**Experiment No. 4**

Aim:

Creating a MetaMask wallet and performing the transactions to add Ethersand Tokens.

Theory:

Step 1: Create a wallet at meta-mask

- Install MetaMask in Chrome browser and enable it. After installation, click on its iconon the top right of the browser page. It will open in a new tab of the browser. Click on "Create Wallet" and click "I agree" to proceed further. Now you are agreeing to the terms and conditions. Create a password and then it will send you a secret backup phrase used for backing up and restoring the account.
- It should not be disclosed or shared with anyone, as this phrase can steal your Ethers. Ensure that you are in the "Main Ethereum Network." If you find a checkmark next to "Main Ethereum Network", you are in the right place. You can see following pages.
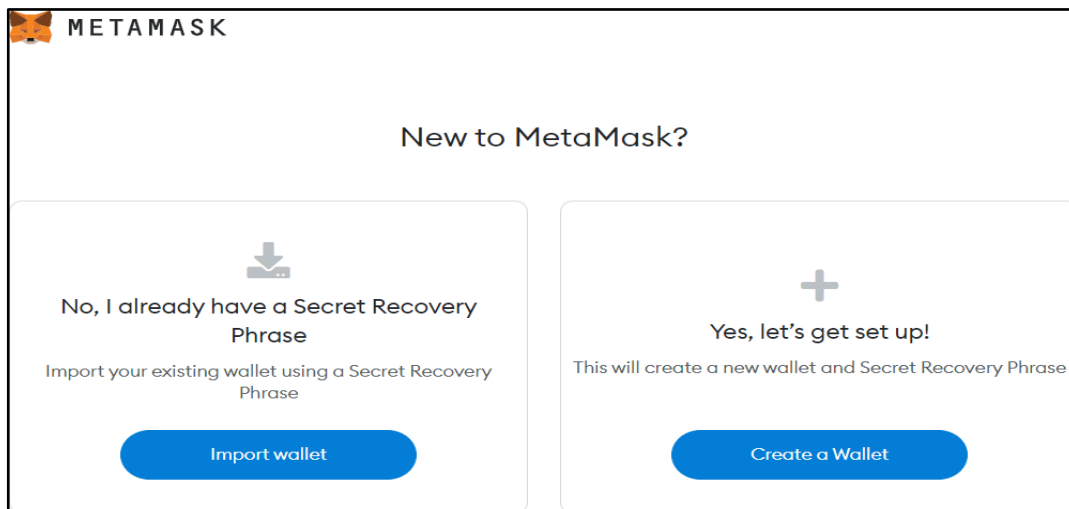
METAMASK

< Back

Secret Recovery Phrase

Your Secret Recovery Phrase makes it easy to back up and restore your account.

WARNING: Never disclose your Secret Recovery Phrase. Anyone with this phrase can take your Ether forever.

mechanic omit honey slim pony casino brush bag amused knife clarify spin

Tips:

Store this phrase in a password manager like 1Password.

Write this phrase on a piece of paper and store in a secure location. If you want even more security, write it down on multiple pieces of paper and store each in 2 - 3 different locations.

Memorize this phrase.

Download this Secret Recovery Phrase and keep it stored safely on an external encrypted hard drive or storage medium.

METAMASK

< Back

Confirm your Secret Recovery Phrase

Please select each phrase in order to make sure it is correct.

METAMASK   ● Ethereum Mainnet ∨

Account 1
0x352...38DE

0 ETH
$0.00 USD

↓ Buy   ↗ Send   ⇄ Swap

Assets   Activity

◆ 0 ETH
$0.00 USD   >

Don't see your token?
Refresh list or import tokens

Step 2: Select any one test network

Click on show networks. Enable show networks and other information. Following test networks can be seen in your MetaMask wallet. These networks are only for the purpose of testing and ethers involved in it have no value.

