

Read Me

1. Navigate to a directory on your local computer, example **C:\temp**

2. Clone to project

```
C:\temp> git clone https://github.com/piauming/nft-demo.git
```

3. Navigate to the backend directory

```
C:\temp> cd nft-demo/contract
```

4. Install the dependencies for backend

```
C:\temp\backend> npm install
```

5. To see all the accounts

```
C:\temp\backend> npx hardhat accounts
```

6. The smart contract to mint NFT is located at **C:\temp\nft-demo\contract\contracts\MyNFT.sol**. To compile the smart contract.
C:\temp\backend> npx hardhat compile

(Note: The MyNFT.sol file can be tested at <https://remix.ethereum.org>).

7. I have included a simple test. The test file is located at **C:\temp\backend\test\MyNFT.js**. I have a flag `isMintEnabled` to allow/disallow minting. The test does the following:

- sets `isMintEnabled` to true.
- Provide a `tokenUri` to mintNFT.
- `tokenURI` for the `tokenId` is equals to provided `tokenUri`.

You can run the test by:

```
C:\temp\backend> npx hardhat test
```

7. Start Hardhat Network (acting as the development blockchain environment)

```
C:\temp\backend> npx hardhat node
```

Hardhat will display:

Started HTTP and WebSocket JSON-RPC server at <http://127.0.0.1:8545>

And also list some accounts and its private keys. Later when setting up MetaMask, we will use the first private key as the first account

Account #0:

0xf39Fd6e51aad88F6F4ce6aB8827279cffFb92266 (10000 ETH)

Private Key:

0xac0974bec39a17e36ba4a6b4d238ff944bacb478cbcd5efcae784d
7bf4f2ff80

Account #1:

0x70997970C51812dc3A010C7d01b50e0d17dc79C8 (10000 ETH)

Private Key:

0x59c6995e998f97a5a0044966f0945389dc9e86dae88c7a8412f460
3b6b78690d

Account #2:

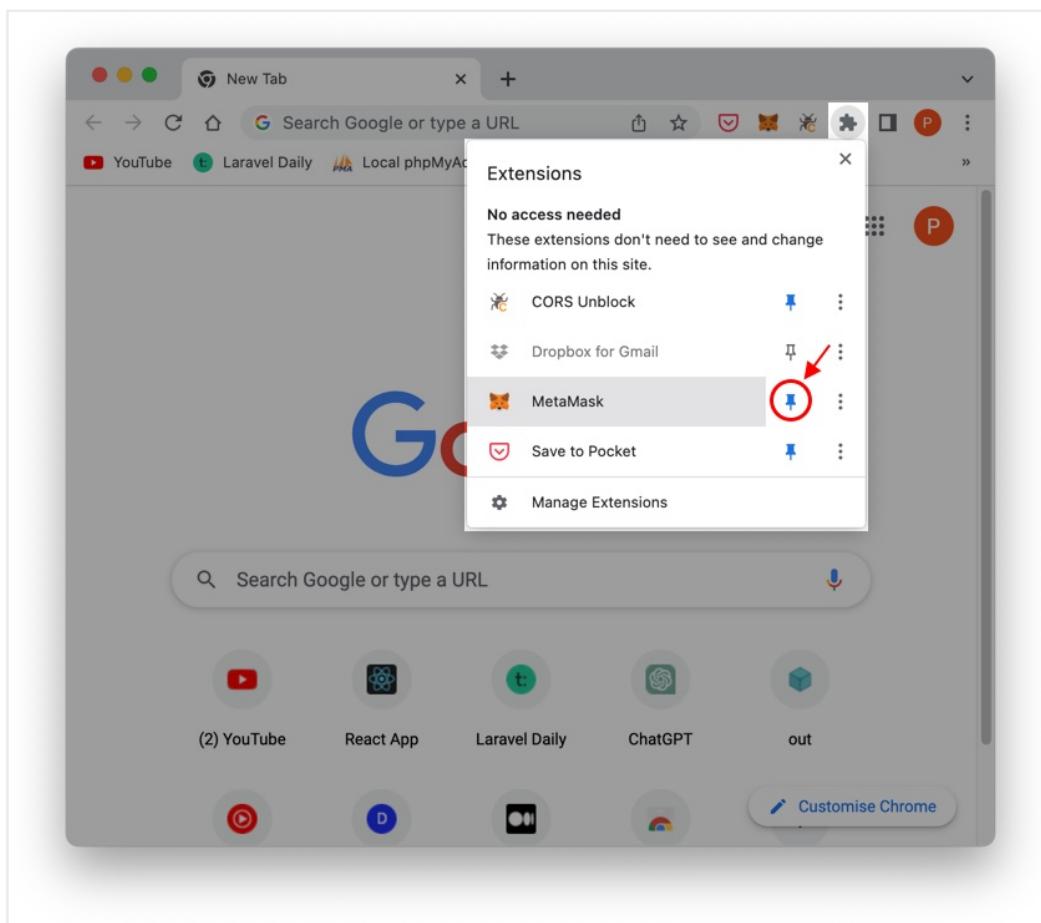
0x3C44CdDdB6a900fa2b585dd299e03d12FA4293BC (10000 ETH)

