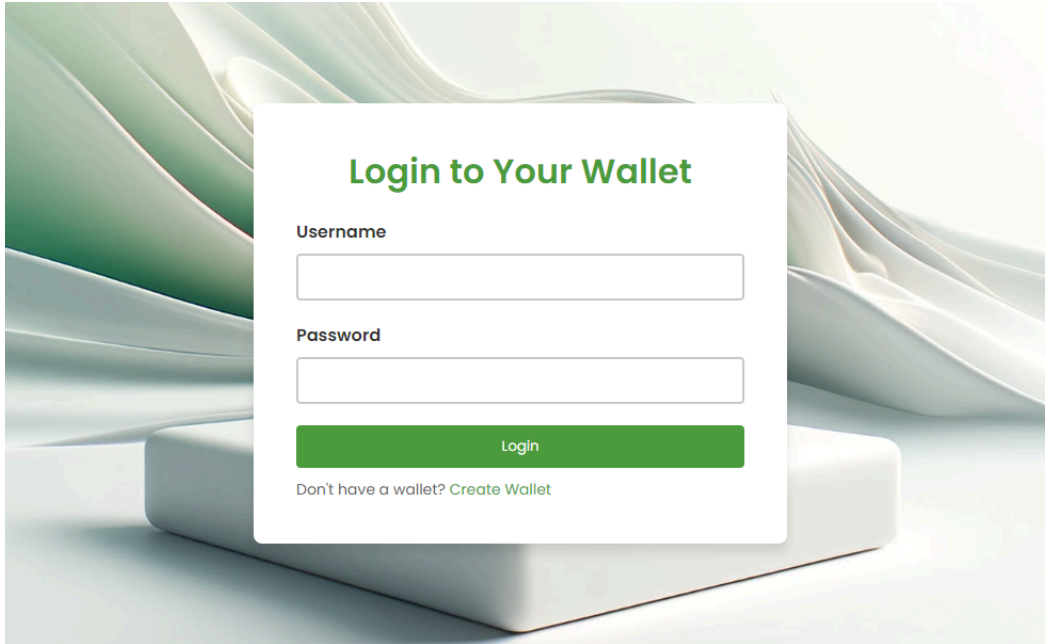# HD Wallet Guide

By **Ibraheem Ganayim - 206693194**

Start by opening Login.html to start.
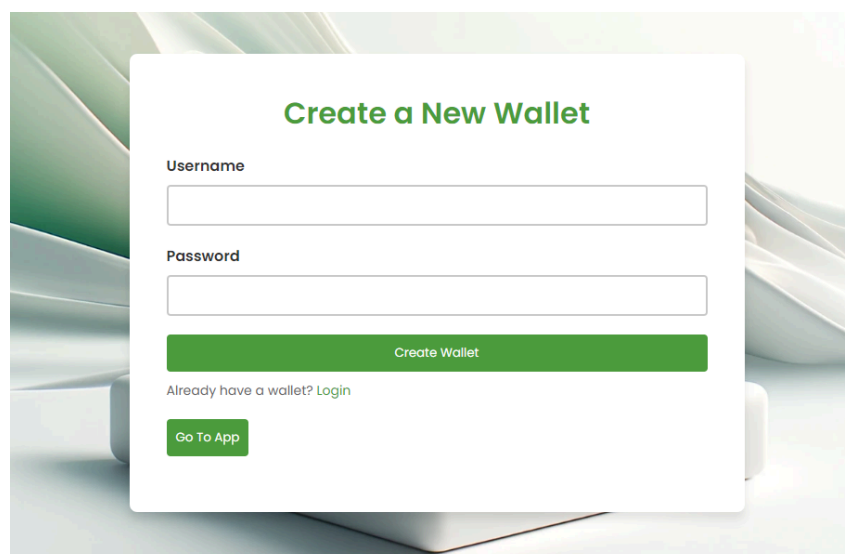Enter your Username and Password to log in or Create a <u>New Wallet.</u>

To demonstrate a transaction between wallets we are going to start by creating a new wallet.
By clicking on <u>Create Wallet</u> we are directed to the following page.

Fill out the desired username and password and hit <u>Create Wallet</u>.

Upon successful wallet creation, you will get your account address and a personal seed phrase.

Store the seed phrase somewhere safe and hit Go To App to continue as the new user.

This is the user Home Page (in our case the first user is **ibra**):


You can see your wallet address along with your account balance.

