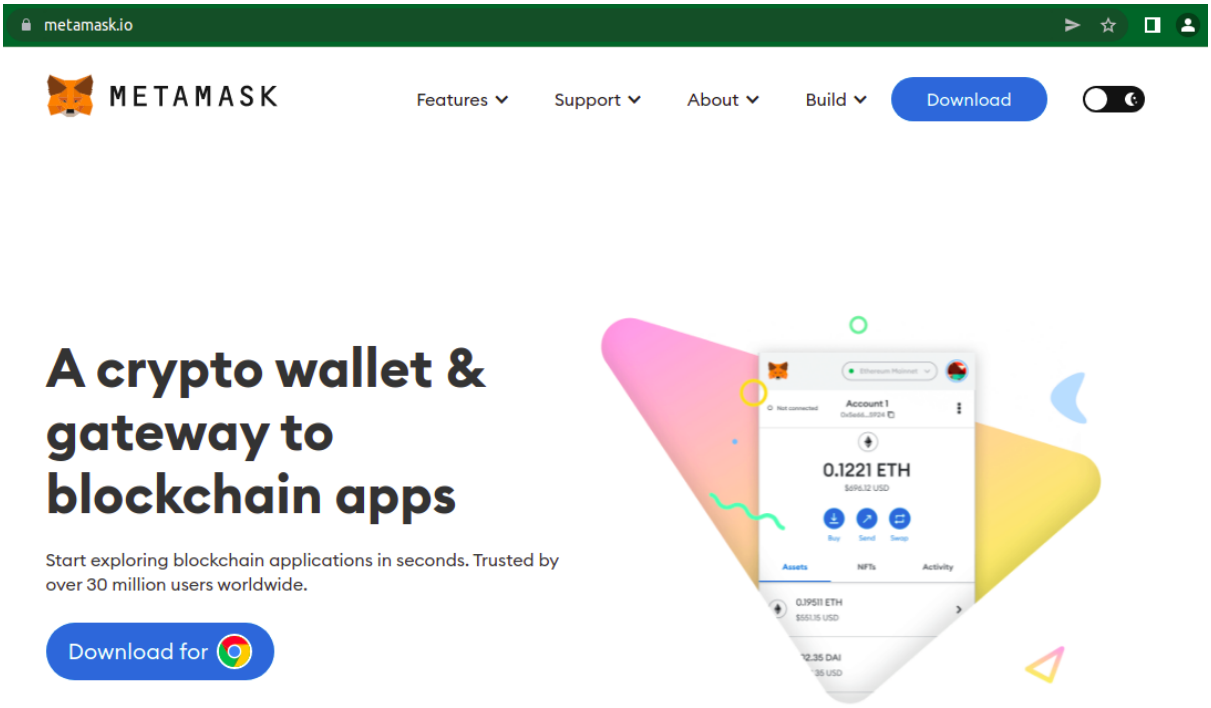
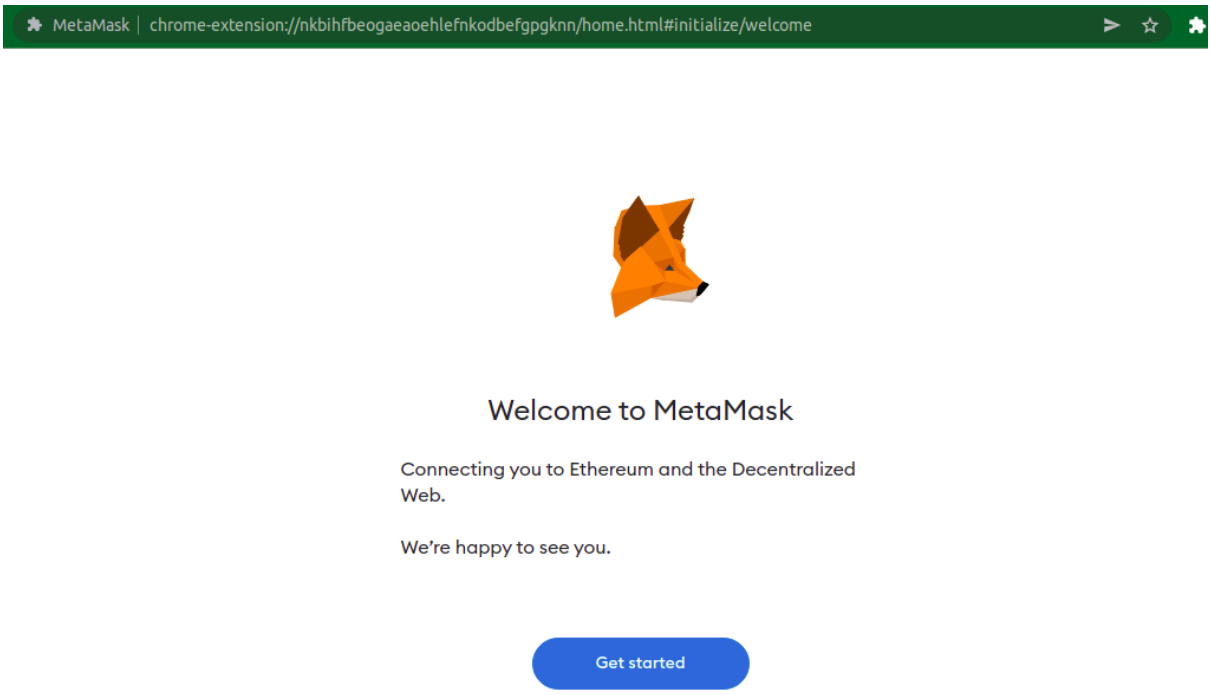
Metamask Wallet

