School: .................................................................................................. Campus: ......................................................

Academic Year: ...................... Subject Name: ......................................................... Subject Code: .........................

Semester: ............... Program: ....................................... Branch: ......................... Specialization: .........................

Date: ....................................

# Applied and Action Learning

(Learning by Doing and Discovery)

**Name of the Experiement :**

## * Coding Phase: Pseudo Code / Flow Chart / Algorithm

**Process for Dissecting a Transaction**

- Preparing Your Transaction:
  1. Launch your Solidity IDE.
  2. Create a new contract file.
  3. Open MetaMask in your browser.
  4. In MetaMask, switch the network to Ethereum Sepolia.
  5. Copy your wallet address (public key) from MetaMask.
  6. In another browser tab, search for a Sepolia faucet.
  7. Choose the Ethereum Sepolia option.
  8. Enter your wallet address in the input field.
  9. Request Sepolia ETH by clicking Receive Sepolia.
- Analyzing the Transaction:
  1. Write your Solidity contract inside Remix IDE.
  2. Compile the contract.
  3. Go to Deploy & Run Transactions, set the environment to Injected Provider (MetaMask).
  4. Deploy the contract to the Sepolia network.

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

## Coding Phase: Pseudo Code / Flow Chart / Algorithm

**In MetaMask:**

To "dissect" a transaction in MetaMask :

Before sending, you review:

- The sender and recipient addresses.
- The selected blockchain network (such as Ethereum Mainnet or Sepolia).
- The estimated gas fee (including maximum fee per gas and gas limit).
- The type of transaction (for example, ETH transfer, token transfer, or a smart contract interaction).
- The data field, if the action involves a smart contract call.

After sending, you can inspect the transaction through a block explorer (like Etherscan) to view:

- The transaction hash, which is its unique identifier.
- The block number where it was recorded.
- The status (whether it succeeded or failed).
- The exact amount of gas consumed.
- The logs or events generated by the contract.
- The transferred value and the specific function that was executed.

**In Remix IDE:**

When you execute a transaction in Remix (such as calling a smart contract function), it provides detailed analytics of what happened.

You can see:

- The total transaction cost (shown in gas and ETH).
- The execution cost (gas spent excluding deployment overhead).
- The decoded input, which reveals the function name and the parameters passed.
- The decoded output, which shows the returned values.
- The logs, representing events triggered by the smart contract.
- The Debugging panel, which allows you to trace through opcodes, storage updates, and step-by-step execution.

