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## Applied and Action Learning

(Learning by Doing and Discovery)

### Name of the Experiment : Know Your TX – Dissecting a Transaction

### Objective/Aim :

To analyze the internal structure and behavior of a blockchain transaction by using a transaction hash and exploring it through a blockchain explorer (Sepolia Testnet)

### Apparatus/Software Used:

- 🕒 MetaMask Wallet (Testnet enabled)
- 🕒 Sepolia Testnet ETH
- 🕒 Sepolia Etherscan
- 🕒 Web browser and internet
- 🕒 Ethereum test contract (for interaction)

### Theory/Concept:

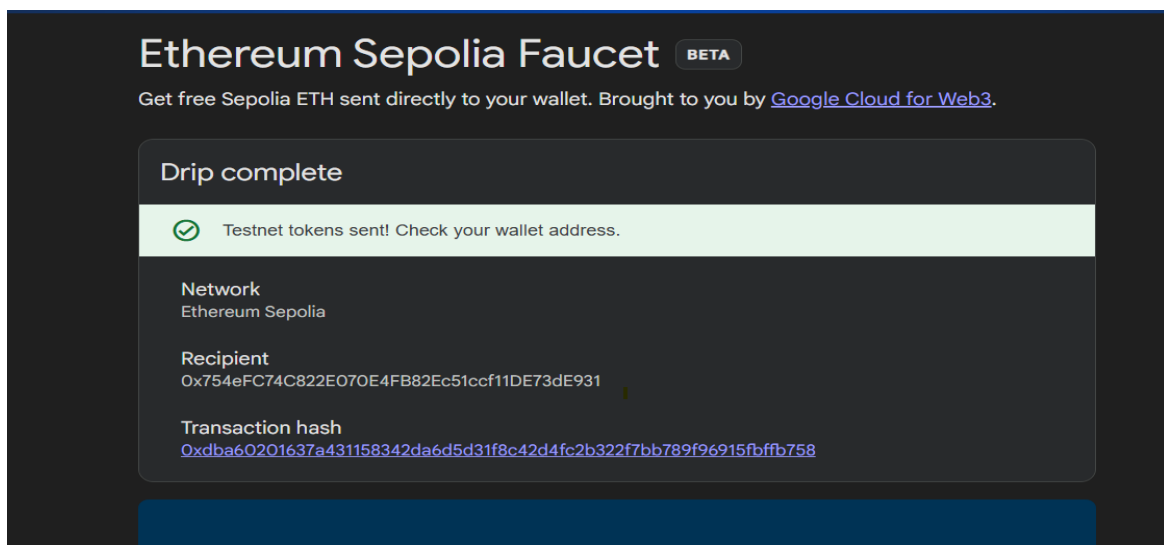
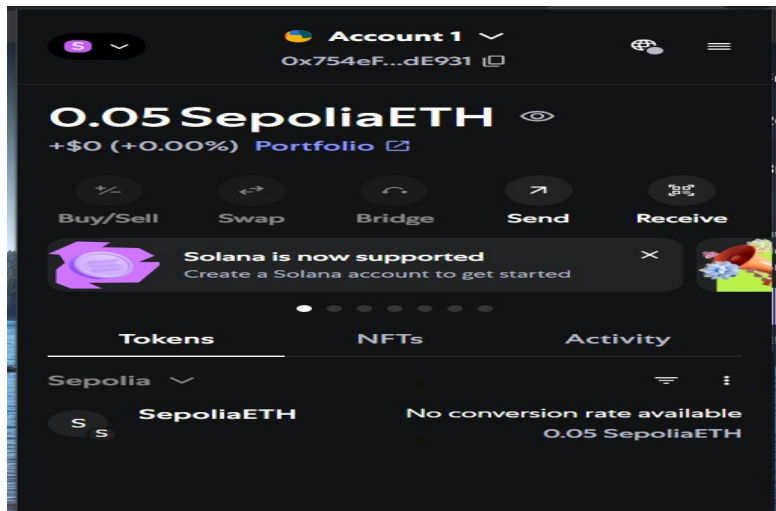
A **transaction (TX)** on the Ethereum blockchain represents an action initiated by an externally owned account (EOA). Transactions may transfer ETH or interact with smart contracts. Key parts of a transaction include:

