Initial setup

```
npm init -y

npm install --save-dev hardhat

npx hardhat init

npx hardhat --version
```

Read and test default lock contract

Copy and throw the code to remix ide.

```
contracts/Lock.sol
```

https://www.epochconverter.com/

```
    //Add the following function to the lock contract
    function getCurrentTime() public view returns(uint256){
        uint256 currentTime = block.timestamp;
        return currentTime;
    }
```

Read and run test file

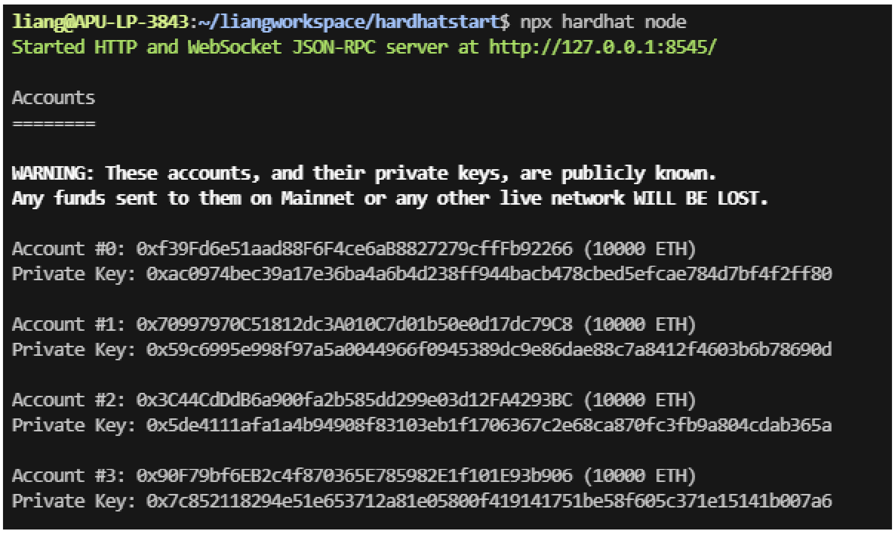
```
/test/Lock.ts



//Command to run the test file
npx hardhat test
REPORT_GAS=true npx hardhat test
```

Run hardhat blockchain

```
//Command
npx hardhat node
```



```
liang@APU-LP-3843:~/liangworkspace/hardhatstart$ npx hardhat node
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: 0x90F79bf6EB2c4f870365E785982E1f101E93b906 (10000 ETH)
Private Key: 0x7c852118294e51e653712a81e05800f419141751be58f605c371e15141b007a6
```

Deploy smart contract

```
//Add the following code to hardhat configuration file -- hardhat.config.ts

  networks: {
    localhost: {
      chainId: 31337,
      url: 'http://127.0.0.1:8545',
    }
  }


//Command to deploy
npx hardhat ignition deploy ./ignition/modules/Lock.ts --reset --network localhost
```