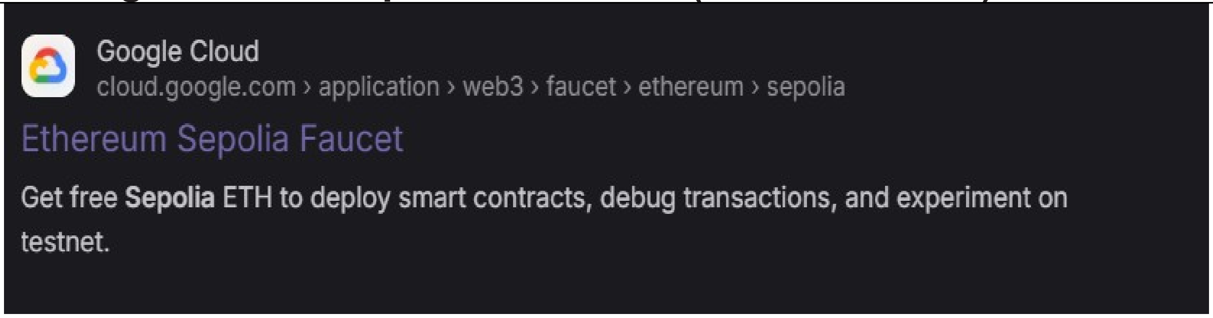
## * Softwares used

Remix IDE

MetaMask Wallet

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

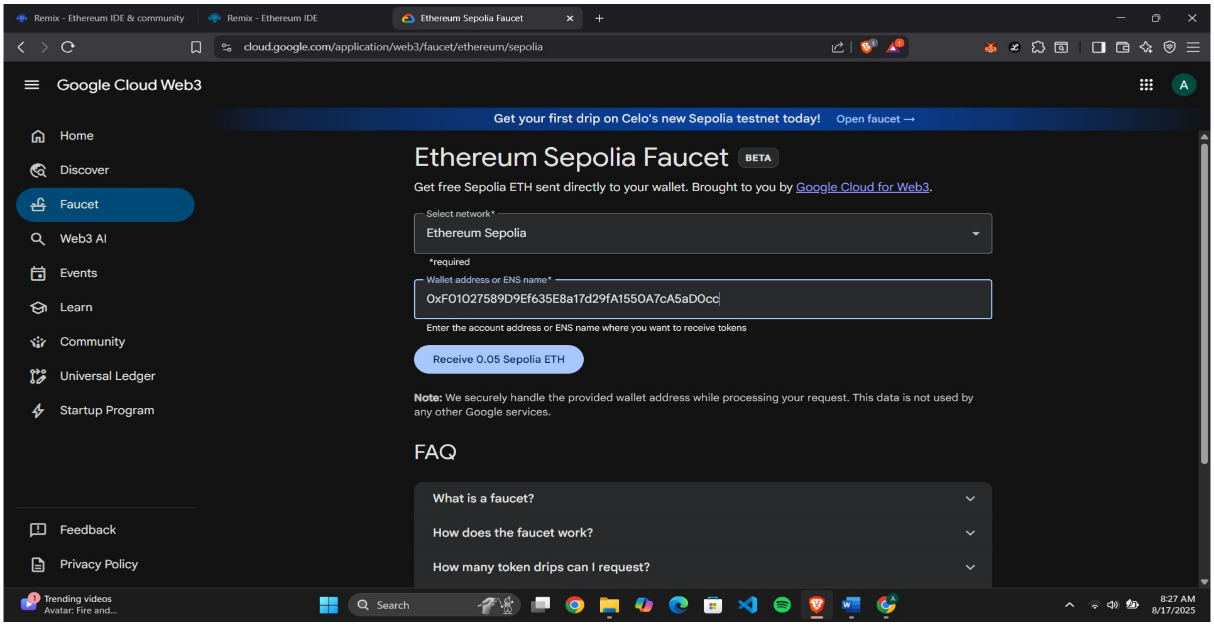
## * Testing Phase: Compilation of Code (error detection)



Google Cloud
cloud.google.com › application › web3 › faucet › ethereum › sepolia

Ethereum Sepolia Faucet

Get free **Sepolia** ETH to deploy smart contracts, debug transactions, and experiment on testnet.



Get your first drip on Celo's new Sepolia testnet today! Open faucet →

Ethereum Sepolia Faucet BETA

Get free Sepolia ETH sent directly to your wallet. Brought to you by Google Cloud for Web3.