- Ropsten Test Network
- Kovan Test Network
- Rinkeby Test Network
- Goerli Test Network

Select Ropsten Test Network.
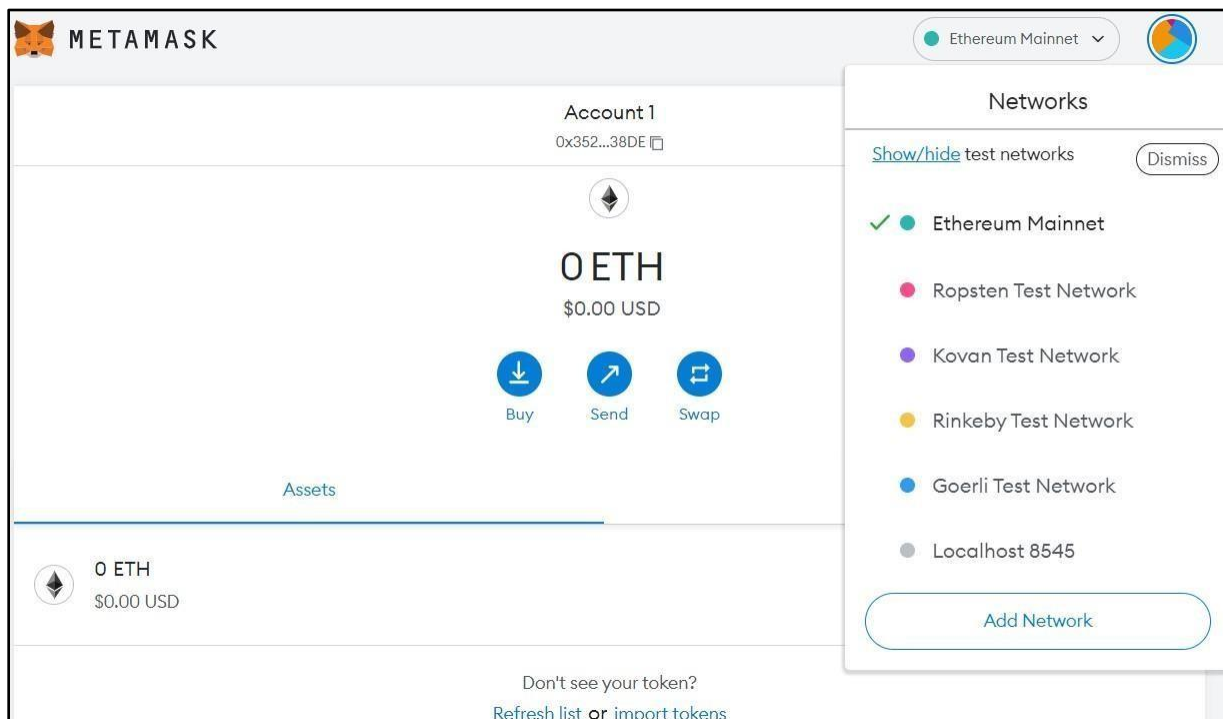
Step 3: Add some dummy Ethers to your wallet
- To test the smart contract, your MetaMask wallet should contain some dummy ethers. For example, if you test a contract using the Ropsten test network, select it and you will find 0 ETH as the initial balance in your account. Click on the "Deposit" and "Get Ether" buttons under
- Test Faucet in order to add dummy ethers. Open site https://faucet.metamask.io/. Link your wallet account and add one dummy ether. You will receive one ether in account as below. Click Request 1 Ether from faucet.