Current prices of ETH and AVAX are displayed on the right side of the page in USD. Additionally, you will see a menu at the top of the page providing easy navigation to different sections of the application.
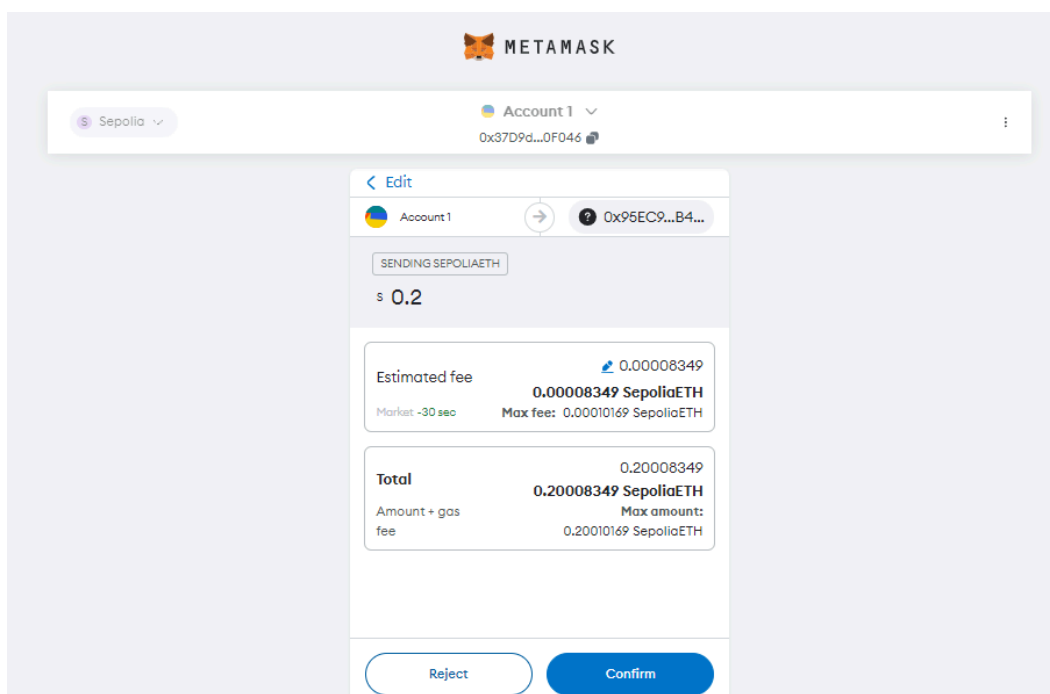
In order to be able to make a transaction we will need some test coins, to do this I used
https://faucets.chain.link/ to get 0.25 ETH into my MetaMask account.