Select network*: Ethereum Sepolia

*required

Wallet address or ENS name*: 0xF01027589D9Ef635E8a17d29fA1550A7cA5aD0cc

Enter the account address or ENS name where you want to receive tokens

Receive 0.05 Sepolia ETH

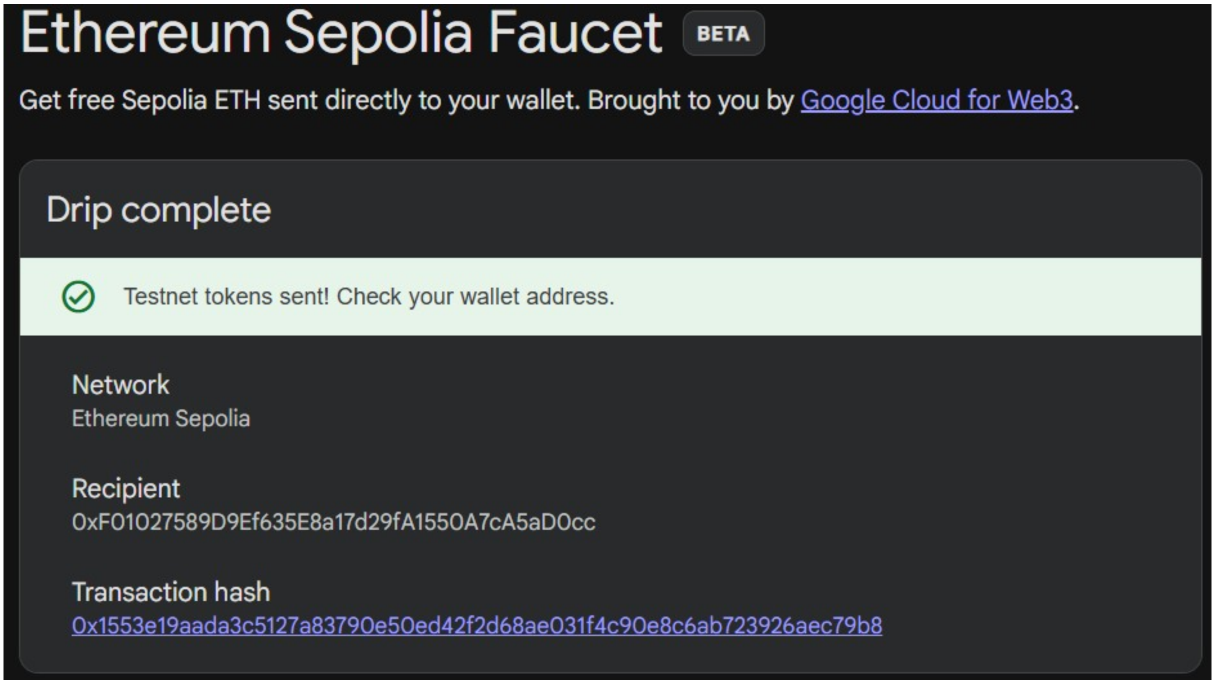
**Note:** We securely handle the provided wallet address while processing your request. This data is not used by any other Google services.

FAQ

What is a faucet?

How does the faucet work?

How many token drips can I request?



Ethereum Sepolia Faucet BETA

Get free Sepolia ETH sent directly to your wallet. Brought to you by Google Cloud for Web3.

Drip complete

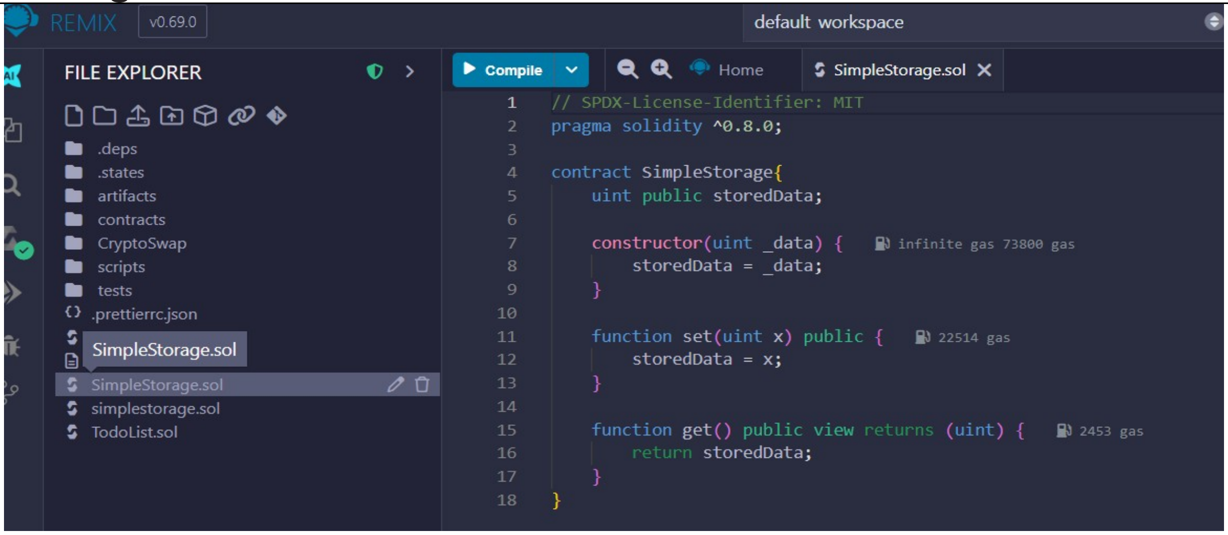
✓ Testnet tokens sent! Check your wallet address.