- Click on Buy button. Buy test ethers

Step 4: Compile and Deploy following contract in Ethereum Remix IDE. Give name to file token.sol. Deploy by selecting **token.sol**. **Select Environment as Injected Provider-MetaMask.**

```solidity
pragma solidity ^ 0.6.6;

contract calculator { uint c;

function add(uint a, uint b) public { c = a + b;
}

function sub(uint a, uint b) public { c = a - b;
}
```

```
function mul(uint a, uint b) public {

c = a * b;
}

function div(uint a, uint b) public {
require(b > 0, "The second parameter should be greater than zero.");c = a / b;
}

function getResult() public view returns (uint x) {return c;
}
}
```
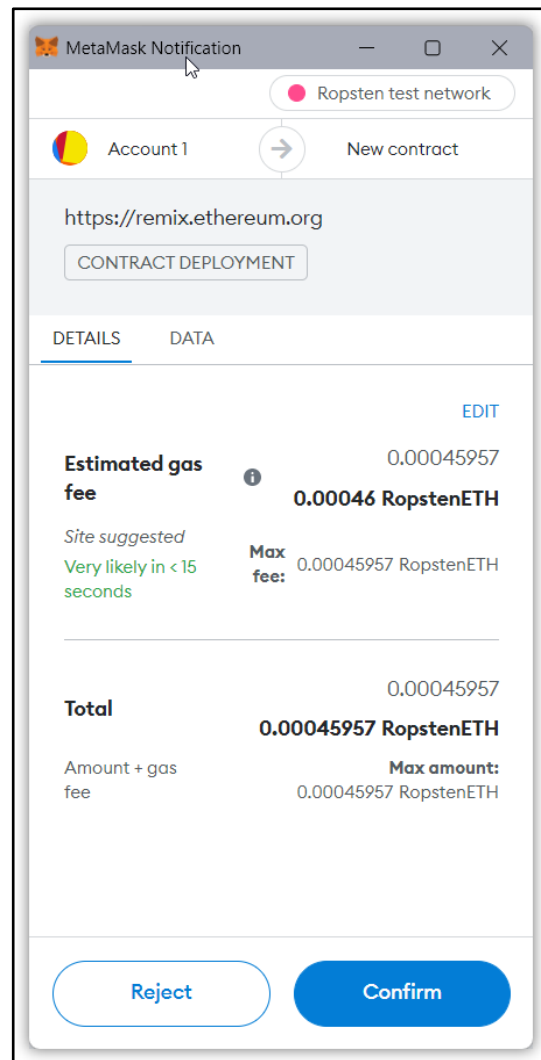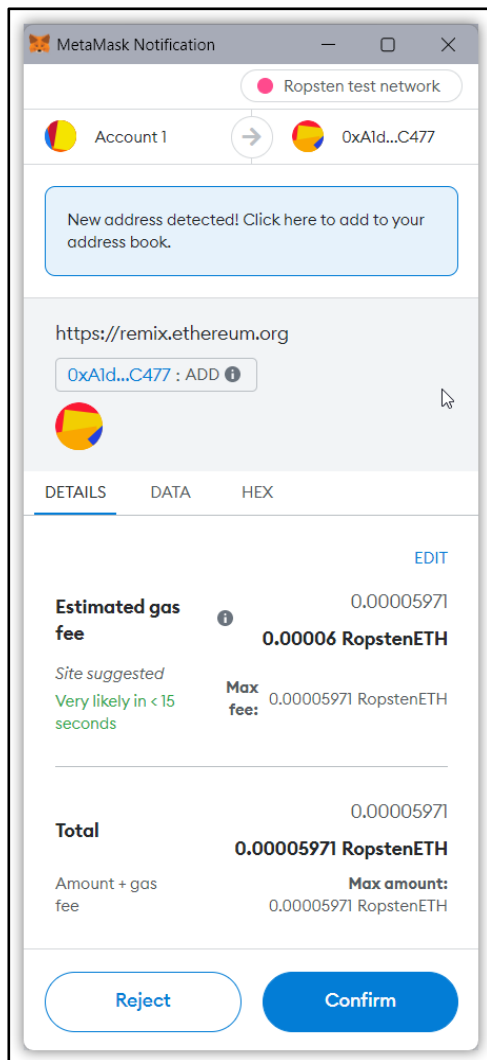
Step 5: Perform an Add transaction by entering two integer parameters and click on "transact". On the MetaMask notification window, confirm the transaction. After the transaction is successful, click on get Result.

Deployed Contracts

CALCULATOR AT 0X9CF...CEFCF (BLOC

Balance: 0 ETH

add

a: 3

b: 5

Calldata   Parameters   transact

div   uint256 a, uint256 b

mul   uint256 a, uint256 b

sub   uint256 a, uint256 b

getResult

0: uint256: x 8

MetaMask Notification

Ropsten test network

Account 1   →   0x9cF...eFCF

New address detected! Click here to add to your address book.

https://remix.ethereum.org

0x9cF...eFCF : ADD

DETAILS   DATA   HEX

EDIT

Estimated gas fee   0.00010925
0.000109 RopstenETH

Site suggested
Very likely in < 15 seconds   Max fee: 0.00010925 RopstenETH

Total   0.00010925
Amount + gas fee   **0.00010925 RopstenETH**
Max amount:
0.00010925 RopstenETH