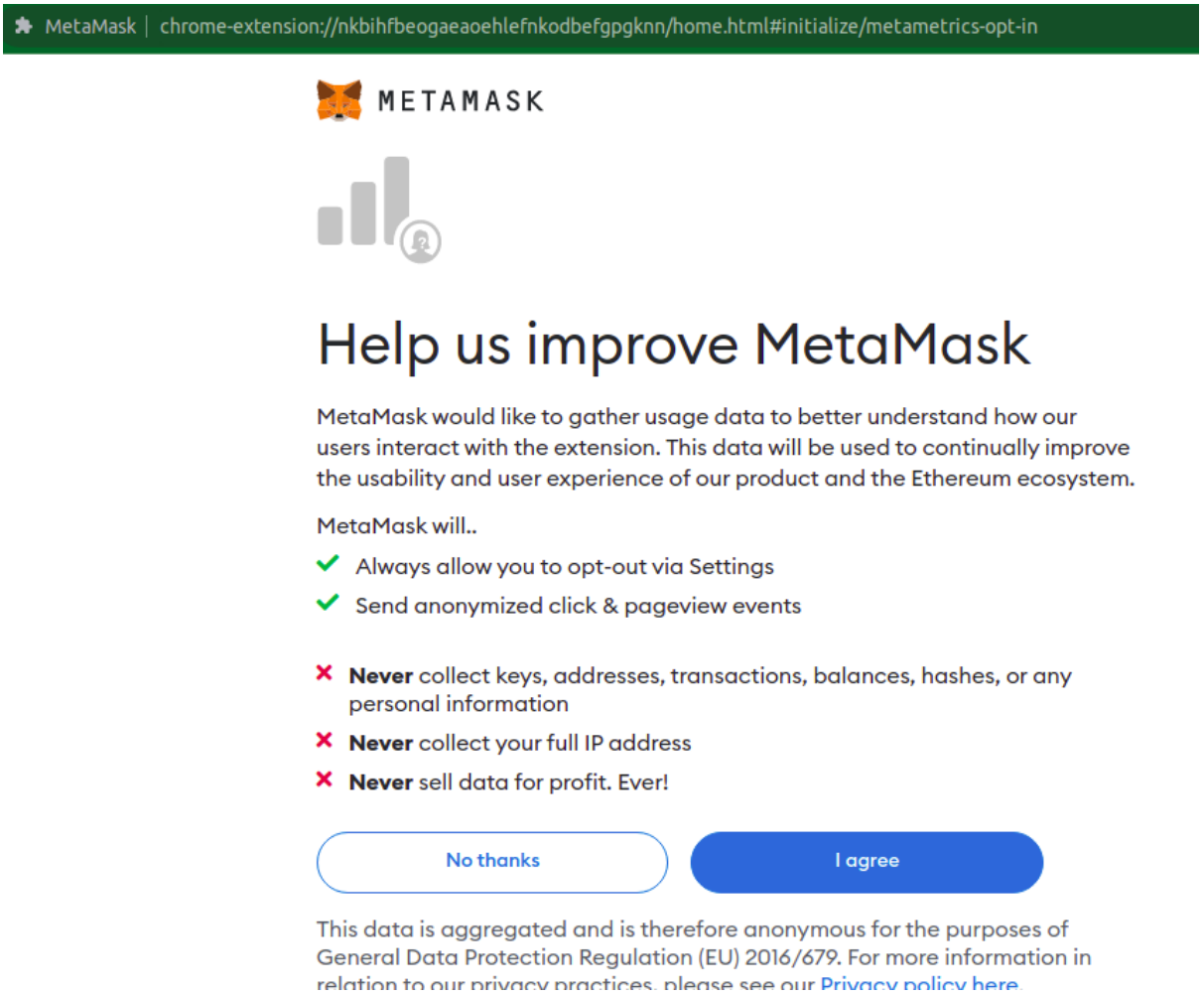
Go to https://metamask.io/



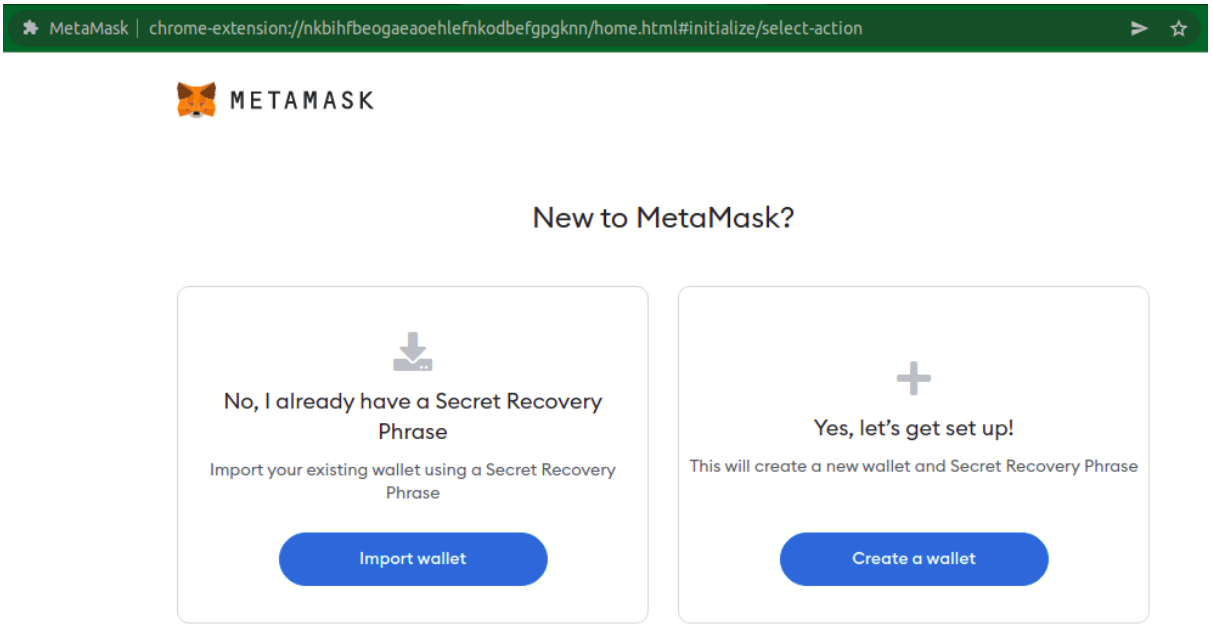
And get the browser extension from ***download option***.



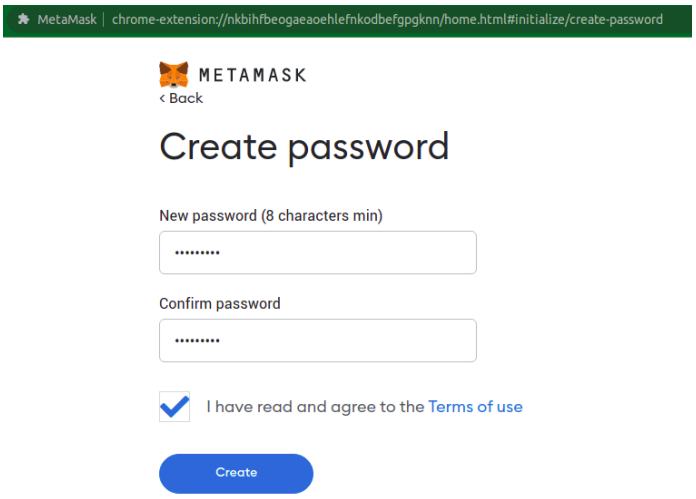
After the browser extension gets added to your browser you will be greeted with this window click **get started**.



Continue with **I AGREE** option

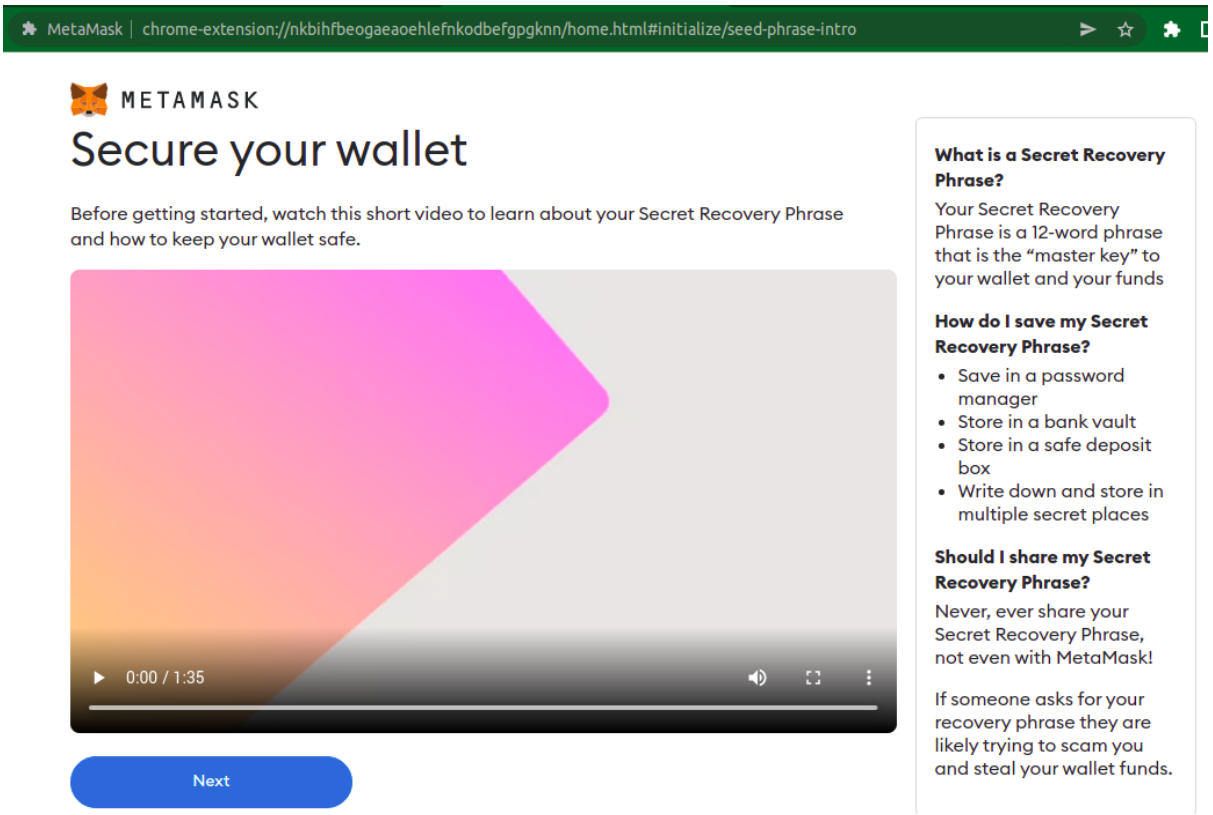


If you have wallet then you can import your existing wallet with 12 word seed phrase, else you can continue with **create wallet** option

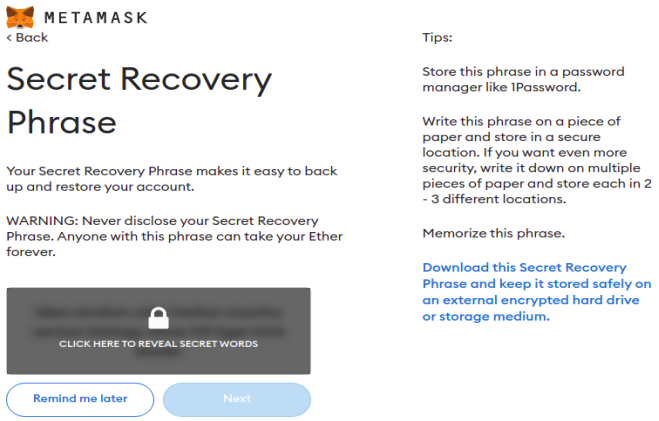


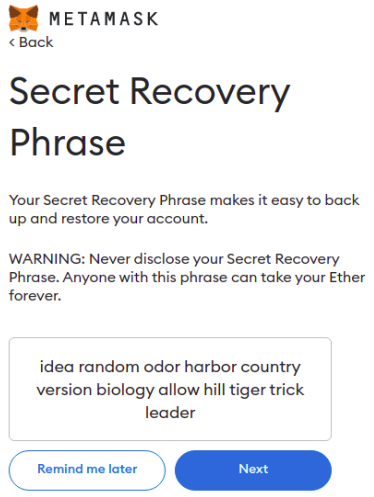
Enter the password for MetaMask

Next you will be shown the secret backup Phrase, aka Seed Word. If you ever forget the password of the MetaMask you can use the seed word to reset password and recover your accounts. Click on **Next**

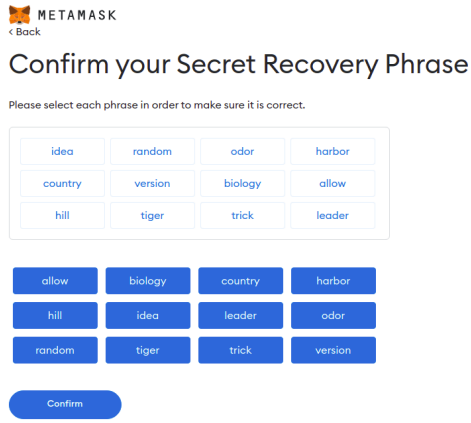


Click on the ***Click Here to Reveal Secret Words*** to see the seed word.