Questions

1. How do I get the chainId? (Google search or hardhat documentation)
2. How do I get the url? (Over the console)

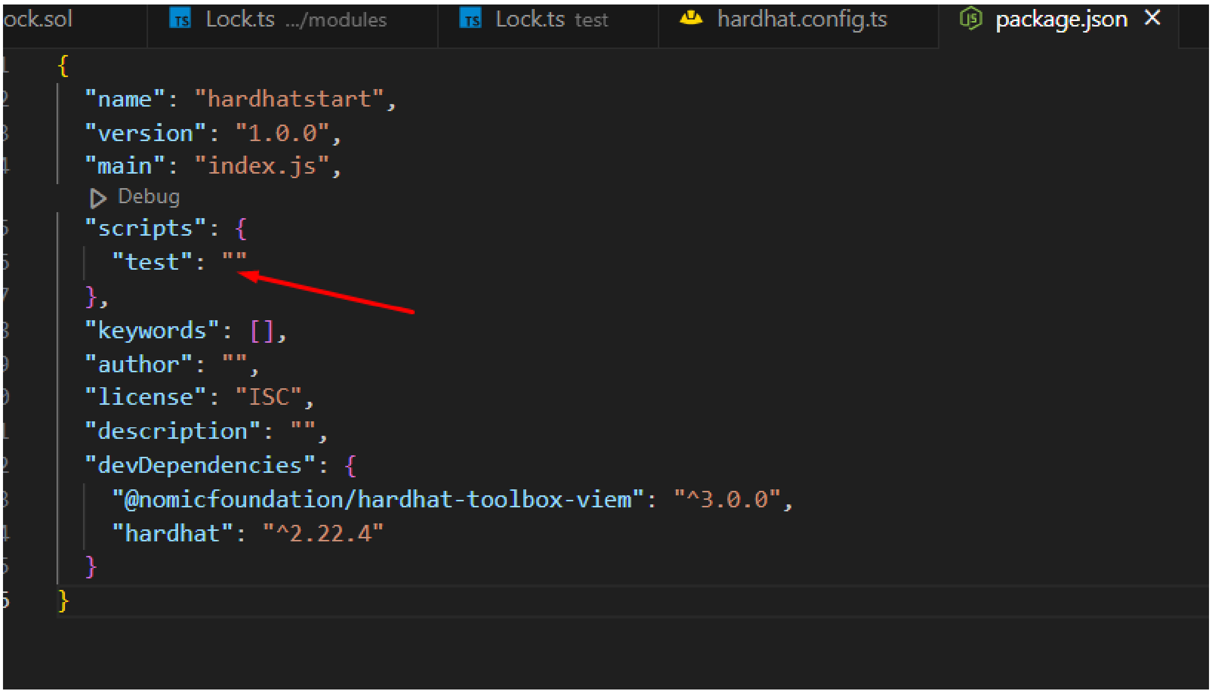
Automate command in short form

```
//Modify package.json scripts section

npm run deploy
npx hardhat ignition deploy ./ignition/modules/Lock.ts --reset --network localhost

npx hardhat test
REPORT_GAS=true npx hardhat test

npm run compile
npx hardhat compile
```

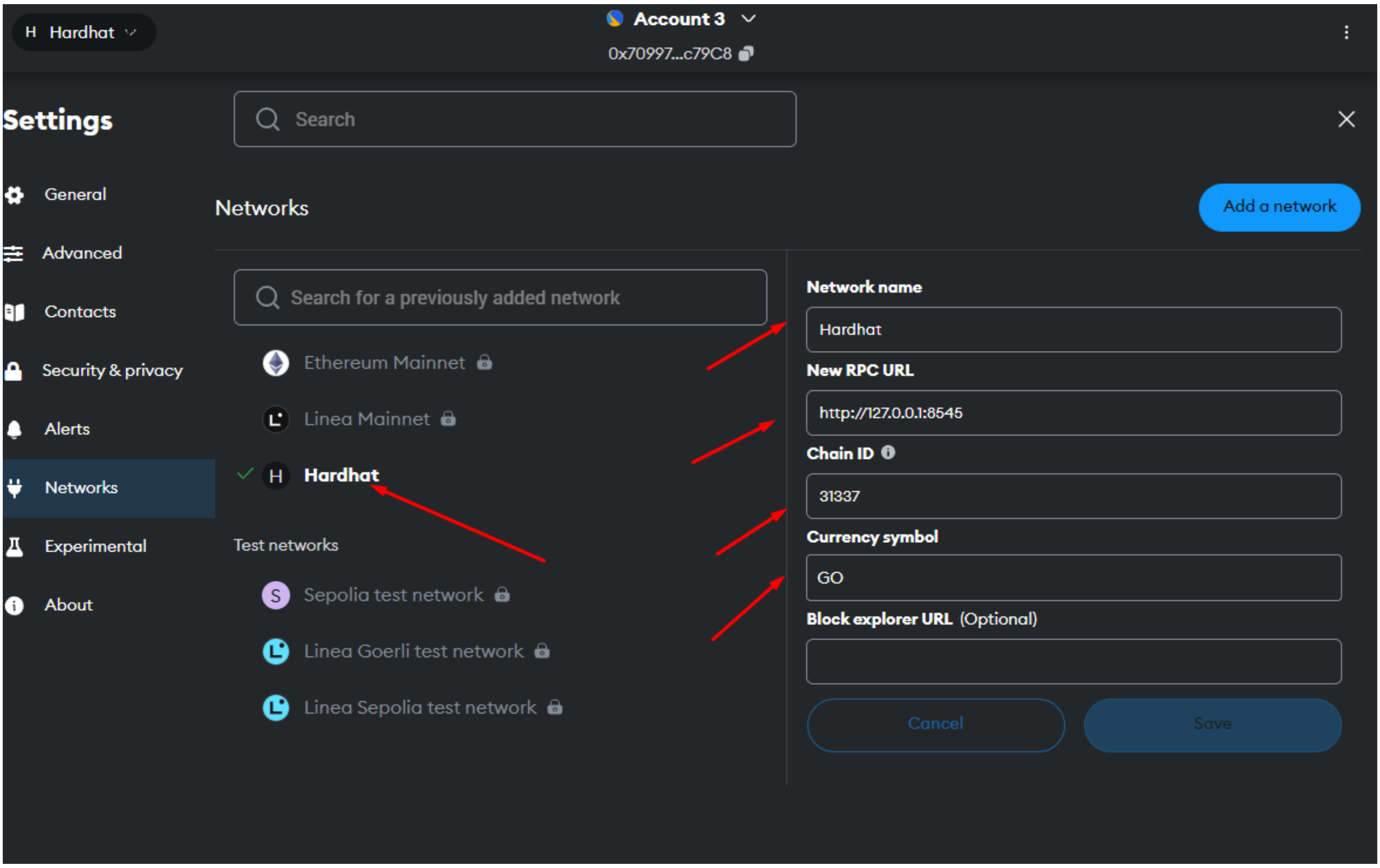


```
{
  "name": "hardhatstart",
  "version": "1.0.0",
  "main": "index.js",
  "scripts": {
    "test": ""
  },
  "keywords": [],
  "author": "",
  "license": "ISC",
  "description": "",
  "devDependencies": {
    "@nomicfoundation/hardhat-toolbox-viem": "^3.0.0",
    "hardhat": "^2.22.4"
  }
}
```

```
//Final result
{
  "name": "hardhatstart",
  "version": "1.0.0",
  "main": "index.js",
  "scripts": {
    "deploy": "npx hardhat ignition deploy ./ignition/modules/Lock.ts --reset --network localhost",
    "test": "REPORT_GAS=true npx hardhat test",
    "compile": "npx hardhat compile"
  },
  "keywords": [],
  "author": "",
  "license": "ISC",
  "description": "",
  "devDependencies": {
    "@nomicfoundation/hardhat-toolbox-viem": "^3.0.0",
    "hardhat": "^2.22.4"
  }
}
```