- **TX Hash** – unique ID of the transaction
- **From** – sender address
- **To** – receiver or contract address
- **Value** – amount of ETH transferred
- **Gas Fee** – amount paid to miners/validators
- **Status** – success or failure
- **Block** – block number where TX was recorded

## Procedure:

### 1. Setup MetaMask for Sepolia Testnet:

- Open the **MetaMask** browser extension or mobile app.
- Enable **Sepolia Test Network** from the network list.
- Make sure you have some **test ETH** in your wallet



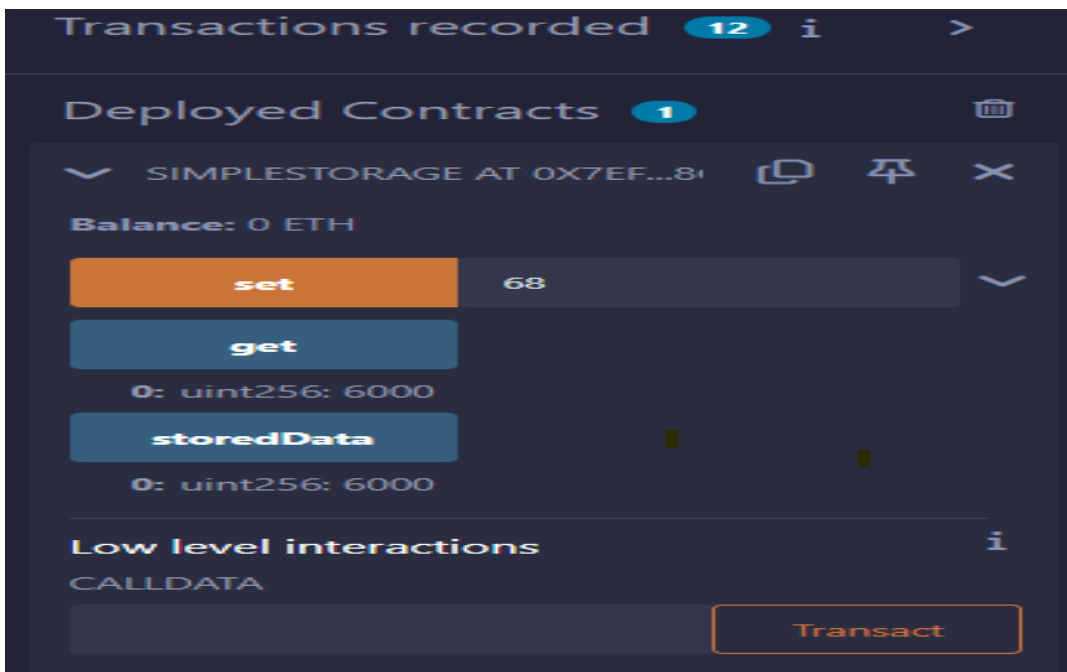
### 2. Interact with a Smart Contract:

- Visit a platform like **Remix IDE** or any dApp connected to Sepolia.
- Use MetaMask to **call a function** on a deployed **smart contract** (e.g., a counter contract or any public method).
- Submit the transaction

```
1 // SPDX-License-Identifier: MIT
2 pragma solidity ^0.8.0;
3 contract SimpleStorage{
4     uint public storedData;
5
6
7     constructor(uint _data) { infinite gas 73800 gas
8     {
9         storedData = _data;
10    }
11
12    function set(uint x) public { 22514 gas
13    {
14        storedData = x; DUP1 costs 3 gas - this line costs 5023 gas - 9019 gas left
15    }
16
17    function get() public view returns (uint) { 2453 gas
18    {
19        return storedData;
20    }
21 }
```

### 3. Copy the Transaction Hash (TX Hash):

- After sending the transaction, MetaMask will show a **TX hash** (a long alphanumeric string).
- This hash is a **unique identifier** for your transaction on the blockchain.