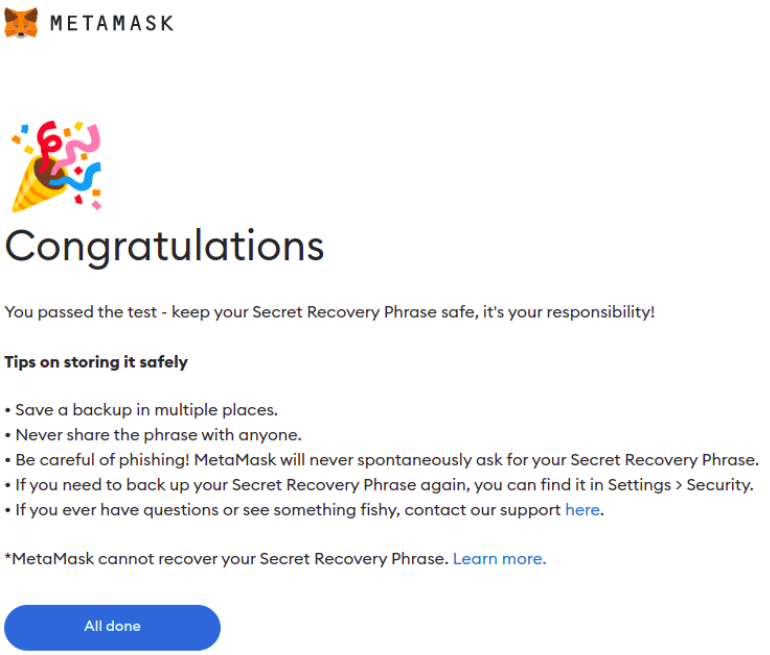




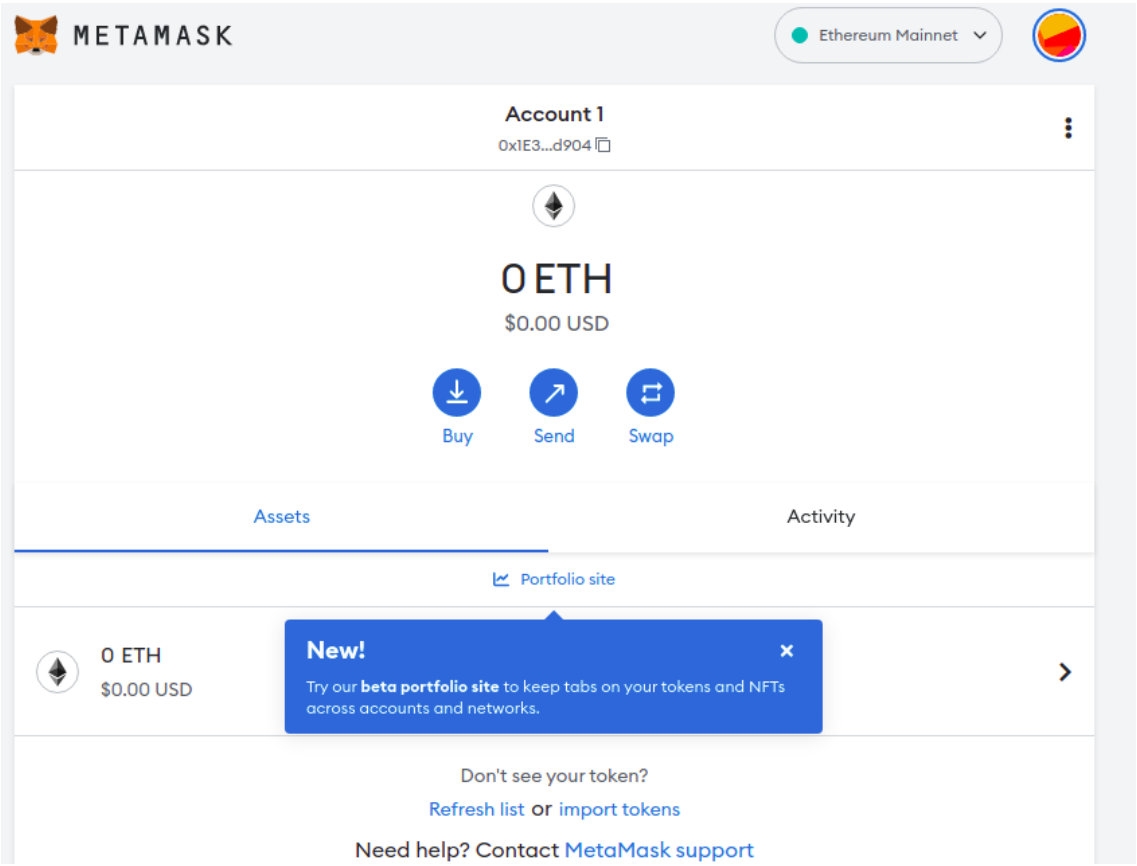
The MetaMask will ask you to confirm the seed phrase, select the buttons(with words of seed phrase written) in correct order and reproduce the seed word.



To delete a word, click on the button again. After finishing click ***confirm***.

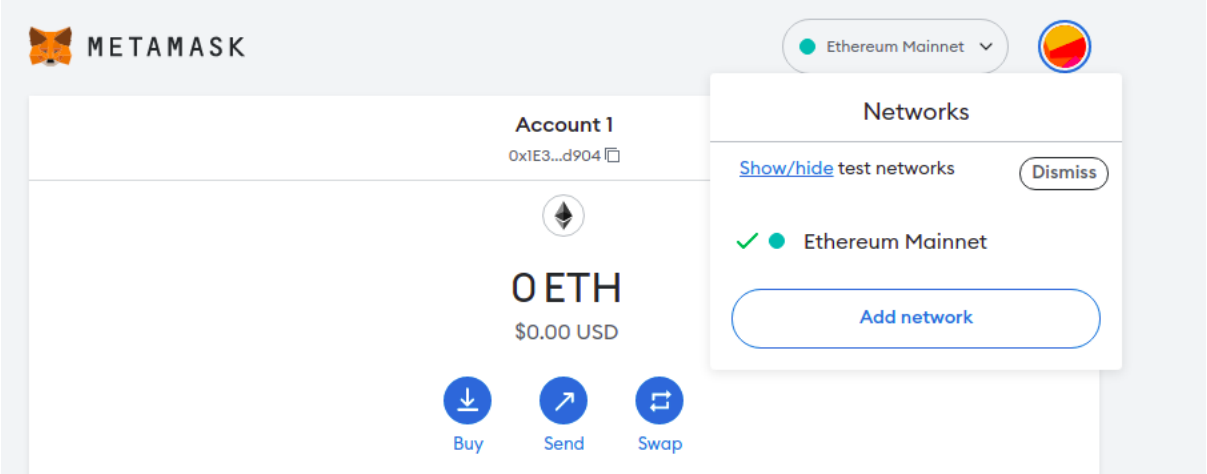


Continue with ***ALL DONE***.

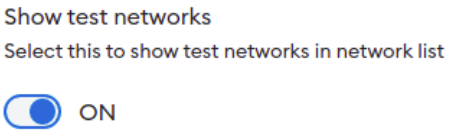


This is your MetaMask home screen, which will show the current selected account information.

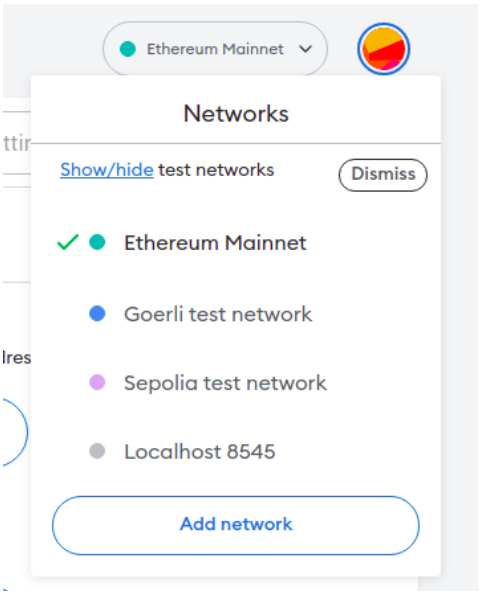
Click on the Main Ethereum Network which will open this menu. Using MetaMask you can seamlessly manage accounts on Main Ethereum Network or any test network.



Now click on **Show/Hide test networks** and enable test networks. Save the changes.

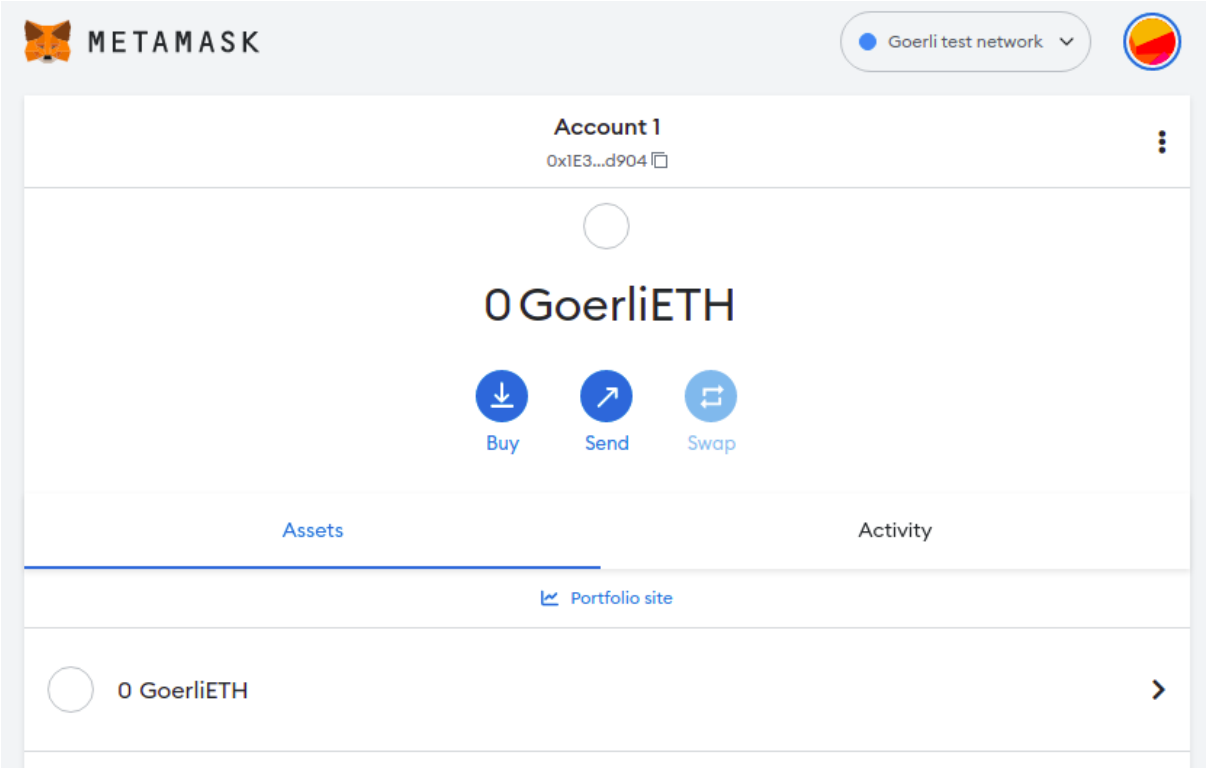


Now you will be able to see test networks also.