Private Key:

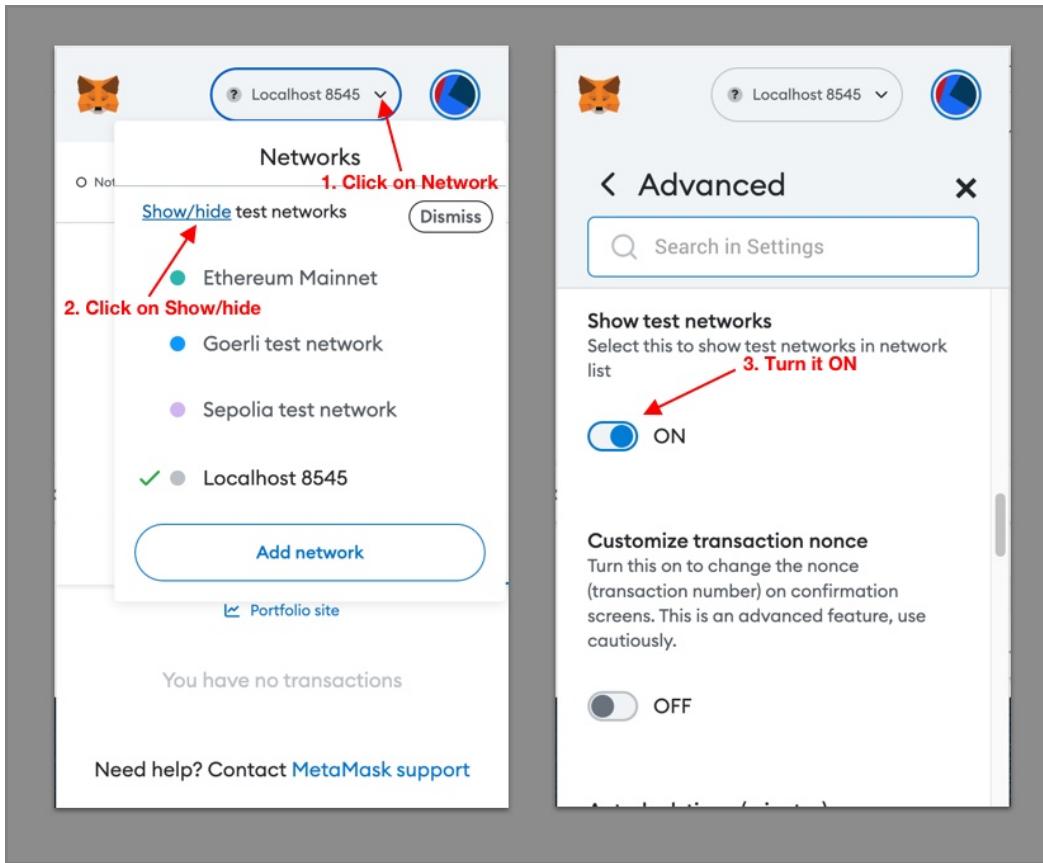
0x5de4111afa1a4b94908f83103eb1f1706367c2e68ca870fc3fb9a8
04cdab365a