Then I made a 0.2 ETH transaction through MetaMask to my account **ibra** in this HD Wallet.
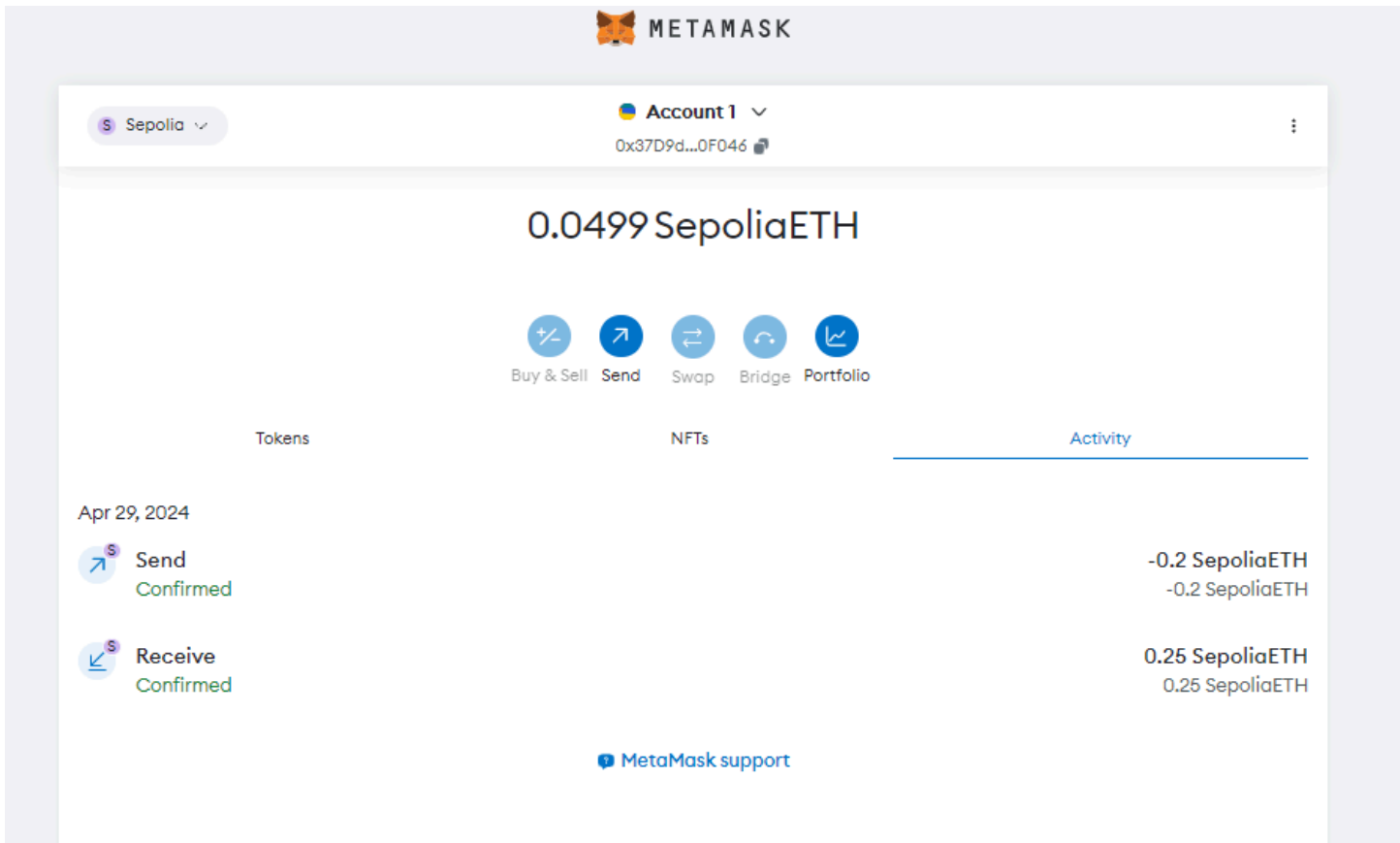
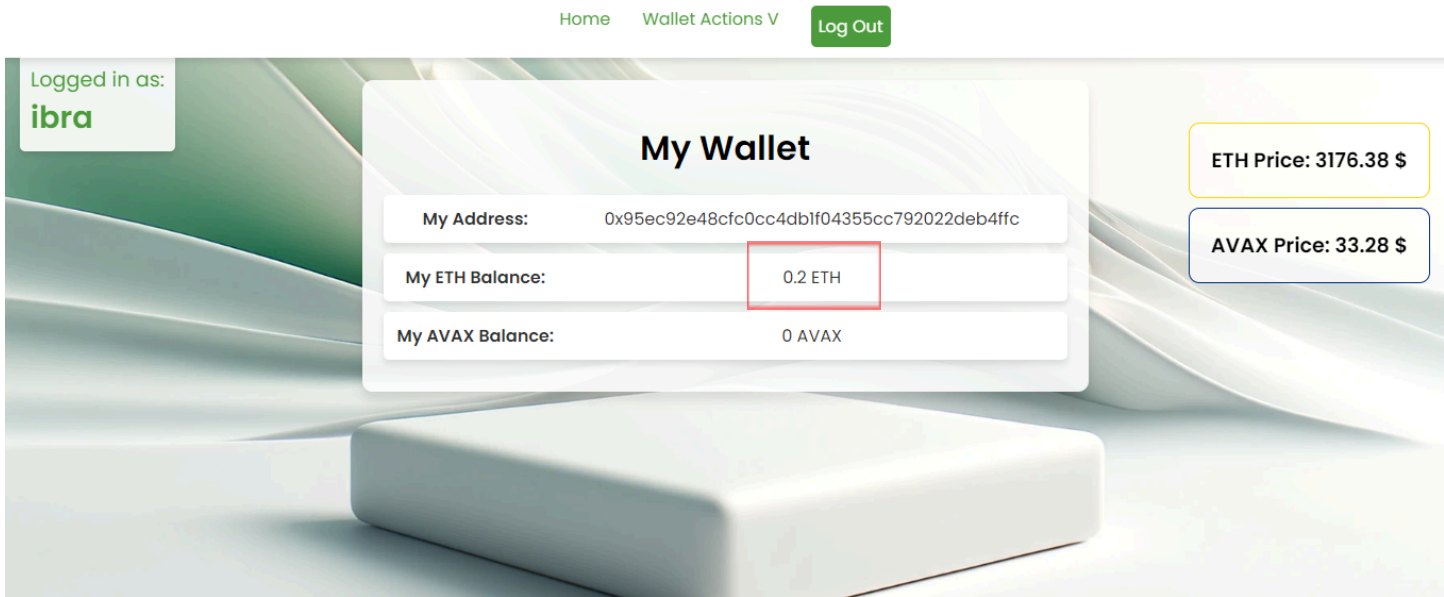This is the