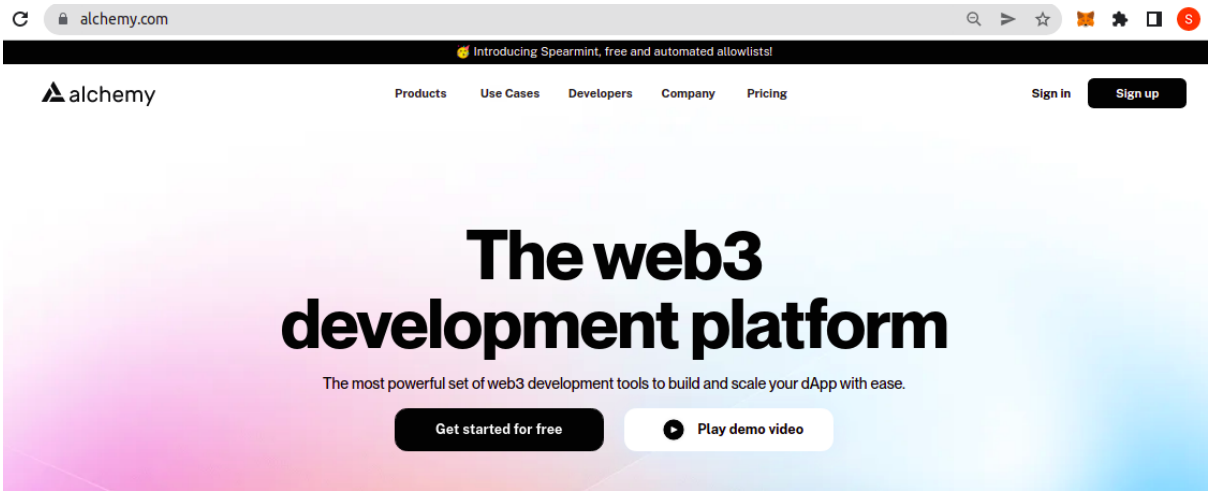


Now let's select the ***Goerli Test Network*** to check out all the features offered by MetaMask

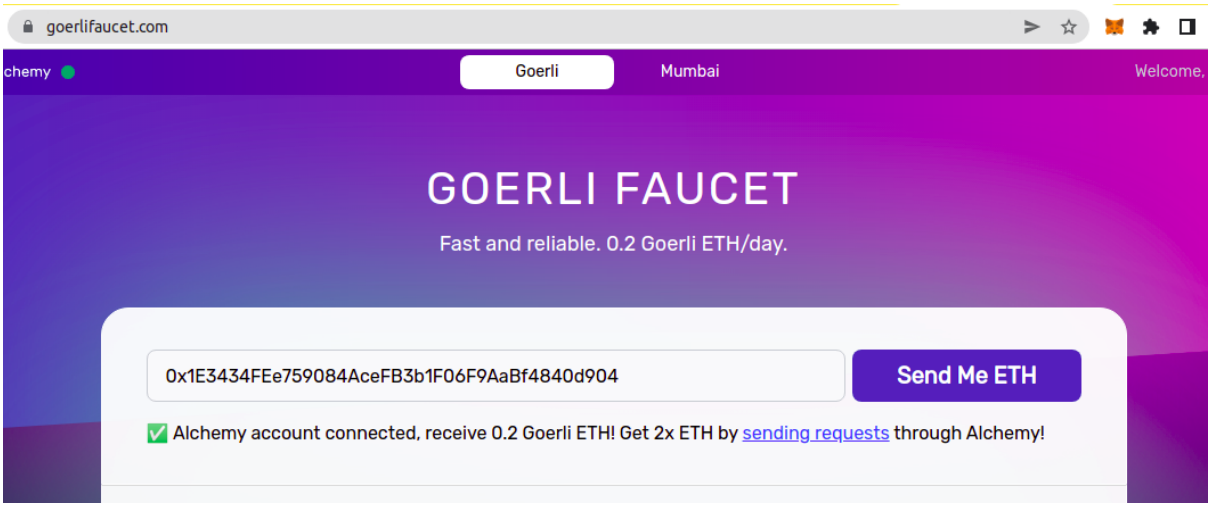
As you can see now it has changed to Goerli Test Network and now let's get some test ether to play around with 😉.



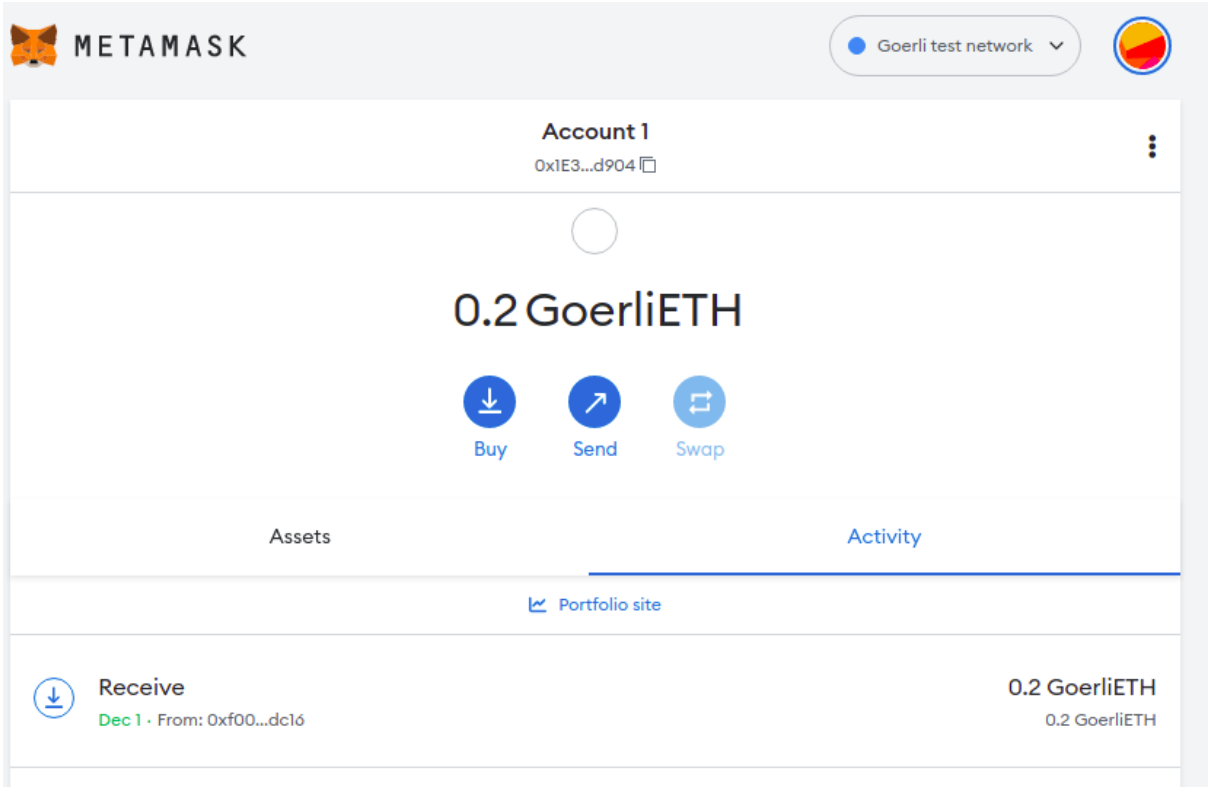
Faucets are places which provide test ether. Many faucets are available. Each faucet will have its own way for restricting test ether requests. Let us try to get some from https://goerlifaucet.com/. It requires the user to signup using alchemy account. If you do not have an Alchemy account, you may visit https://www.alchemy.com/ and create an account.



Now go to https://goerlifaucet.com/, signin using the alchemy account. Paste your account address from MetaMask and click on ***Send Me ETH***.