### 4. Open Sepolia Etherscan:

- Go to <https://sepolia.etherscan.io>.
- Paste the **transaction hash** in the search bar and hit **Enter**

Contract 0x7EF2e0048f5bAeDe046f6BF797943daF4ED8CB47

&lt;/&gt; API

## Overview

## ETH BALANCE

6.212313380497664202 ETH

## TOKEN HOLDINGS

\$0.00 (14 Tokens)

## More info

## CONTRACT CREATOR

0x5B38Da6a...f56beddC4 | 2 yrs 248 days ago

## Multichain Info

N/A

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BaseScan

Etherscan

BacScan

polygonscan

SEELSCAN

Transactions Internal Transactions Token Transfers (ERC-20) Contract Events

Latest 25 from a total of 1,022 transactions

Download Page Data

Transaction Hash	Method	Block	Age	From	To	Amount	Txn Fee
0xd76130bfca0...	Transfer	8799740	2 days ago	0x2D5a66bC...8e0dD469b	0x7EF2e004...F4ED8CB47	0.001 ETH	0.00003158
0x0a5d834d9f3...	0x1f5c1cea	8787597	4 days ago	0x80C0Be1B...082E926D2	0x7EF2e004...F4ED8CB47	0 ETH	0.00003349

## 5. Analyze the Transaction Details:

On the transaction page, observe the following:

- **Status:** Success or Failure of the transaction.
- **Block Number:** The block that included your TX.
- **Timestamp:** Exact time and date of confirmation.
- **From & To Address:** Sender (your wallet) and receiver (wallet or contract).
- **Value:** Amount of ETH transferred.
- **Transaction Fee:** Calculated as  $\text{Gas Used} \times \text{Gas Price}$ .
- **Gas Price:** Fee per unit of gas set by the sender.
- **To (Contract):** If the transaction is a contract call, it shows the contract address.



## TRANSACTION ACTION

Transfer 0.001 ETH to 0x7EF2e0048f5bAeDe046f6BF797943daF4ED8CB47

[ This is a Sepolia Testnet transaction only ]

Transaction Hash:	0xd76130bfca0833b45b46971a6a94b29f7f780c4d607c914eea5da866b65f7cfc
Status:	Success
Block:	8799740 17493 Block Confirmations
Timestamp:	2 days ago (Jul-19-2025 08:43:00 PM UTC)
From:	0x2D5a66bCc934Ee901c139eA41426e98e0dD469b
To:	0x7EF2e0048f5bAeDe046f6BF797943daF4ED8CB47
Value:	0.001 ETH
Transaction Fee:	0.00003158250029477 ETH
Gas Price:	1.5000000014 Gwei (0.000000001500000014 ETH)

More Details: + Click to show more

## Observation:

A transaction was sent on the **Sepolia Testnet** and completed successfully. It was included in **block 8787597** and had over **29,000 confirmations**. The **sender address** was `0x80C0 . . .`, and the **receiver** was a smart contract at `0x7EF2 . . .`. No ETH was sent (value = 0), but a **transaction fee of 0.00003349 ETH** was paid. The **gas price** was **1.5 Gwei**, and the transaction status was **successful**.

## ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10		
Planning and Execution/ Practical Simulation/ Programming	10		
Result and Interpretation	10		
Record of Applied and Action Learning	10		
Viva	10		
<b>Total</b>	<b>50</b>		

**Signature of the Student:**

Name :

Regn. No. :

Page No.....

**Signature of the Faculty:**

*\* As applicable according to the experiment.  
Two sheets per experiment (10-20) to be used.*