transaction from the faucet to my MetaMask account:
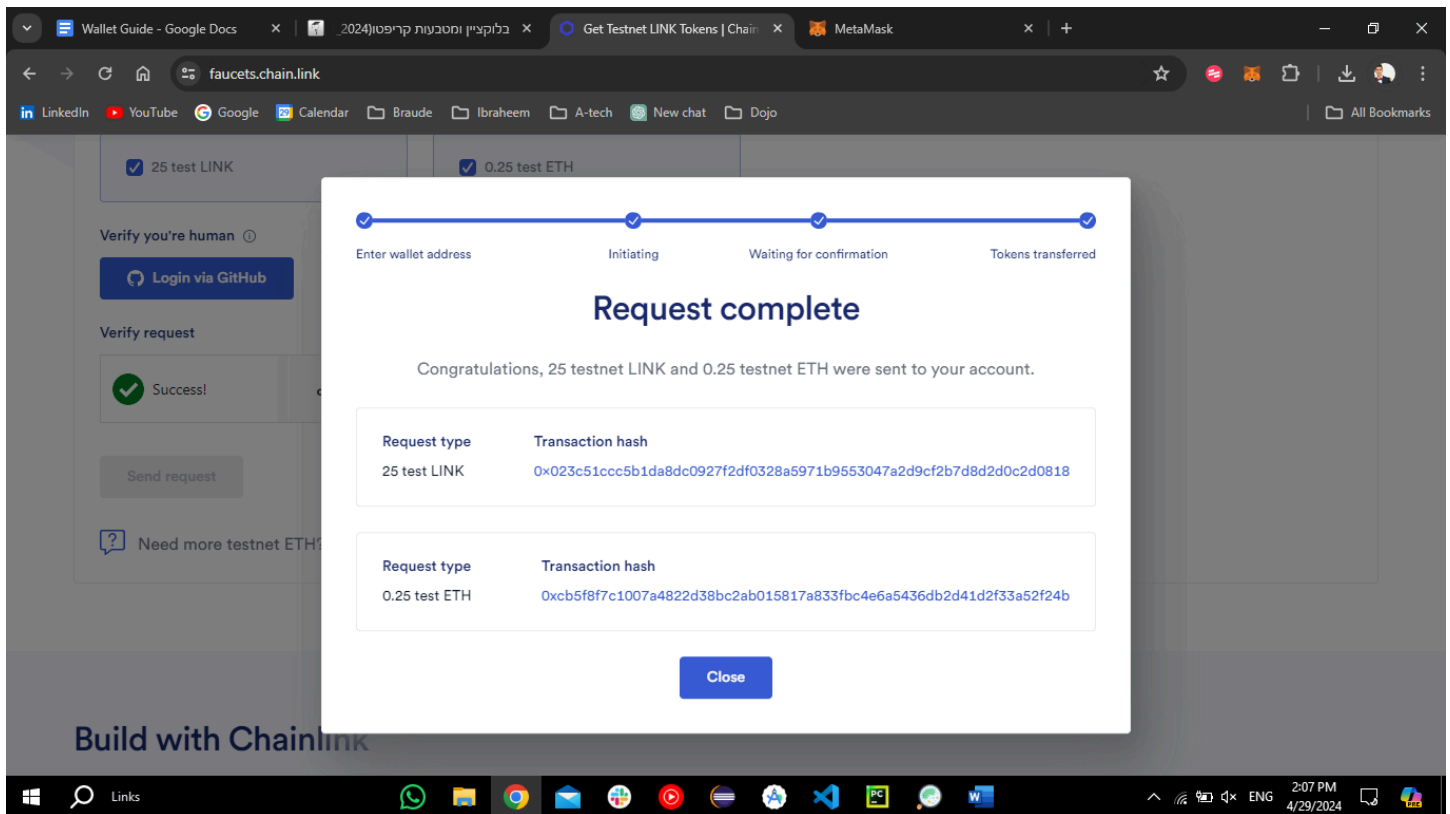
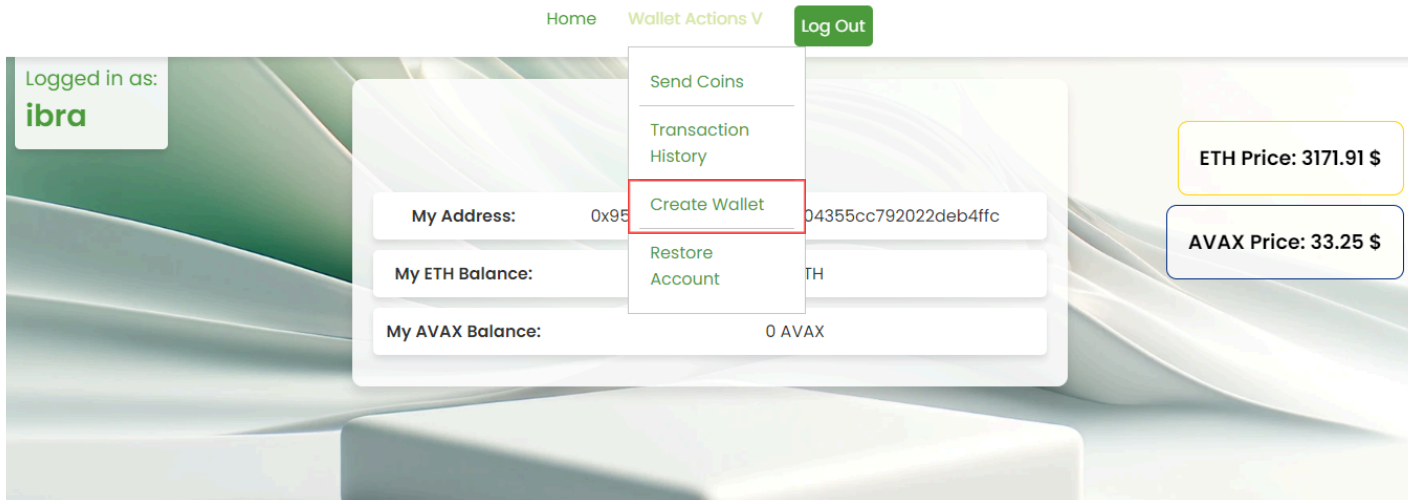and this one is from the MetaMask account to my HD Wallet:

After confirmation:

Here's the ETH balance at **ibra**'s HD Wallet account updated:

Successfully received 0.2 ETH.

In order to make a successful transaction let's create a second account to move funds into.

To create a new wallet click on Wallet Actions drop-down menu in the navigation bar and hit Create Wallet:


Fill in a new Username and Password, for this demo I'm using **ibra2** as the Username.
Hit Create Wallet and proceed as I showed in creating the first Wallet.

Note: Opening the Create Wallet page will log you out.

Now copy **ibra2**'s wallet address from this form or the home page and log out to log in again to **ibra**'s wallet to make a new transaction.

After loging in as **ibra** again, click Wallet Actions and hit Send Coins to make a new transaction:
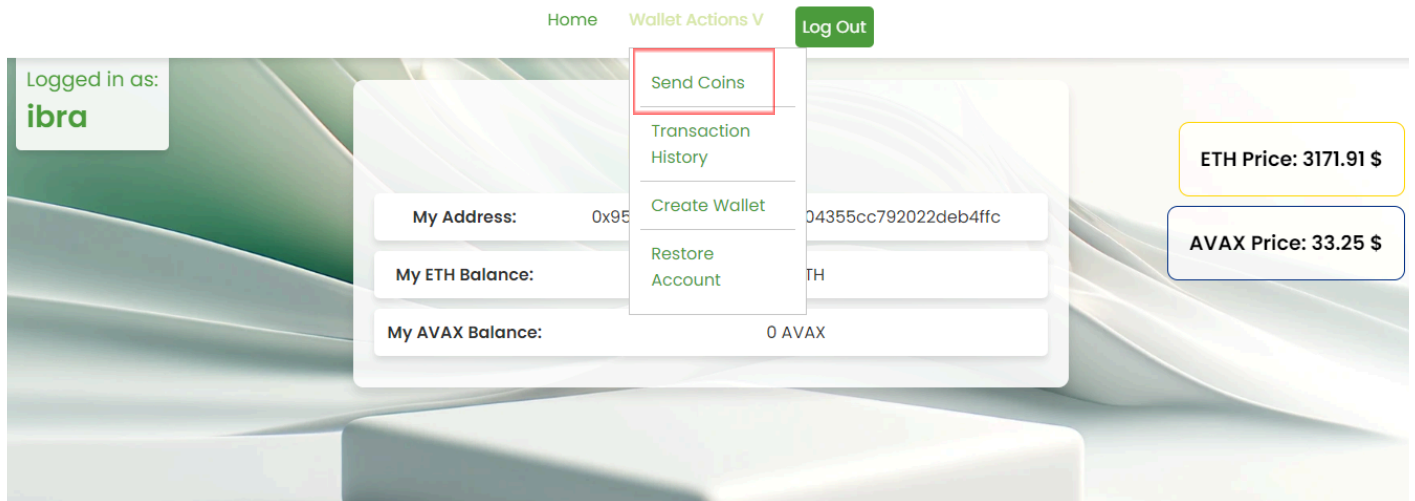
You will be directed to this page:

Fill out the recipient's (**ibra2**) wallet address and the desired amount and type to transfer and hit Send Coins. for the demo, I'm transferring 0.1 ETH.

Upon successful transaction, you will receive a message as follows:

Now log out and log in to **ibra2** to view the received funds:

0.1 ETH successfully transfered.

To view transactions history click <u>Wallet Actions</u> and then <u>Transaction History</u>:
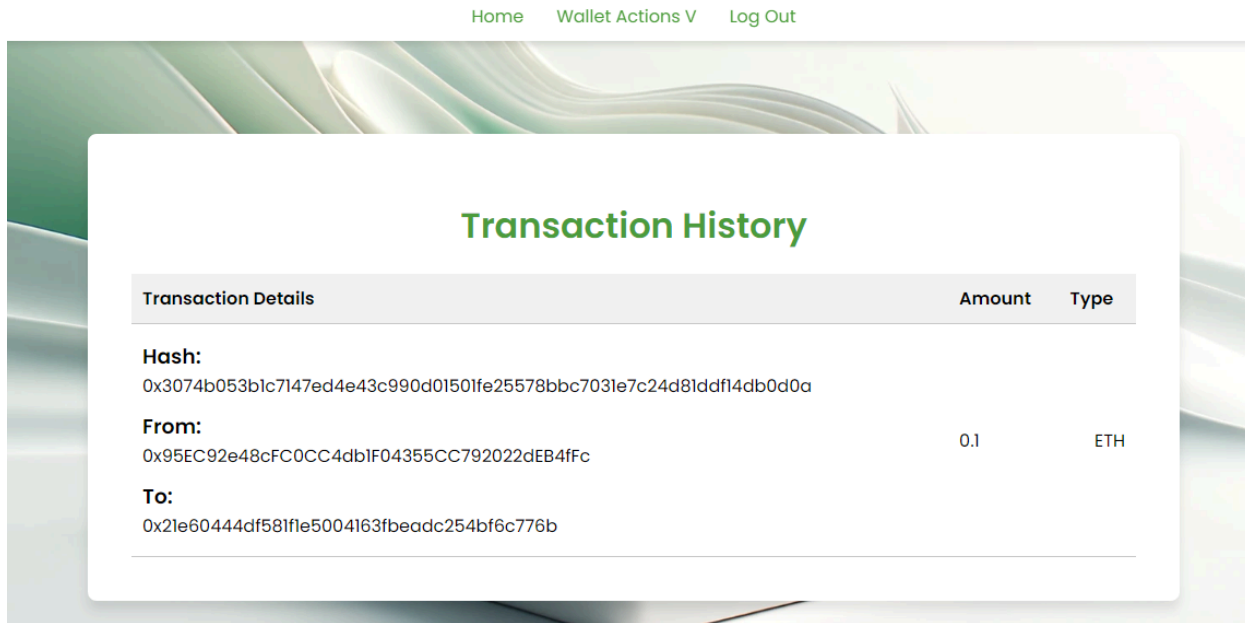
You can see the <u>transactions Hash</u> and the wallet addresses of the <u>sender</u> and the <u>receiver</u>.