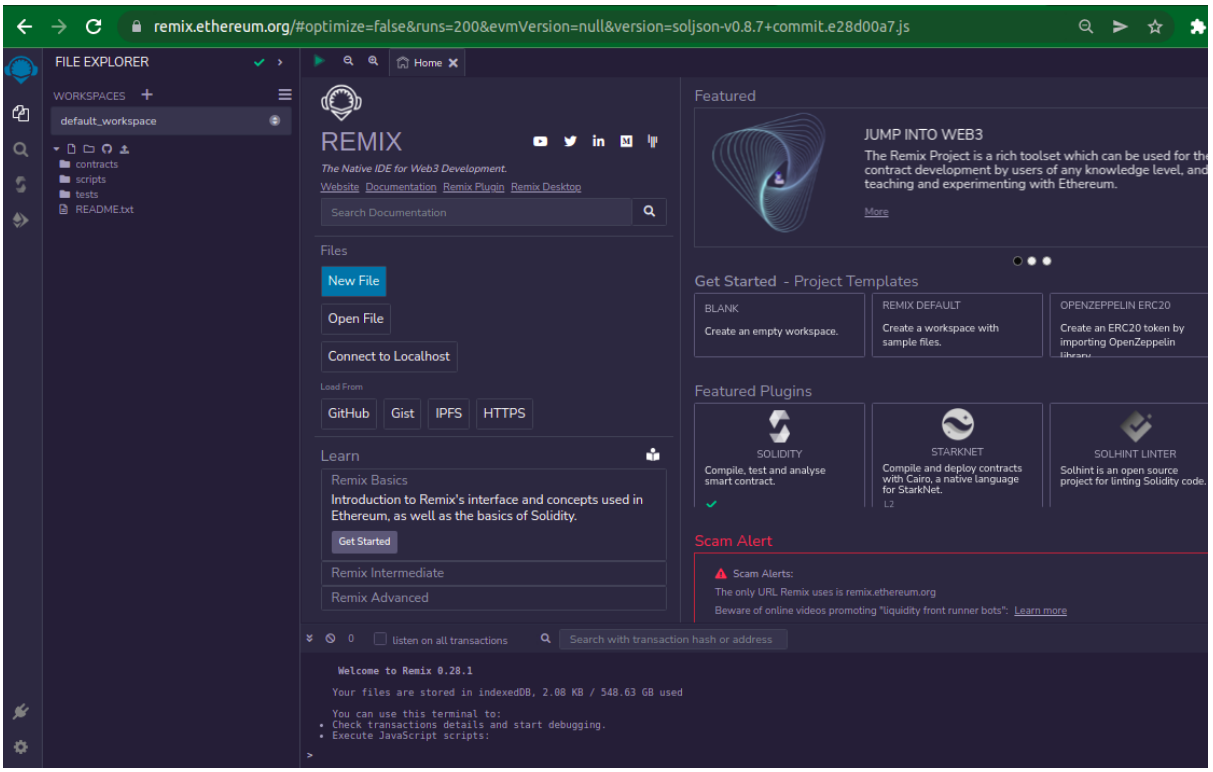
Once this operation is completed, your account will be credited with test ether.



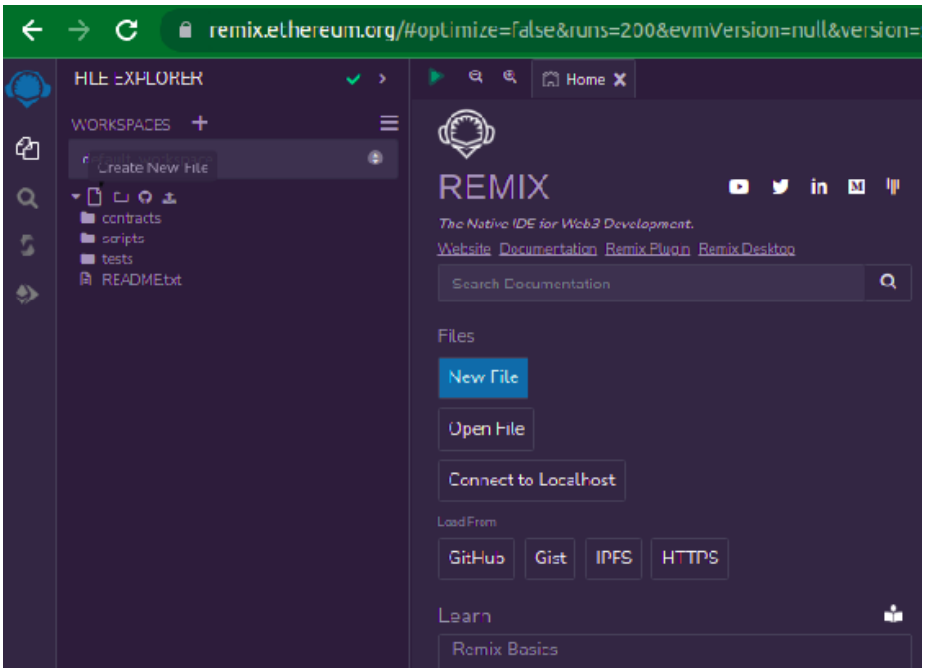
Under the ***Activity tab***, you will be able to see the transaction details.

Remix IDE

Remix IDE is available as a desktop application and also an online tool to write and test smart contracts. Go to https://remix.ethereum.org/

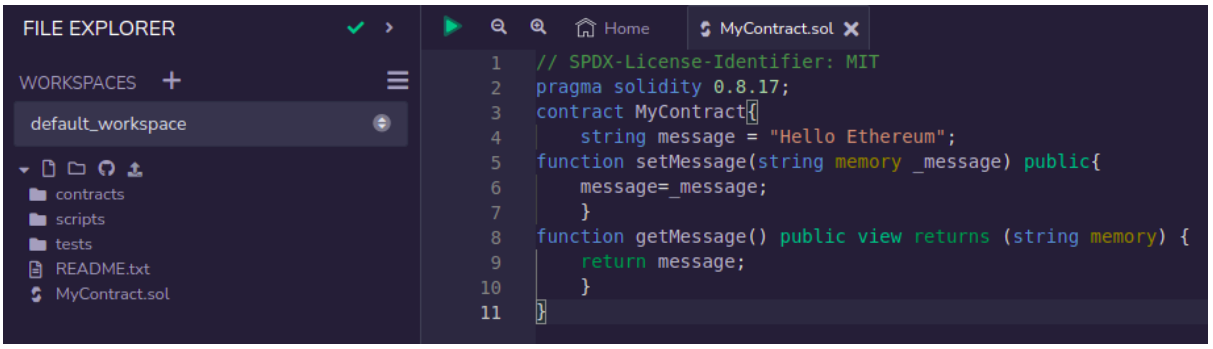


On the left, under workspaces, click on icon to **create a new file**. Name it *MyContract.sol*

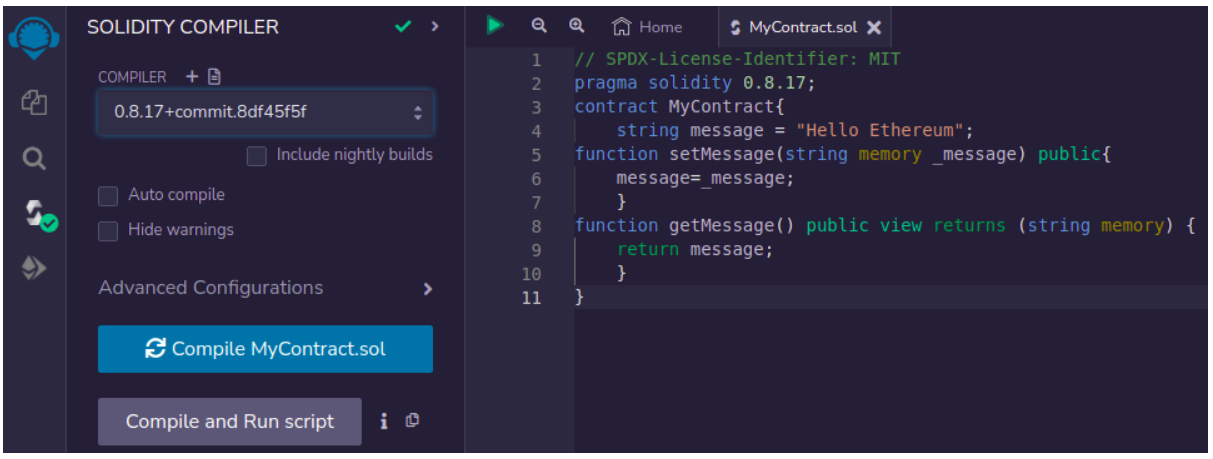


Copy and paste the below smart contract code into MyContract.sol

```
// SPDX-License-Identifier: MIT

pragma solidity 0.8.17;

contract MyContract{

    string message = "Hello Ethereum";

function setMessage(string memory _message) public{

    message=_message;

    }

function getMessage() public view returns (string memory) {

    return message;

    }

}
```



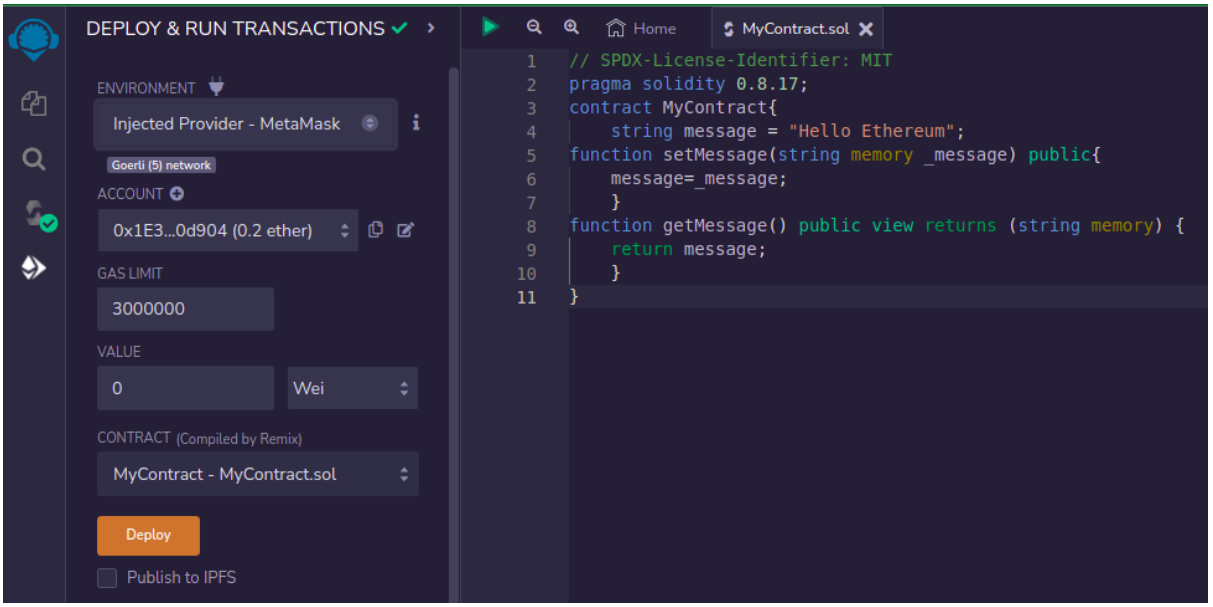
Go to Solidity compiler and select the version as 0.8.17, since our smart contract uses that version.



