) INFO [10-07|08:16:50.785] - Constantinople: <nil> (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/constantinople.md) INFO [10-07|08:16:50.860] - Petersburg: <nil> (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/petersburg.md) INFO [10-07|08:16:50.932] - Istanbul: <nil> (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/istanbul.md) INFO [10-07|08:16:50.998] - Berlin: <nil> (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/berlin.md) INFO [10-07|08:16:51.065] - London: <nil> (https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/london.md) INFO [10-07|08:16:51.125] INFO [10-07|08:16:51.138] The Merge is not yet available for this network! INFO [10-07|08:16:51.168] - Hard-fork specification: https://github.com/ethereum/execution-specs/blob/master/network-upgrades/mainnet-upgrades/paris.md INFO [10-07|08:16:51.228] --------------------------------------------------------------------------------------------------------------------------------------------------------- INFO [10-07|08:16:51.301] INFO [10-07|08:16:51.321] Disk storage enabled for ethash caches dir=C:\Users\JARVIS\MyNetwork\MyPrivateChain\geth\ethash count=3 INFO [10-07|08:16:51.376] Disk storage enabled for ethash DAGs dir=C:\Users\JARVIS\AppData\Local\Ethash count=2 INFO [10-07|08:16:51.422] Initialising Ethereum protocol network=8080 dbversion=8 INFO [10-07|08:16:51.470] Loaded most recent local header number=1726 hash=0cfec8..c44807 td=353,785,318 age=18h33m46s INFO [10-07|08:16:51.526] Loaded most recent local full block number=1726 hash=0cfec8..c44807 td=353,785,318 age=18h33m46s INFO [10-07|08:16:51.583] Loaded most recent local fast block number=1726 hash=0cfec8..c44807 td=353,785,318 age=18h33m46s INFO [10-07|08:16:51.669] Loaded local transaction journal transactions=0 dropped=0 INFO [10-07|08:16:51.710] Regenerated local transaction journal transactions=0 accounts=0 WARN [10-07|08:16:51.748] Switch sync mode from snap sync to full sync INFO [10-07|08:16:51.779] Gasprice oracle is ignoring threshold set threshold=2 WARN [10-07|08:16:51.812] Unclean shutdown detected booted=2022-10-06T13:07:07+0530 age=19h9m44s WARN [10-07|08:16:51.857] Engine API enabled protocol=eth WARN [10-07|08:16:51.889] Engine API started but chain not configured for merge yet INFO [10-07|08:16:51.922] Starting peer-to-peer node instance=Geth/v1.10.25-stable-69568c55/windows-amd64/go1.18.5 INFO [10-07|08:16:52.117] New local node record seq=1,665,042,086,033 id=87d8b7d111e02802 ip=127.0.0.1 udp=30303 tcp=30303 INFO [10-07|08:16:52.182] Started P2P networking self=enode://b42ab8836487e2082e2a9cad5889e36c6562b22668d08613790b1aedc7b4702bcab1badaa294fbc31efa103acdc07b12cb2ff0009991dfa2cdf6ff4cdd9c67c4@127.0.0.1:30303 INFO [10-07|08:16:52.189] IPC endpoint opened url=\\.\pipe\geth.ipc INFO [10-07|08:16:52.323] Loaded JWT secret file path=C:\Users\JARVIS\MyNetwork\MyPrivateChain\geth\jwtsecret crc32=0x2ed2ce0e INFO [10-07|08:16:52.392] WebSocket enabled url=ws://127.0.0.1:8551 INFO [10-07|08:16:52.426] HTTP server started endpoint=127.0.0.1:8551 auth=true prefix= cors=localhost vhosts=localhost INFO [10-07|08:17:02.364] Looking for peers peercount=0 tried=0 static=0 INFO [10-07|08:17:13.794] Looking for peers peercount=0 tried=27 static=0 INFO [10-07|08:17:23.491] Etherbase automatically configured address=0x8349C267c9851d3C5ea356B05888C1842a152321 INFO [10-07|08:17:27.195] Looking for peers peercount=0 tried=10 static=0 INFO [10-07|08:17:37.399] Looking for peers peercount=0 tried=0 static=0 INFO [10-07|08:17:51.917] Looking for peers peercount=0 tried=2 static=0 INFO [10-07|08:18:04.061] Looking for peers peercount=0 tried=22 static=0 INFO [10-07|08:18:17.415] Looking for peers peercount=0 tried=0 static=0 INFO [10-07|08:18:32.436] Looking for peers peercount=0 tried=1 static=0 INFO [10-07|08:18:44.924] Looking for peers peercount=0 tried=17 static=0 INFO [10-07|08:19:00.184] Looking for peers peercount=0 tried=0 