8. Make sure the Hardhat node above continues to run from here onwards.

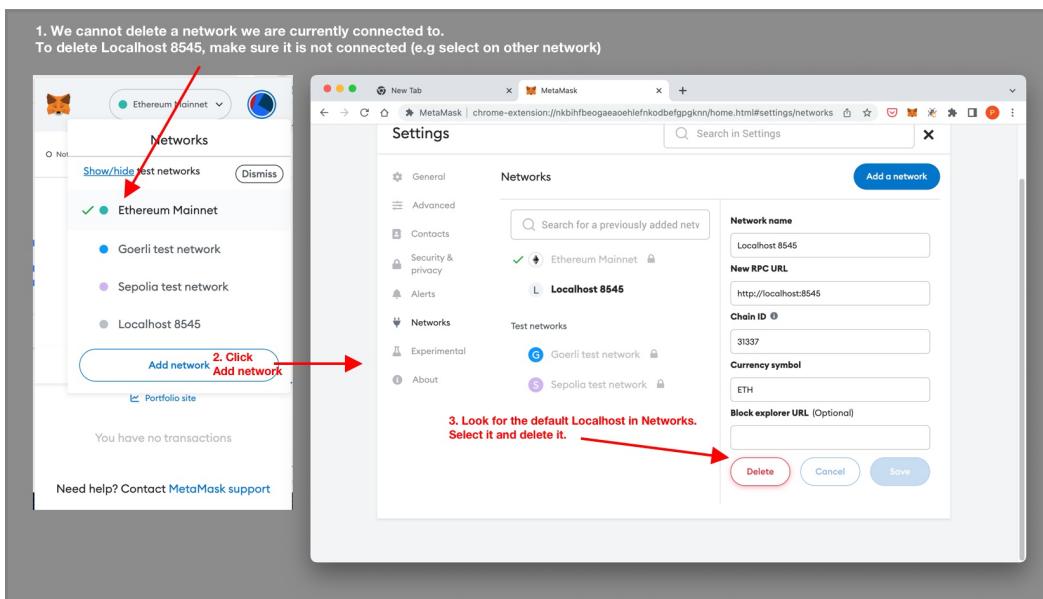
9. Launch Chrome Browser and install MetaMask for Chrome at <https://metamask.io/download>. Pin MetaMask as illustrated



10. Click on in MetaMask extension and turn ON show Test Network.

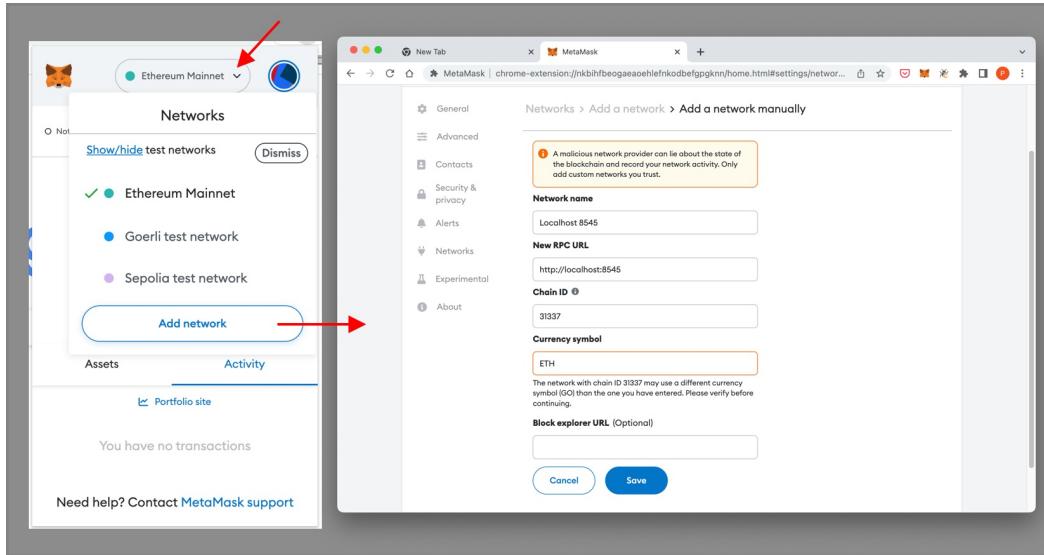


11. MetaMask setup: Delete the default Localhost 8545 Network



12. MetaMask setup: Go to Network, Select Add network and add new Localhost 8545 with the following info: New RPC URL: <http://localhost:8545> Chain ID: 31337