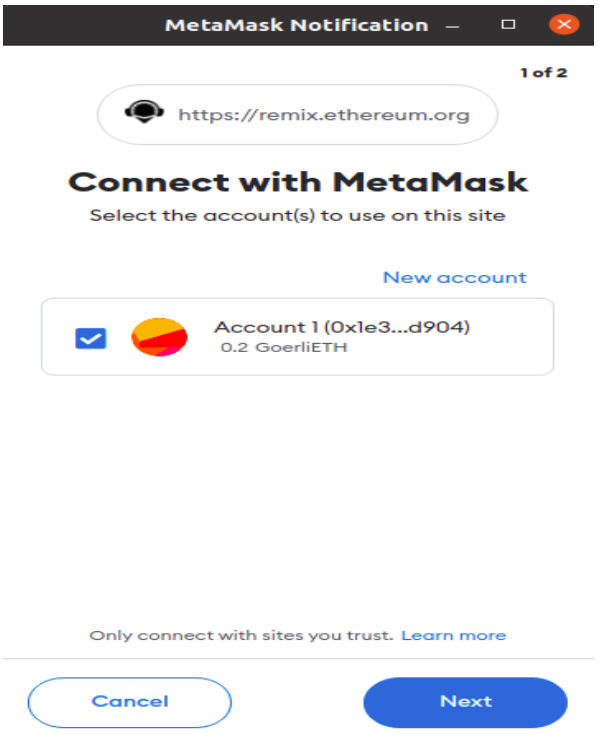
Save and click on ***Compile MyContract.sol***. Make sure you get a green tick on compiler icon.

Deploying Smart Contract using Metamask

Click on deploy and run transactions tab. Select the environment as Injected Provider-Metamask.



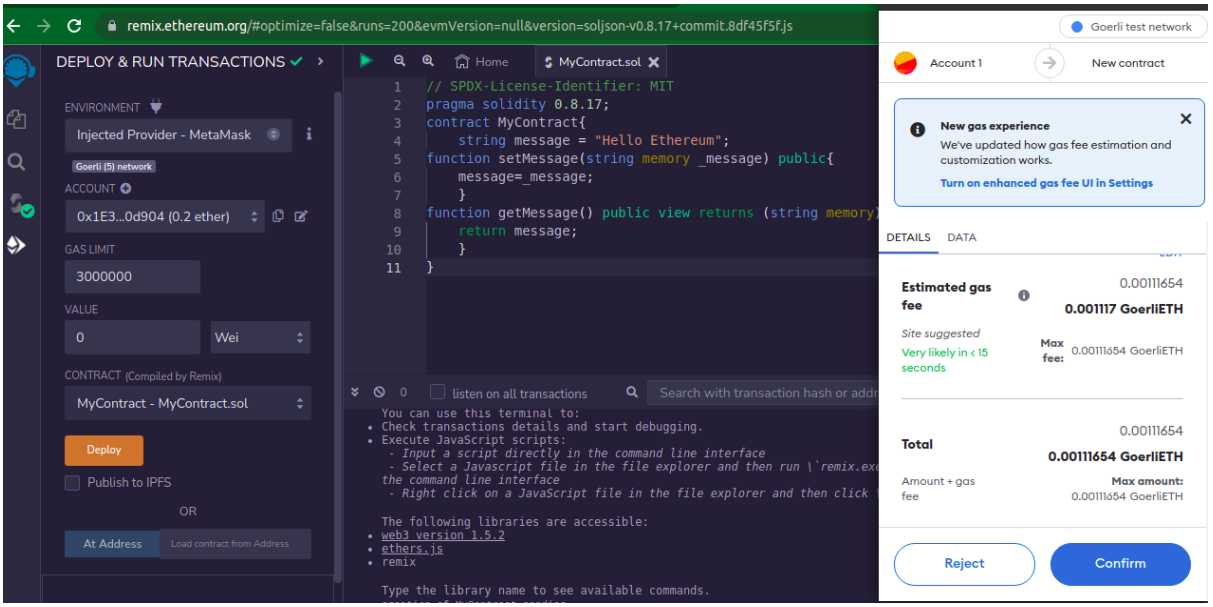
Metamask will give a notification to confirm connection with RemixIDE. Click on **Next**.



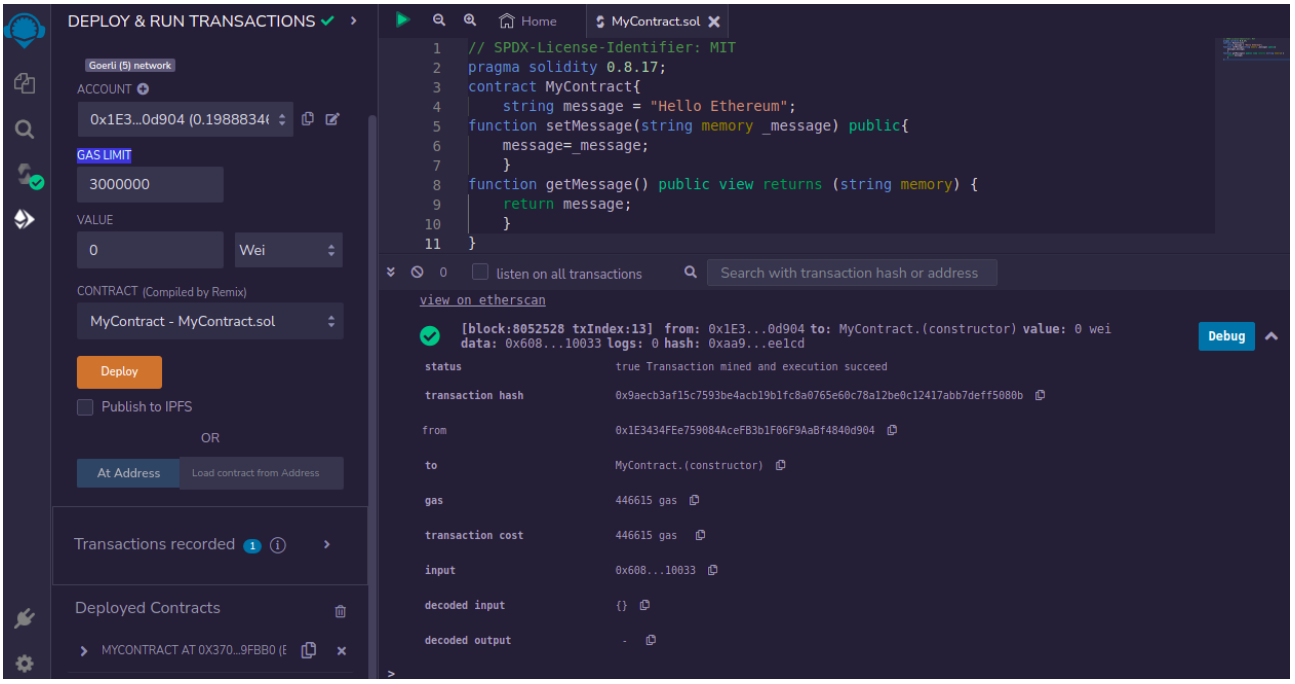
Once connection is established, Metamask accounts will be listed in the Remix IDE.

Deploying Smart Contract

Click on **Deploy**. Metamask popup will ask for transaction confirmation. Click on **confirm**



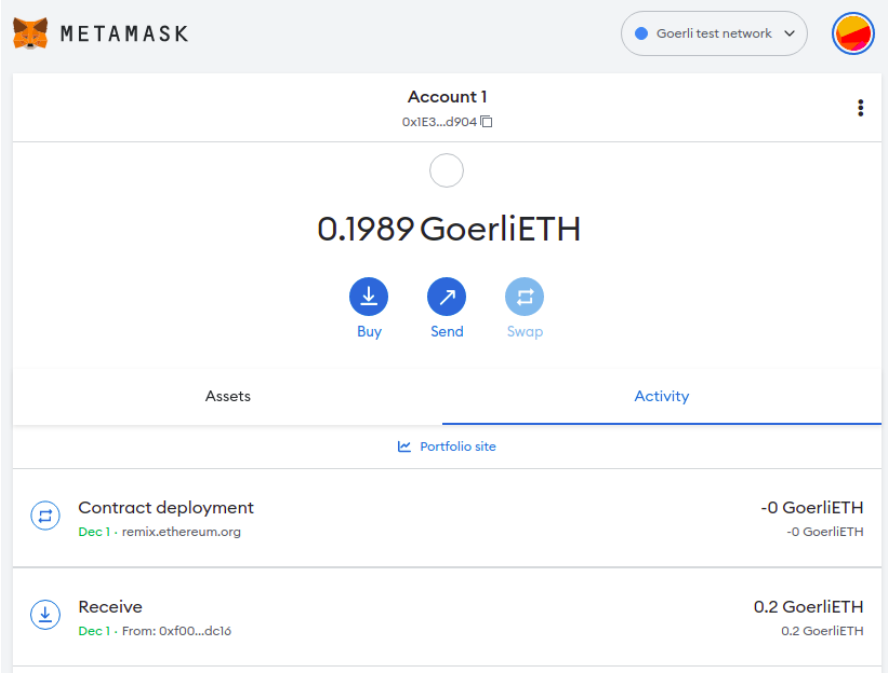
After few seconds, transaction will be committed to the Goerli blockchain and you will get a popup confirmation. The details will be available in the terminal below the editor also.