static=0 INFO [10-07|08:19:12.391] Looking for peers peercount=0 tried=4 static=0 INFO [10-07|08:19:26.147] Looking for peers peercount=0 tried=9 static=0 INFO [10-07|08:19:38.411] Looking for peers peercount=0 tried=0 static=0 INFO [10-07|08:19:49.182] Looking for peers peercount=0 tried=1 static=0 INFO [10-07|08:20:01.079] Your new key was generated address=0x01cc5B0baF74d0B1581281c1B09433789aF809a9 WARN [10-07|08:20:01.116] Please backup your key file! path=C:\Users\JARVIS\MyNetwork\MyPrivateChain\keystore\UTC--2022-10-07T02-49-56.934174100Z--01cc5b0baf74d0b1581281c1b09433789af809a9 WARN [10-07|08:20:01.184] Please remember your password! INFO [10-07|08:20:04.253] Looking for peers peercount=0 tried=2 static=0 INFO [10-07|08:20:16.508] Looking for peers peercount=0 tried=0 static=0 INFO [10-07|08:23:10.140] Setting new local account address=0x8349C267c9851d3C5ea356B05888C1842a152321 INFO [10-07|08:23:10.171] Submitted transaction hash=0x8c7bd56a3cfc077b7371ca02db868c4a98906d35c5923cddd9bf6832f9df1f0b from=0x8349C267c9851d3C5ea356B05888C1842a152321 nonce=0 recipient=0x01cc5B0baF74d0B1581281c1B09433789aF809a9 value=5,000,000,000,000,000,000,000 INFO [10-07|08:24:43.532] Updated mining threads threads=1 INFO [10-07|08:24:43.552] Transaction pool price threshold updated price=1,000,000,000 INFO [10-07|08:24:43.569] Commit new sealing work number=1727 sealhash=c5c235..51bd95 uncles=0 txs=0 gas=0 fees=0 elapsed=3.790ms INFO [10-07|08:24:43.635] Commit new sealing work number=1727 sealhash=348137..7d7272 uncles=0 txs=1 gas=21000 fees=2.1e-05 elapsed=69.415ms INFO [10-07|08:25:05.685] Successfully sealed new block number=1727 sealhash=348137..7d7272 hash=95bf21..fcf7b0 elapsed=22.049s INFO [10-07|08:25:05.686] Commit new sealing work number=1728 sealhash=60d338..47c32c uncles=0 txs=0 gas=0 fees=0 elapsed=0s INFO [10-07|08:25:05.717] 🔨 mined potential block number=1727 hash=95bf21..fcf7b0 INFO [10-07|08:26:14.325] Commit new sealing work number=1734 sealhash=92c16c..fe267f uncles=0 txs=0 gas=0 fees=0 elapsed=170.753ms INFO [10-07|08:26:17.952] Successfully sealed new block number=1734 sealhash=92c16c..fe267f hash=ee19c7..01f4af elapsed=3.796s INFO [10-07|08:26:17.953] 🔗 block reached canonical chain number=1727 hash=95bf21..fcf7b0 INFO [10-07|08:26:18.053] 🔨 mined potential block number=1734 hash=ee19c7..01f4af INFO [10-07|08:26:18.053] Commit new sealing work number=1735 sealhash=09bff9..d8276a uncles=0 txs=0 gas=0 fees=0 elapsed=100.339ms INFO [10-07|08:26:18.177] Commit new sealing work number=1735 sealhash=09bff9..d8276a uncles=0 txs=0 gas=0 fees=0 elapsed=224.682ms INFO [10-07|08:26:19.056] Successfully sealed new block number=1735 sealhash=09bff9..d8276a hash=571c58..9b913b elapsed=1.102s INFO [10-07|08:26:19.058] 🔗 block reached canonical chain number=1728 hash=ff772a..35696e INFO [10-07|08:26:19.145] 🔨 mined potential block number=1735 hash=571c58..9b913b INFO [10-07|08:26:19.145] Commit new sealing work number=1736 sealhash=8ae9f0..772052 uncles=0 txs=0 gas=0 fees=0 elapsed=89.346ms INFO [10-07|08:26:19.265] Commit new sealing work number=1736 sealhash=8ae9f0..772052 uncles=0 txs=0 gas=0 fees=0 elapsed=209.250ms INFO [10-07|08:26:26.158] Successfully sealed new block number=1736 sealhash=8ae9f0..772052 hash=09fc74..5ebbfd elapsed=7.101s INFO [10-07|08:26:26.159] 🔗 block reached canonical chain number=1729 hash=a323db..60440f INFO [10-07|08:26:26.271] Commit new sealing work number=1737 sealhash=0bca2f..f5e349 uncles=0 txs=0 gas=0 fees=0 elapsed=112.750ms INFO [10-07|08:26:26.271] 🔨 mined potential block number=1736 hash=09fc74..5ebbfd INFO [10-07|08:26:26.389] Commit new sealing work number=1737 sealhash=0bca2f..f5e349 uncles=0 txs=0 gas=0 fees=0 elapsed=230.774ms |
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### CONCLUSION:

In this experiment, we learnt to create our own private blockchain using go-ethereum (geth) and transferred our mined coins between accounts.