Reject   Confirm

METAMASK   Ropsten test network

Add   ✕

Status   View on block explorer
Confirmed   Copy transaction ID

From   **To**
0x141...1494   →   0x9cF...eFCF

Transaction
Nonce   5
Amount   **-0 RopstenETH**
Gas Limit (Units)   43699
Gas Used (Units)   43699
Base fee (GWEI)   0.000000009
Priority fee (GWEI)   2.5
Total gas fee   0.000109 RopstenETH
Max fee per gas   0.000000003 RopstenETH
Total   **0.00010925 RopstenETH**
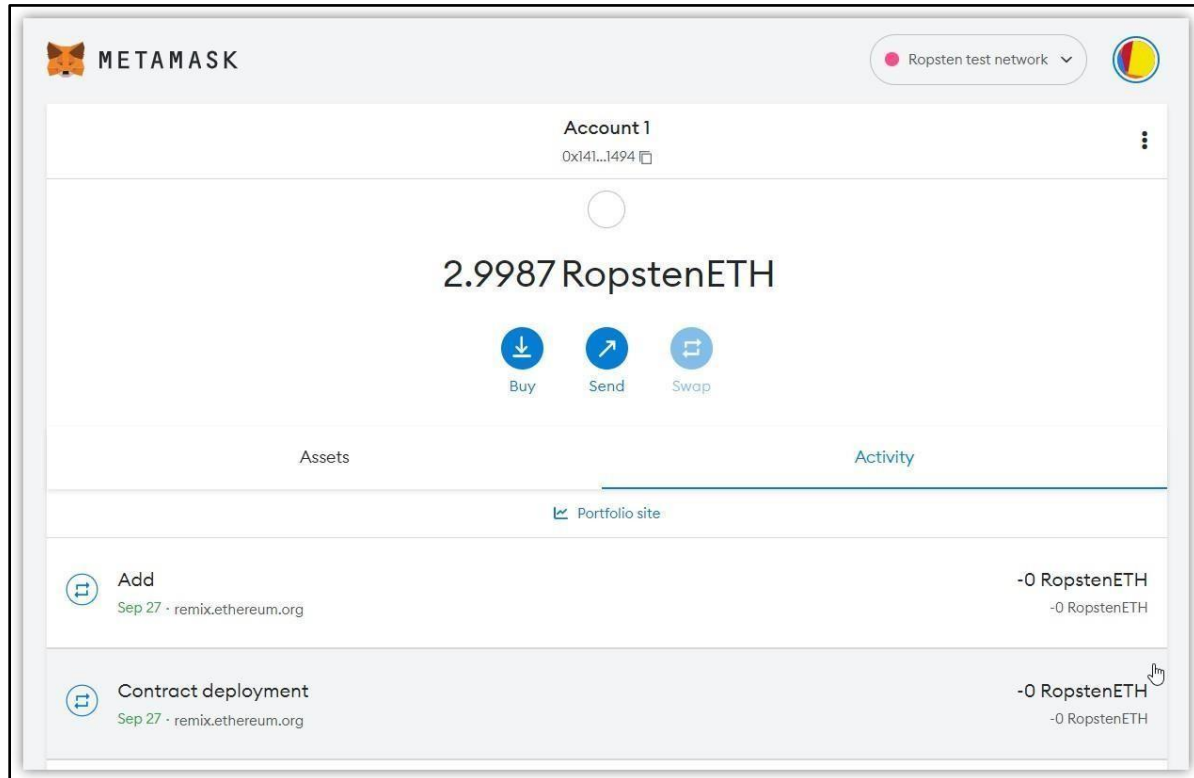
+ Activity log

+ Transaction data

Assets   Activity

Add   -0 RopstenETH
Sep 27 · remix.ethereum.org   -0 RopstenETH

Contract deployment   -0 RopstenETH
Sep 27 · remix.ethereum.org   -0 RopstenETH

Add   -0 RopstenETH

Conclusion:

Q. How do you create a MetaMask wallet and perform transactions to add Ether and tokens to your wallet?