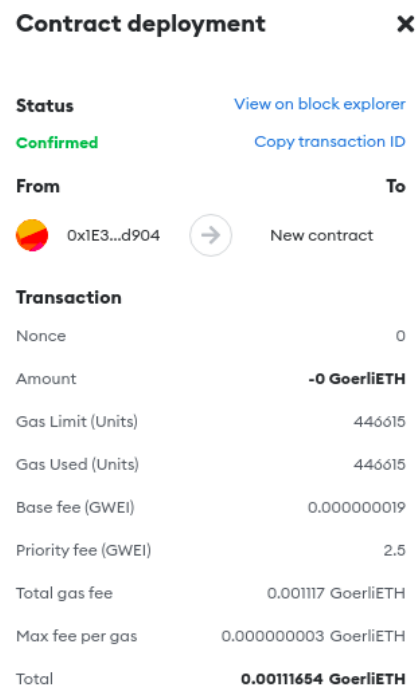
On the terminal below the editor, click on the arrow next to Debug button. It will expand the transaction details. On the left pane, under Deployed Contracts, an instance of the contract will be available.

Viewing transaction details on Etherscan

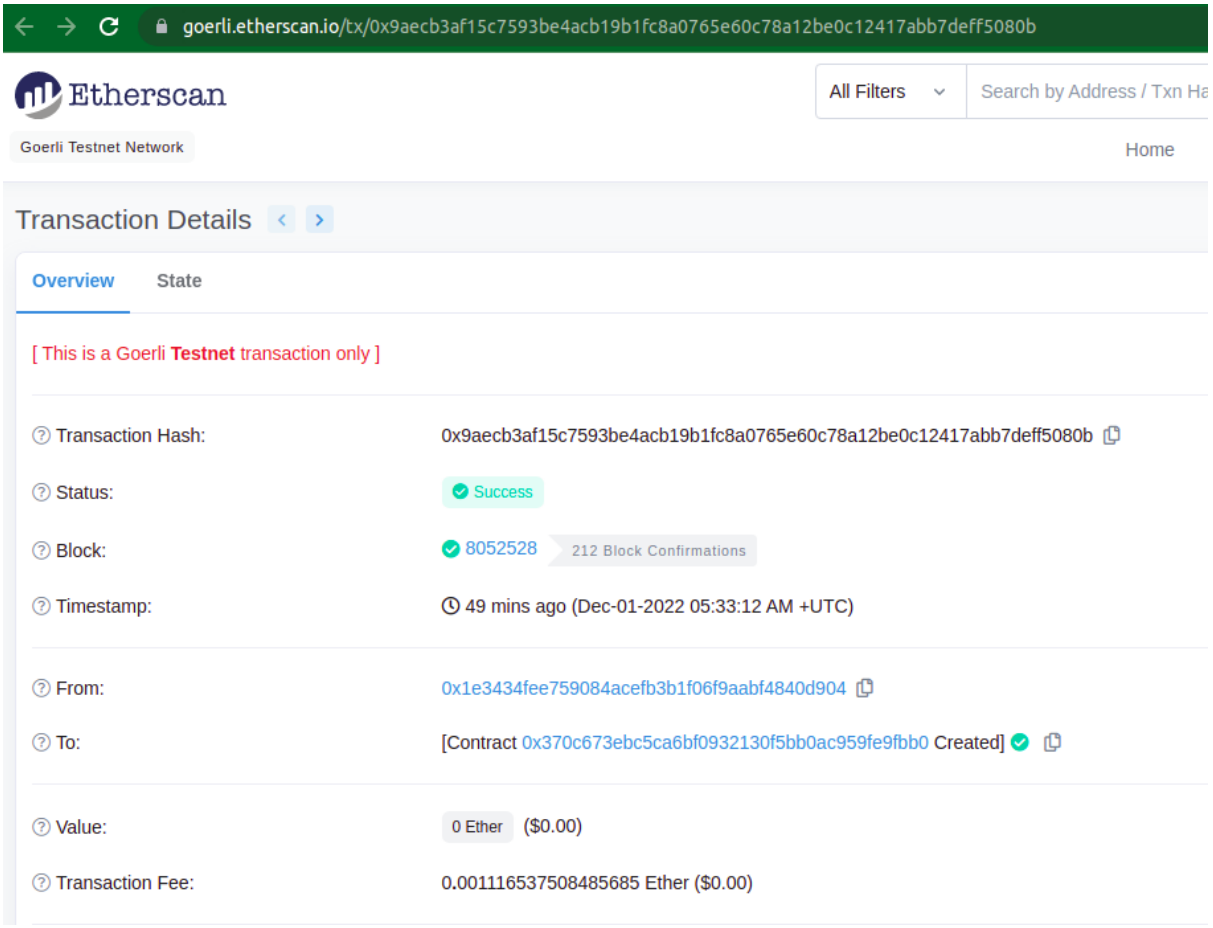
Transaction details can be viewed either by clicking on view on etherscan option in the terminal, or browsing the transaction history in metamask.



Click on **contract deployment** transaction to see its details.

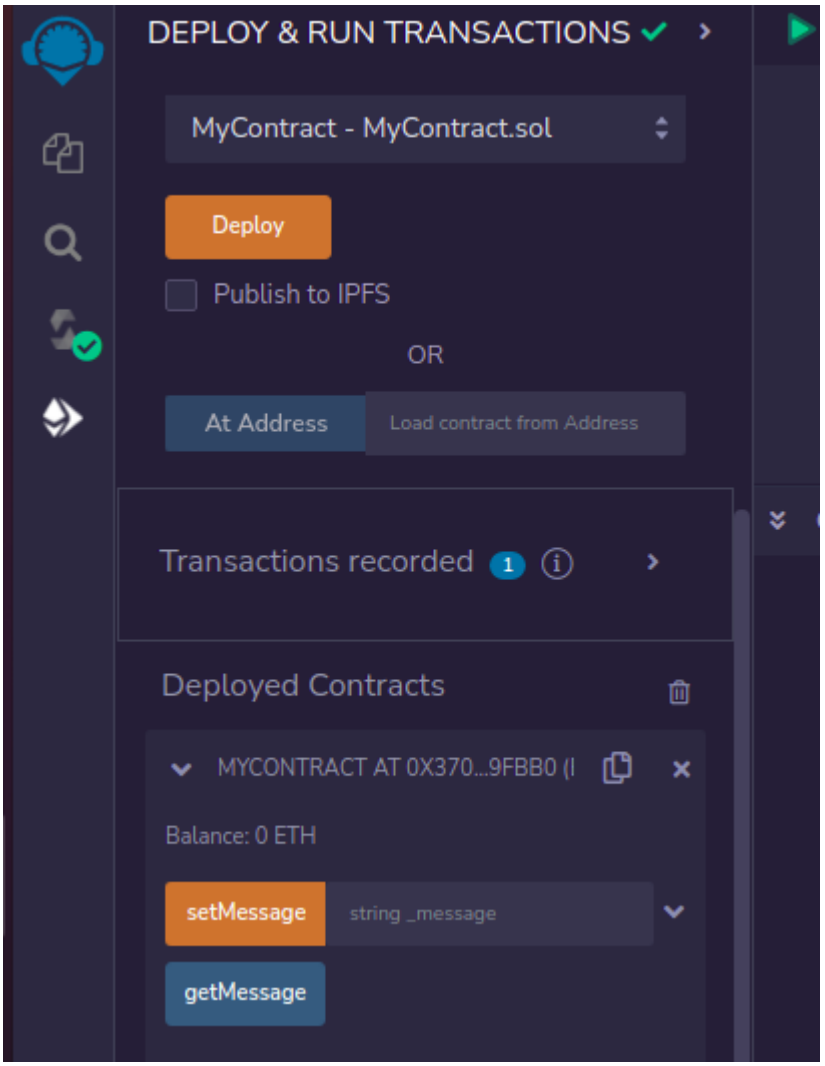


Click on **view on block explorer**. The etherscan page displaying the transaction details will be displayed in the browser.

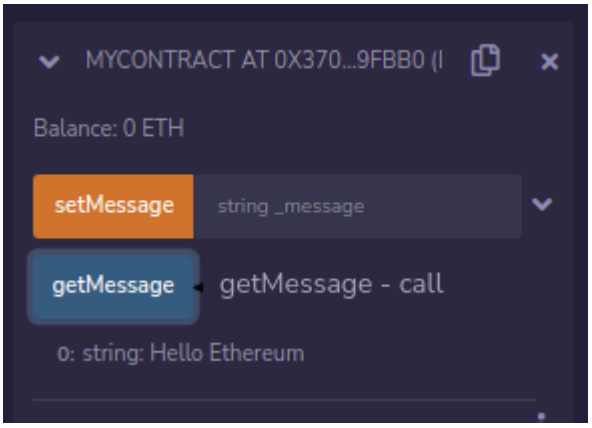

goerli.etherscan.io/tx/0x9aecb3af15c7593be4acb19b1fc8a0765e60c78a12be0c12417abb7deff5080b
Etherscan
Goerli Testnet Network
All Filters
Search by Address / Txn Ha
Home
Transaction Details
Overview
State
[This is a Goerli Testnet transaction only]
Transaction Hash:
0x9aecb3af15c7593be4acb19b1fc8a0765e60c78a12be0c12417abb7deff5080b
Status:
Success
Block:
8052528
212 Block Confirmations
Timestamp:
49 mins ago (Dec-01-2022 05:33:12 AM +UTC)
From:
0x1e3434fee759084acefb3b1f06f9aabf4840d904
To:
[Contract 0x370c673ebc5ca6bf0932130f5bb0ac959fe9fbb0 Created]
Value:
0 Ether
($0.00)
Transaction Fee:
0.001116537508485685 Ether ($0.00)