Network
Ethereum Sepolia

Recipient
0xF01027589D9Ef635E8a17d29fA1550A7cA5aD0cc

Transaction hash
0x1553e19aada3c5127a83790e50ed42f2d68ae031f4c90e8c6ab723926aec79b8

## * Testing Phase



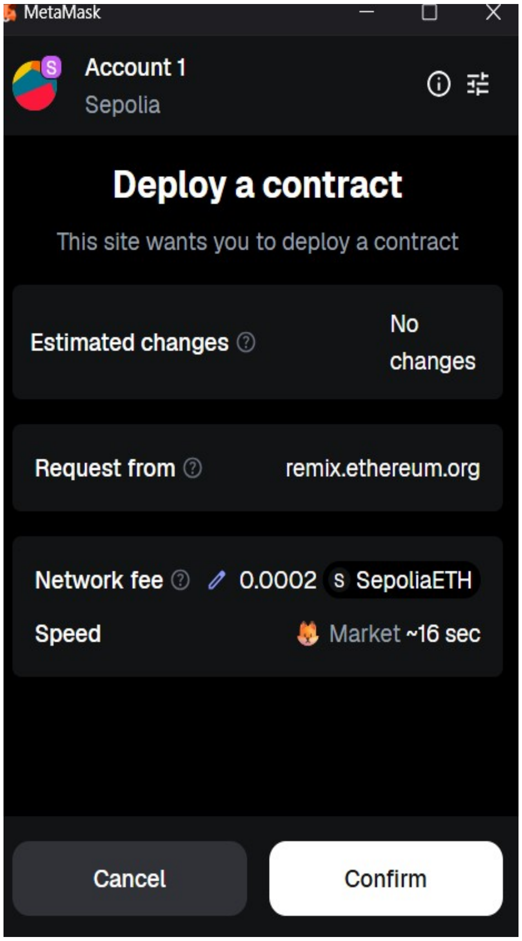
```
// SPDX-License-Identifier: MIT
pragma solidity ^0.8.0;

contract SimpleStorage{
    uint public storedData;

    constructor(uint _data) {
        storedData = _data;
    }

    function set(uint x) public {
        storedData = x;
    }

    function get() public view returns (uint) {
        return storedData;
    }
}
```



**Deploy a contract**

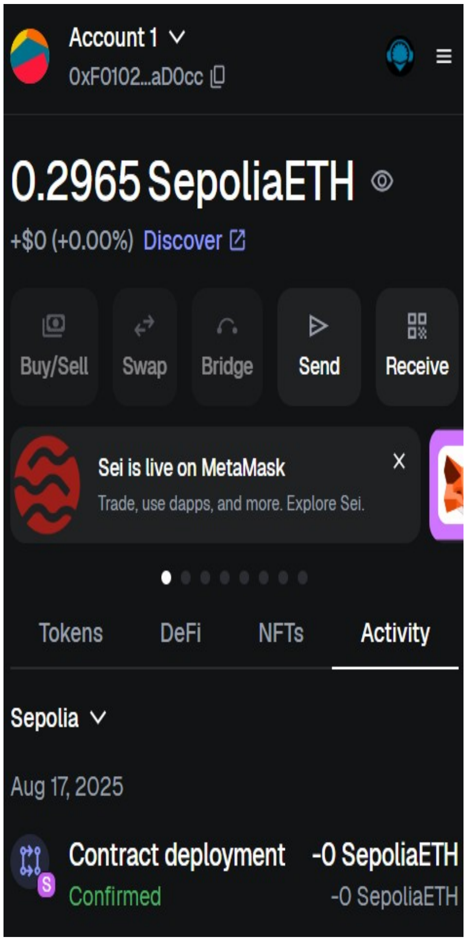
This site wants you to deploy a contract