Connect metamask to hardhat

Add Network



Network name: Hardhat

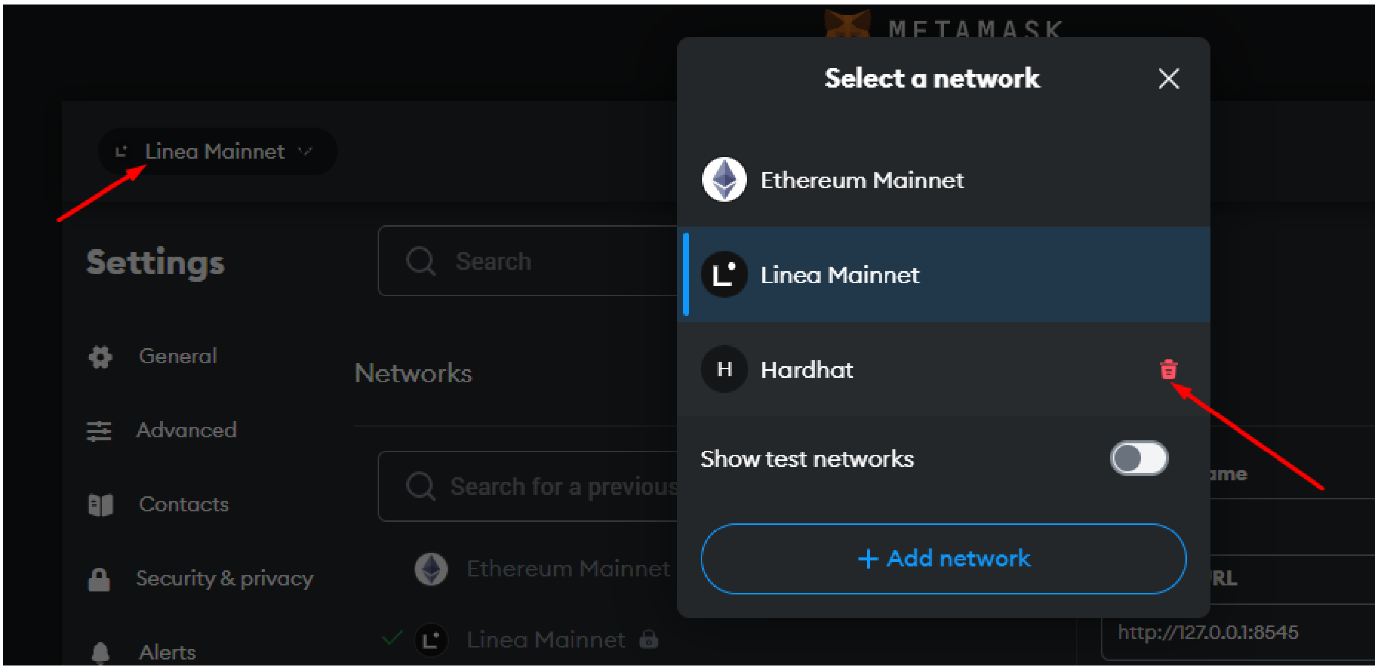
New RPC URL: http://127.0.0.1:8545

Chain ID: 31337

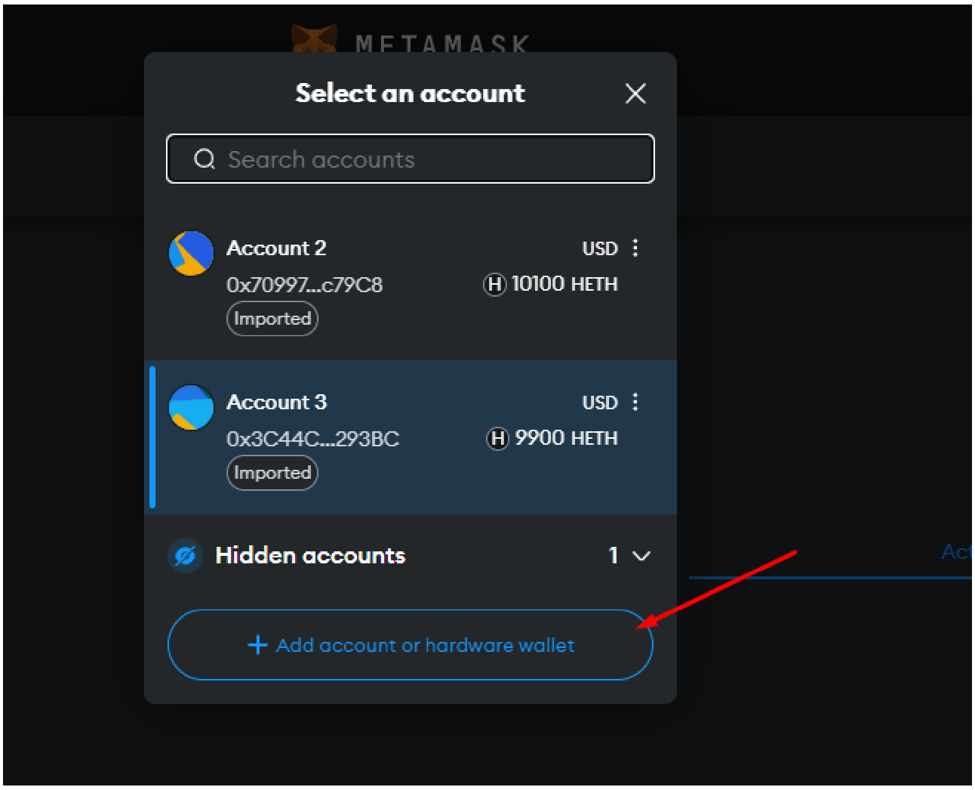
Currency symbol: GO

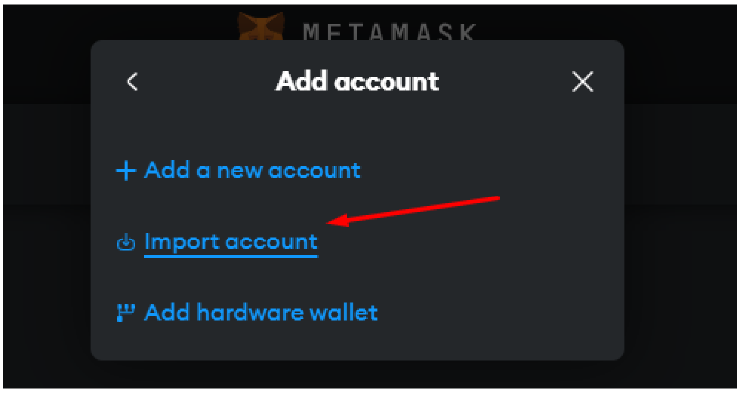
Block explorer URL (Optional):