Currency: ETH



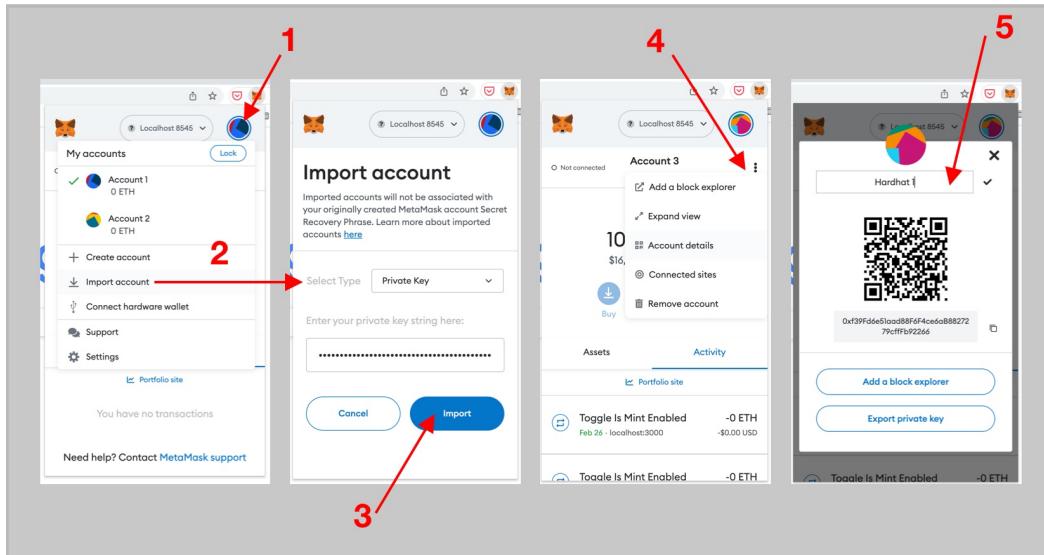
13. Next will be to add a new account to MetaMask using the first account Private Key from Hardhat (in step 7)

Enter private key

0xac0974bec39a17e36ba4a6b4d238ff944bacb478cb5efcae784d7bf4f2ff80

On MetaMask, go to top right Account and click Import Account.

Also rename the newly added account as **Hardhat 1**



14. Next will be to deploy our contract. The deployment script is located at **C:\temp\nft-demo\contract\scripts\deploy.js**