Interact with Smart Contract in Remix IDE

Expand the MyContract instance under Deployed Contracts



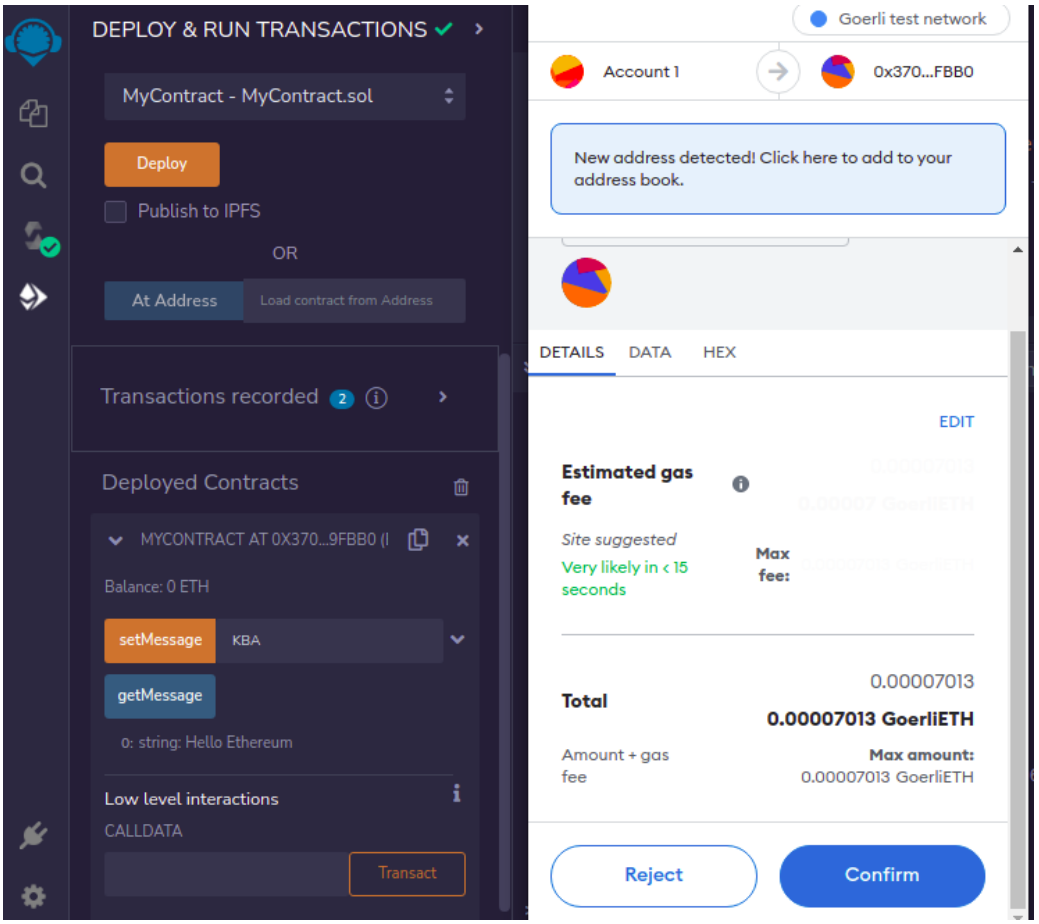
Click on the **getMessage** button.



The value of message will be displayed below the button

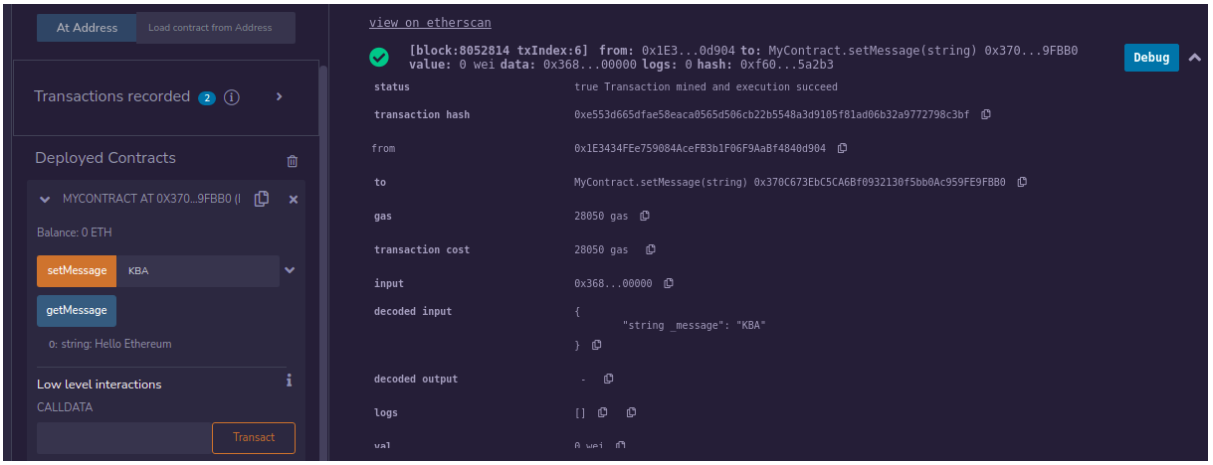
Now try the setMessage function.

Enter text next to the setMessage button and click on **setMessage** button.



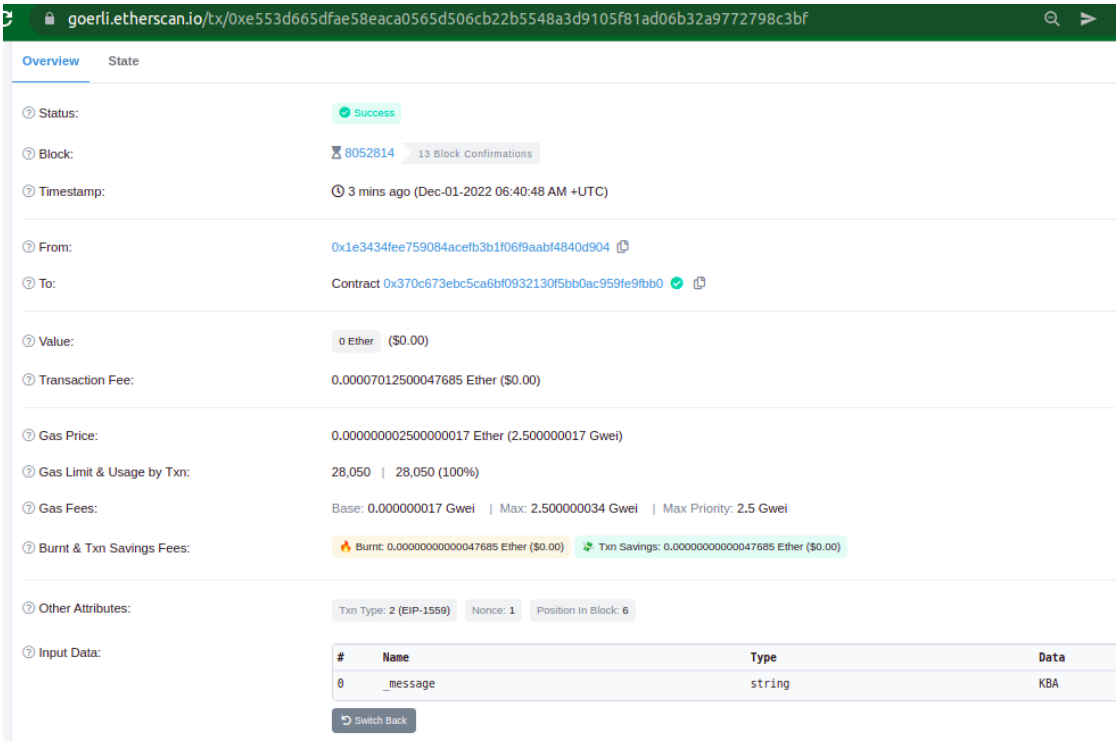
The Remix IDE will now try to send the function through its Metamask connection. The Metamask will ask for confirmation. Press **Confirm**.

After few seconds, you will be notified of transaction confirmation. Now check the terminal/Metamask for transaction details.

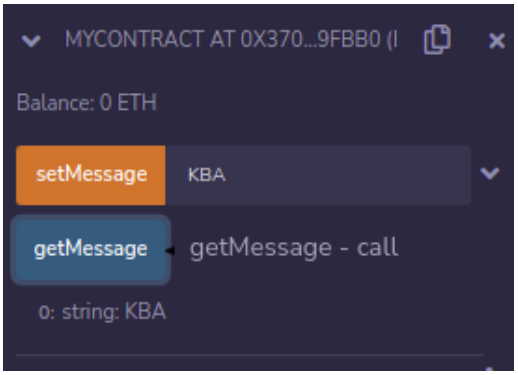


Click on **view on Etherscan** in the terminal or expand the transaction history in Metamask and click on **view on block explorer**

In the etherscan page, check the field **input data**. Use the **decode** option to view the parameters.



Now the value of message is set to KBA. Try to call the ***getMessage*** function again to confirm the change.



***Note**: The setMessage function alters the value of a state variable. Hence it is a transaction which has an associated gas cost, as mentioned in the Metamask notification. The getMessage function reads from the blockchain state. Since it does not alter the state, it is a call operation which does not have any transaction cost.*

Read more about MetaMask, Smart Contracts,Interacting with Smart Contract and Converting smart contract to DApp

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  - Profile: https://www.linkedin.com/in/kerala-blockchain-academy/
  - Community: https://www.linkedin.com/groups/13861449/