Estimated changes: No changes

Request from: remix.ethereum.org

Network fee: 0.0002 SepoliaETH

Speed: Market ~16 sec



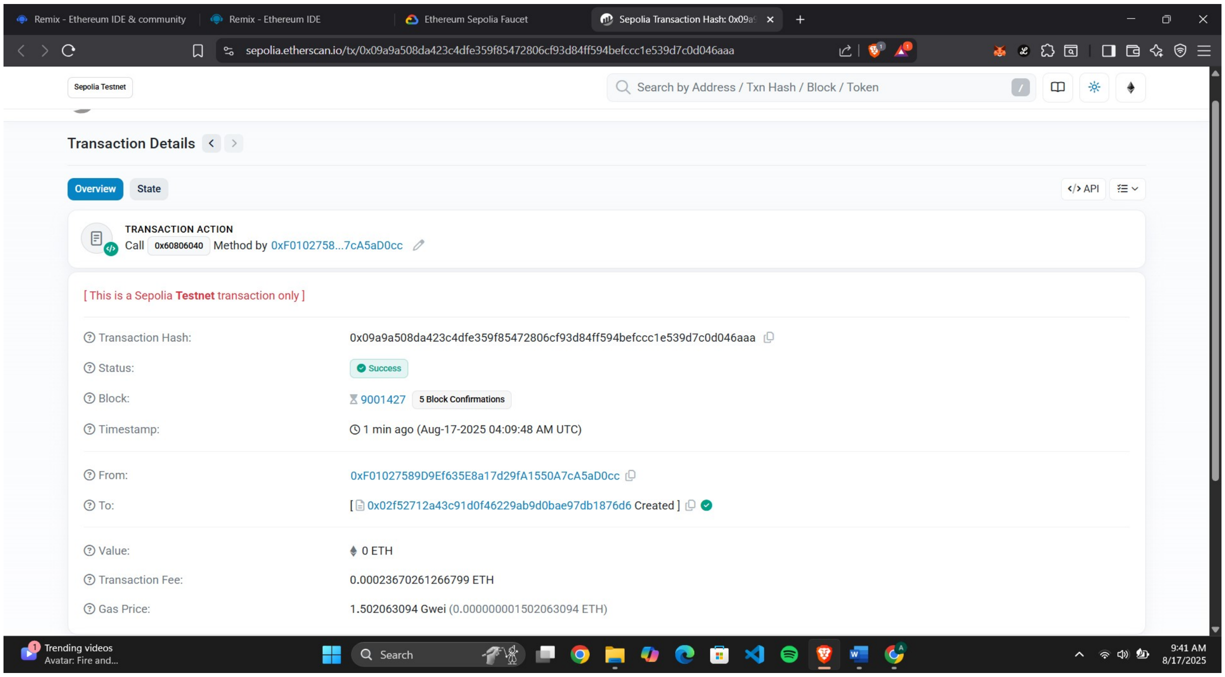
0.2965 SepoliaETH

+$0 (+0.00%) Discover

Aug 17, 2025

Contract deployment -0 SepoliaETH
Confirmed -0 SepoliaETH

# Implementation Phase: Final Output (no error)


Remix - Ethereum IDE & community
Remix - Ethereum IDE
Ethereum Sepolia Faucet
Sepolia Transaction Hash: 0x09a
sepolia.etherscan.io/tx/0x09a9a508da423c4dfe359f85472806cf93d84ff594befccc1e539d7c0d046aaa
Sepolia Testnet
Search by Address / Txn Hash / Block / Token
Overview
State
</> API
Trending videos
Avatar: Fire and...
Search
9:41 AM
8/17/2025