15. Open a new terminal and navigate to **C:\temp\nft-demo\contract** and run the command:

C:\temp\nft-demo\contract> npx hardhat run scripts/deploy.js --network localhost

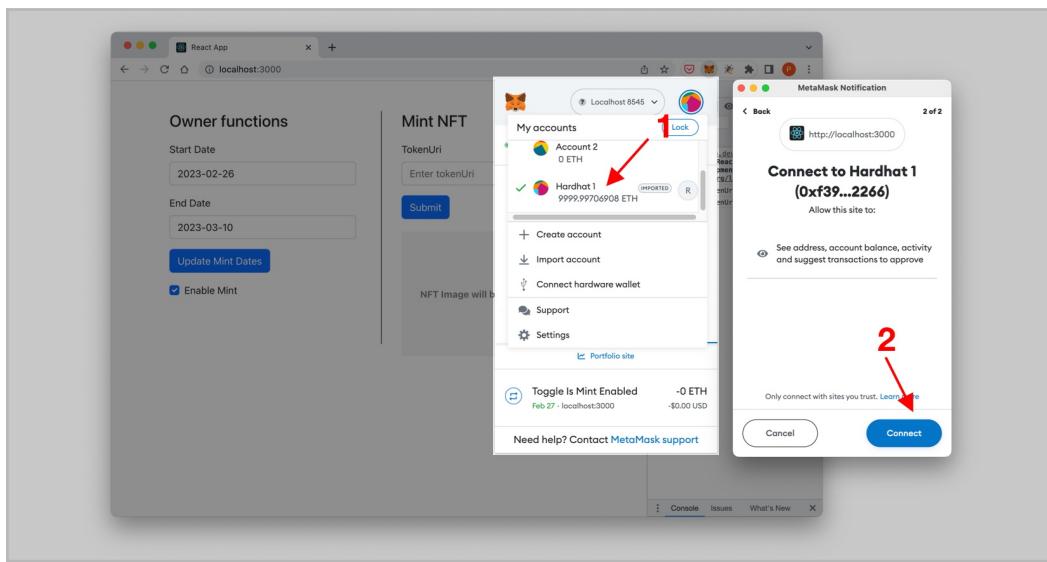
Hardhat will display the following

MyNFT is deployed to **0x5FbDB2315678afecb367f032d93F642f64180aa3**

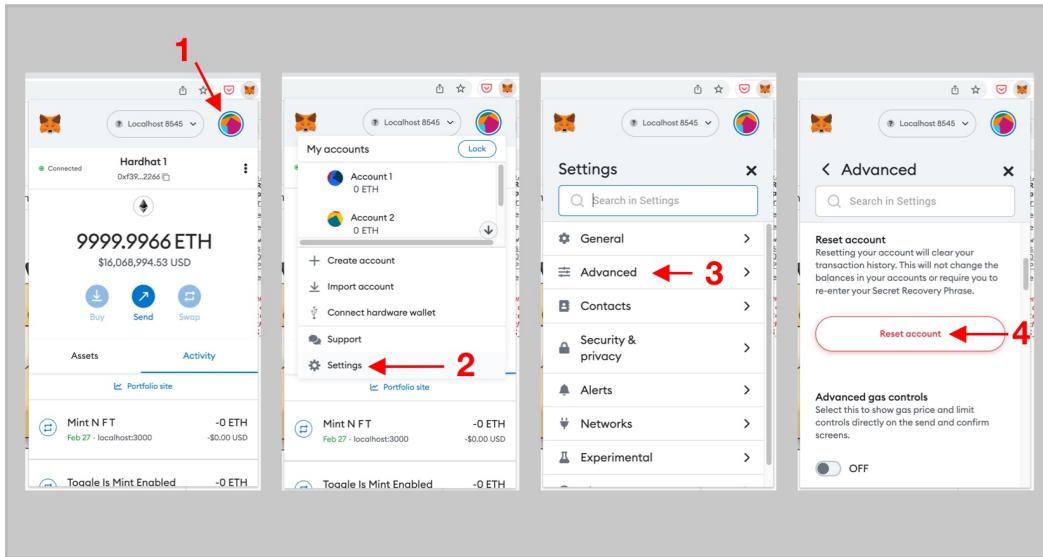
For development, this address is hardcoded as the contract address in **C:\temp\nft-demo\client\src\App.js**

That's all for the backend

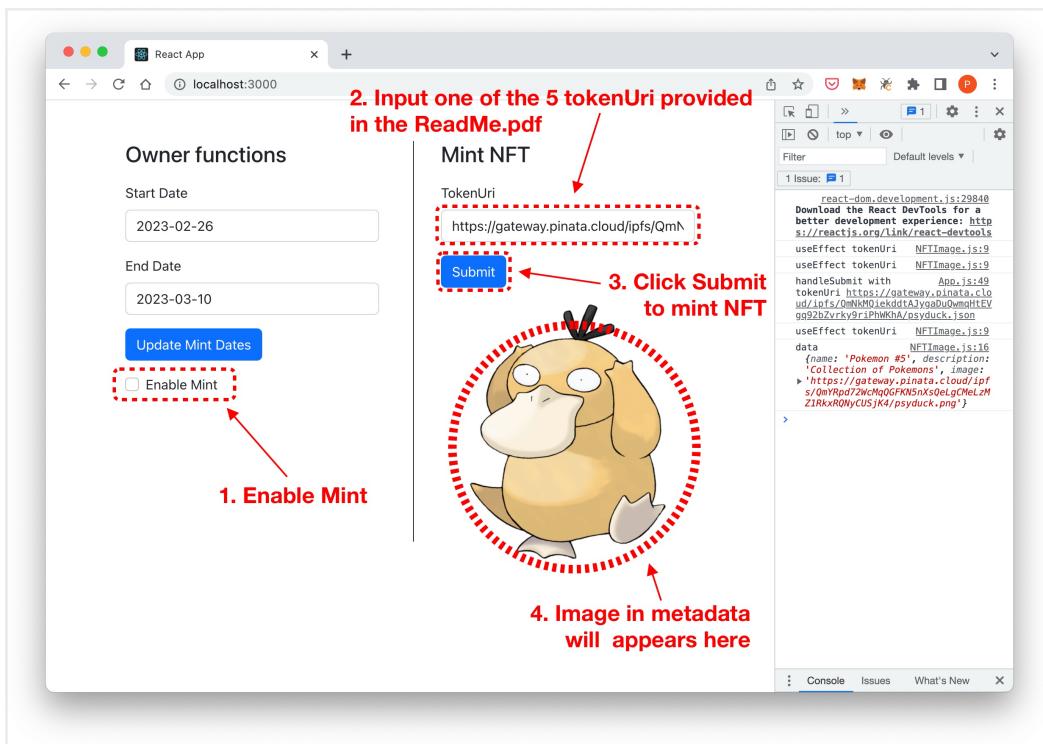
16. Navigate to the client directory cd **C:\temp\nft-demo\client**
C:\temp\nft-demo\client> npm install
17. Then execute the following to start react client in development mode:
C:\temp\nft-demo\client> npm run start
18. When the client first loads up on Chrome browser, it will initiate to connect to a wallet. The MetaMask window will appear. And go ahead and select the **Hardhat 1** account we added in step 13.