Here's the transaction proof:
https://sepolia.etherscan.io/tx/0x2b68c1f88d6cfd9b8b792e5f43c5915bfc9b6d3f8a8cfb0bd42b8b4ceede18d2

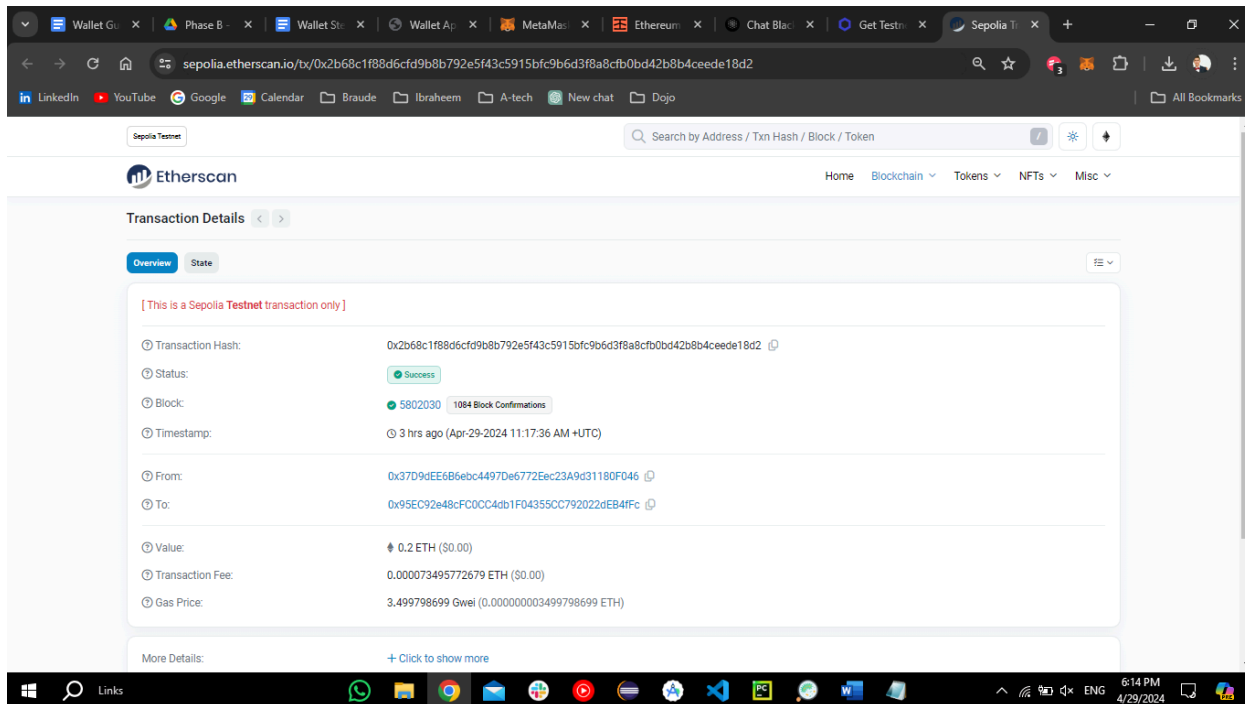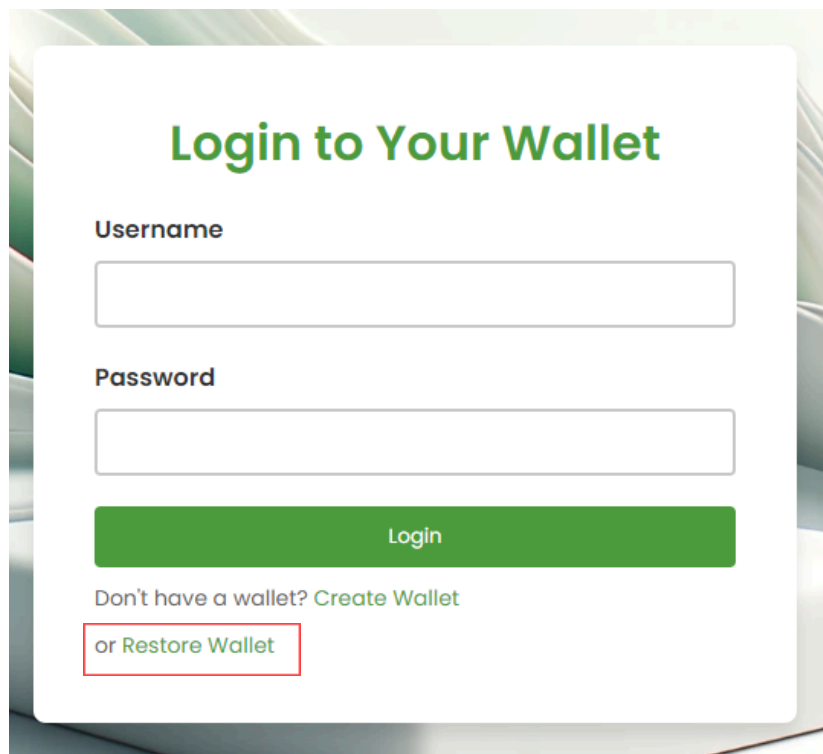

This screenshot serves as concrete evidence that the transaction was completed without any issues.
It further validates the reliability and accuracy of the transaction details presented.
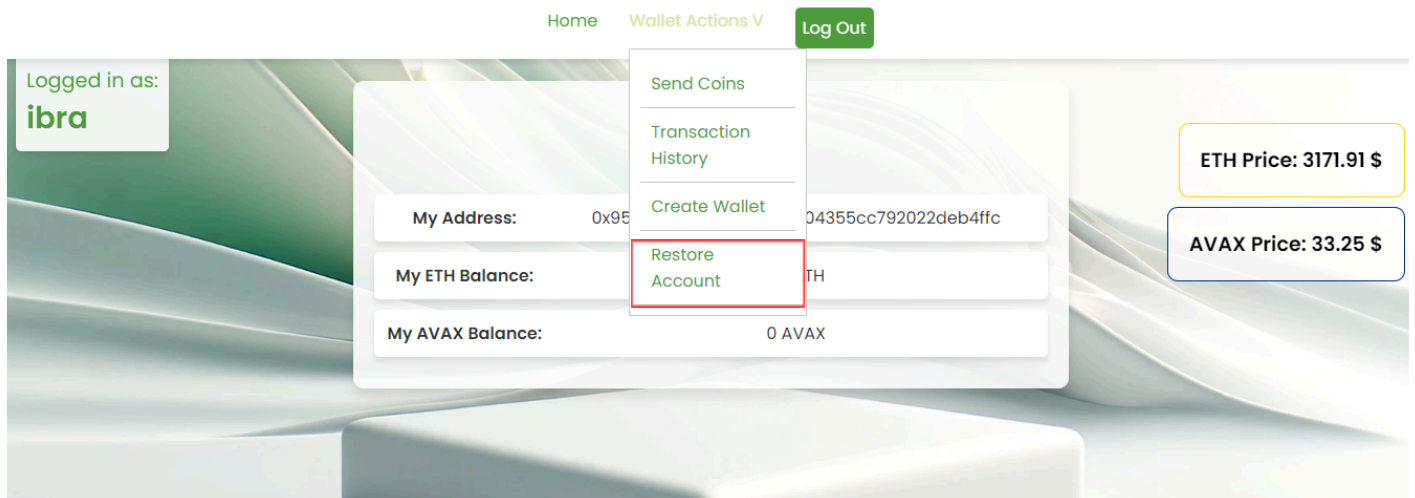
Now let's demonstrate **Account Restoration**.

To restore an account, click on <u>Restore Wallet</u> from the login page.

or from <u>Wallet Actions</u> from the top navigation bar:

To restore your account, enter the **seed phrase** that was provided during the account creation process.

This seed phrase serves as the key to recovering your account and accessing your funds. Additionally, enter a new password for your account.

After filling out the form, hit Restore Account.

If you receive the message "Successfully logged in, password restored!" after entering the seed phrase and setting a new password, it indicates that your account has been successfully restored, and you are now logged in.