Transaction Details

TRANSACTION ACTION
Call 0x60806040 Method by 0xF0102758...7cA5aD0cc

[ This is a Sepolia **Testnet** transaction only ]

Transaction Hash: 0x09a9a508da423c4dfe359f85472806cf93d84ff594befccc1e539d7c0d046aaa

Status: Success

Block: 9001427 5 Block Confirmations

Timestamp: 1 min ago (Aug-17-2025 04:09:48 AM UTC)

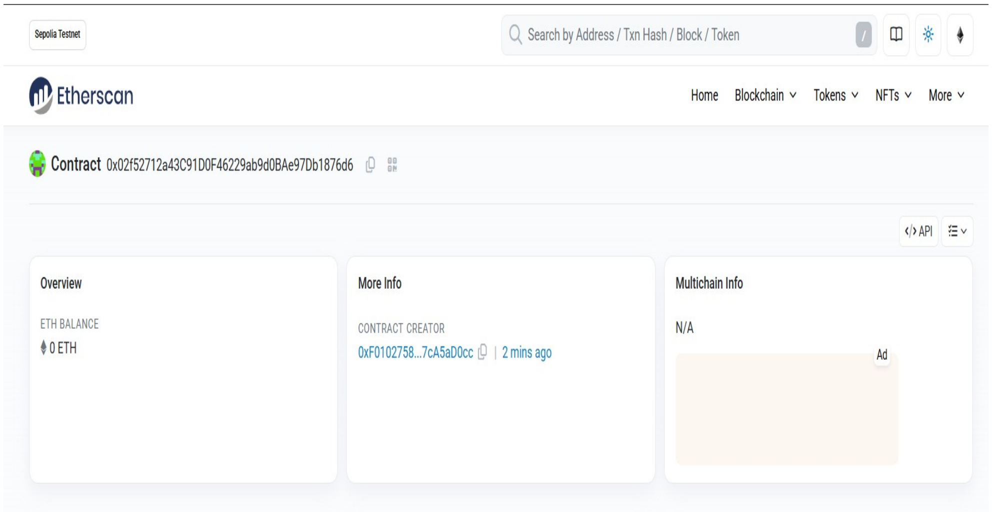
From: 0xF01027589D9Ef635E8a17d29fA1550A7cA5aD0cc

To: [ 0x02f52712a43c91d0f46229ab9d0bae97db1876d6 Created ]

Value: 0 ETH

Transaction Fee: 0.00023670261266799 ETH

Gas Price: 1.502063094 Gwei (0.000000001502063094 ETH)



Contract 0x02f52712a43C91D0F46229ab9d0BAe97Db1876d6

Overview
ETH BALANCE
0 ETH

More Info
CONTRACT CREATOR
0xF0102758...7cA5aD0cc | 2 mins ago

Multichain Info
N/A

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

## * Observations

When dissecting a transaction, you can clearly see how much gas a specific function consumes, giving an idea of its cost. It also allows you to confirm that the transaction reached the correct smart contract and executed as intended. If there are any errors or reverts, you can identify where in the execution they occurred.

You can also check whether the contract emitted the right events with accurate data. By reviewing the gas usage, you may notice unnecessary consumption, which helps in optimizing the contract. Lastly, the transaction details prove who initiated it and the exact time it was executed, ensuring transparency.

## ASSESMENT

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

***Signature of the Student:***

*Name :*

*Regn. No. :*

***Signature of the Faculty:***

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