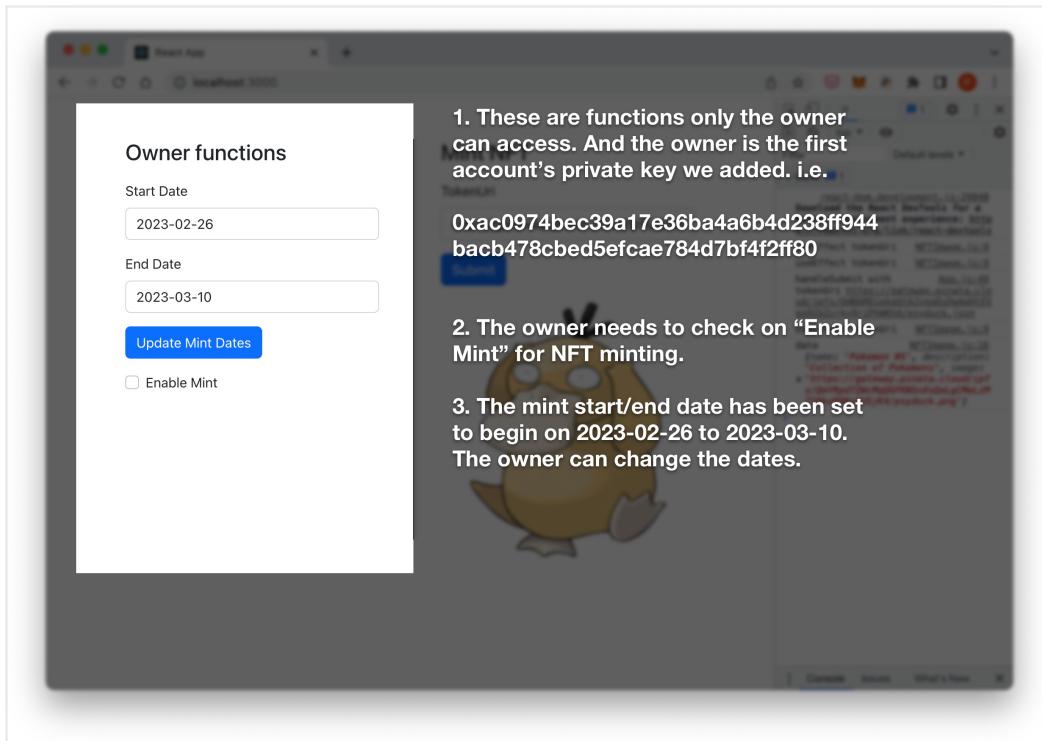
14. **From here onwards, if MetaMask encounters any issues, perform the following to reset and clear cache.**



15. Start to mint NFT using any of the tokenUris provided in the **info.txt** file attached. Remember to perform Step 14 if you encounter any issues with MetaMask.



16. Owner only functions



17. You can switch/add accounts in MetaMask by following Step 13 using any of the following account's private key in the **info.txt** file attached.
18. Thank you