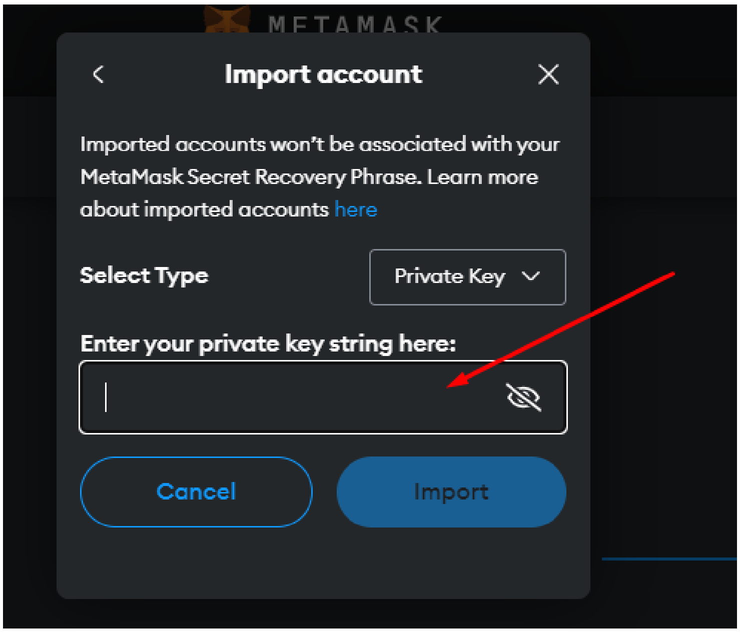
Delete network



Add Account





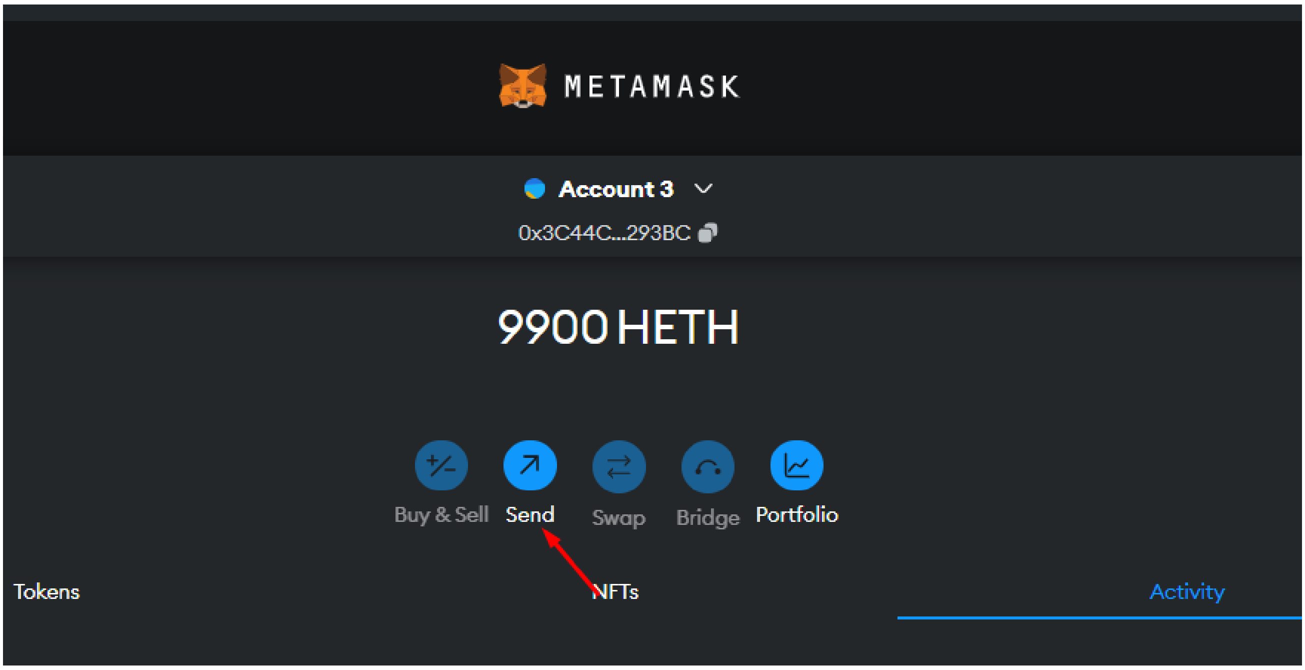


Imported accounts won't be associated with your MetaMask Secret Recovery Phrase. Learn more about imported accounts here

Select Type: Private Key

Enter your private key string here:

Test Sending ETH from account 3 to account 2



Exercises

1. Try to setup hardhat from scratch again by yourself.
2. Copy any previous contract from the Remix Ide and deploy it to blockchain using Hardhat framework.