In case the seed phrase entered is incorrect, the user will receive an error message indicating an incorrect seed phrase.

General Notes

Transaction API:

- To facilitate the ETH transaction, I leveraged an API documented in the MainFuncs.js file.
- The API I used is https://sepolia.infura.io/v3/b4eef4414e364d1094a02604a7018b22.

API Sources:

- The project notes document three API sources:
  - The first API is from now nodes.io.
  - The second API is from Infura.
  - For Avalanche, we utilized the Fuji testnet API.
  - (https://avalanche-fuji.infura.io/v3/b4eef4414e364d1094a02604a7018b22)

Gas Price:

- We utilized a gas price of 3.499798699 Gwei (0.000000003499798699 ETH) for the transaction.
- This value aligns with the average price during the transaction's execution.

Other possible APIs

Ethereum

Mainnet: https://mainnet.infura.io/v3/b4eef4414e364d1094a02604a7018b22

Sepolia: https://sepolia.infura.io/v3/b4eef4414e364d1094a02604a7018b22

Holesky: https://holesky.infura.io/v3/b4eef4414e364d1094a02604a7018b22

Avalanche C-Chain

Fuji: https://avalanche-fuji.infura.io/v3/b4eef4414e364d1094a02604a7018b22

Mainnet: https://avalanche-mainnet.infura.io/v3/b4eef4414e364d1094a02604a7018b22

Thank you.