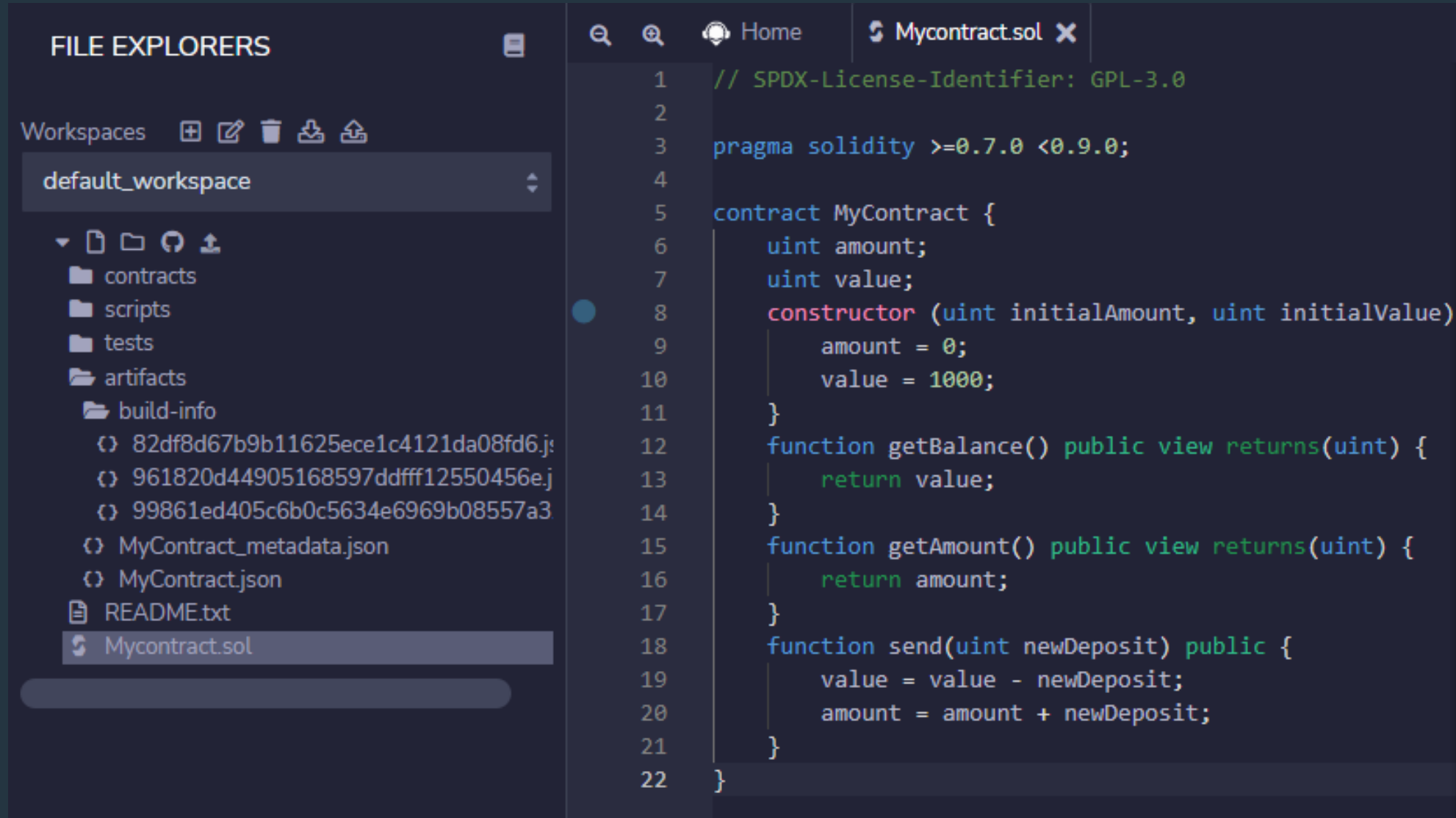


# Ethereum Tutorial

Hanif Shafwan Mahib -- 1103194150

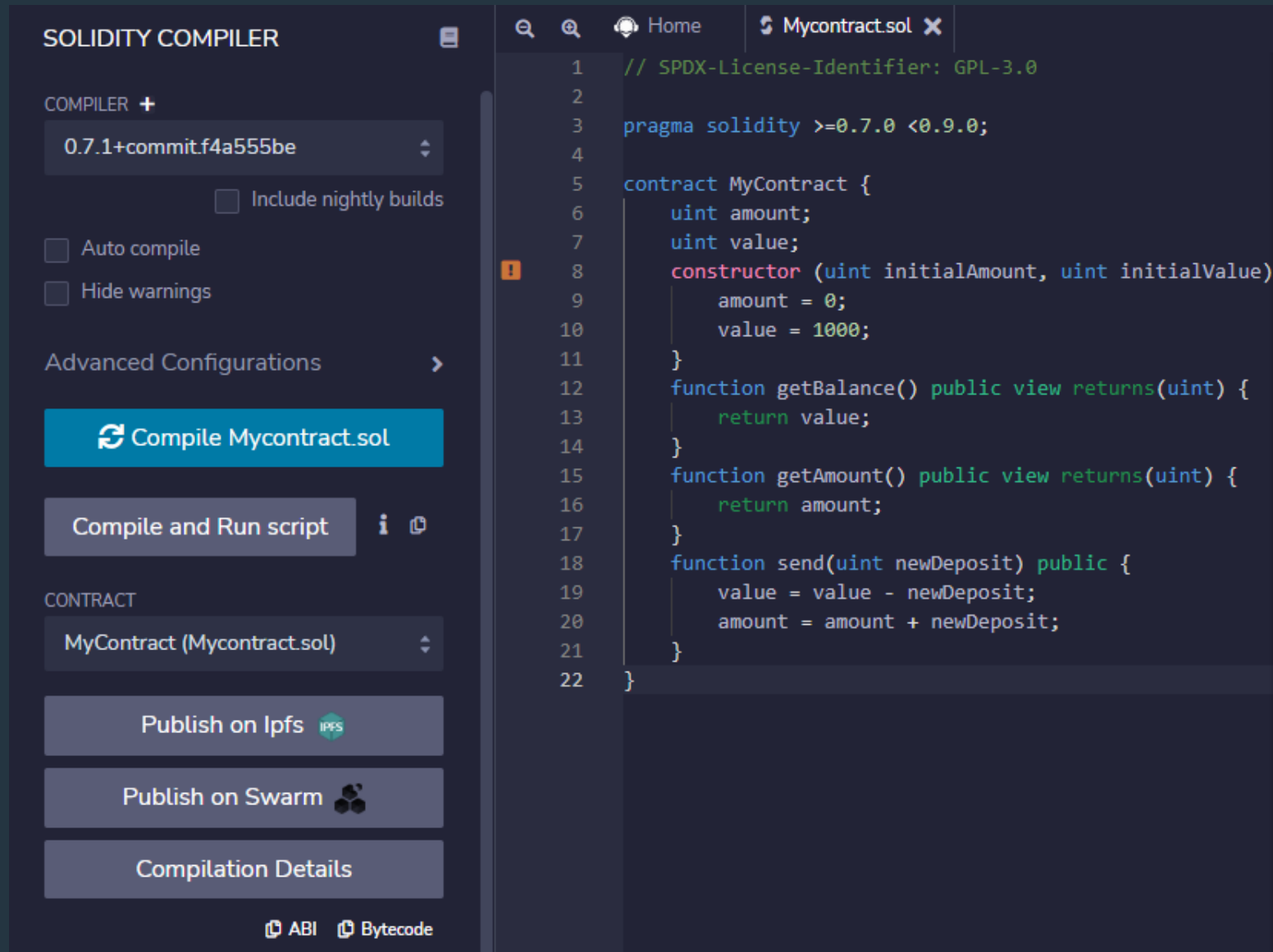
# Membuat Kontrak



The image shows a code editor interface with a dark theme. On the left is a 'FILE EXPLORERS' sidebar showing a file tree for a workspace named 'default\_workspace'. The tree includes folders for 'contracts', 'scripts', 'tests', and 'artifacts', as well as a 'build-info' folder. Under 'build-info', there are three files with long hexadecimal hashes, and two JSON files: 'MyContract\_metadata.json' and 'MyContract.json'. At the bottom of the file list is 'README.txt', and selected at the top is 'Mycontract.sol'. The main editor area on the right displays the code for 'Mycontract.sol'. The code starts with a license identifier, followed by a pragma statement for Solidity version. It then defines a 'MyContract' contract with two state variables, 'amount' and 'value'. The constructor initializes 'amount' to 0 and 'value' to 1000. There are three public functions: 'getBalance()' which returns 'value', 'getAmount()' which returns 'amount', and 'send()' which decreases 'value' by 'newDeposit' and increases 'amount' by 'newDeposit'.

```
1 // SPDX-License-Identifier: GPL-3.0
2
3 pragma solidity >=0.7.0 <0.9.0;
4
5 contract MyContract {
6     uint amount;
7     uint value;
8     constructor (uint initialAmount, uint initialValue)
9     {
10         amount = 0;
11         value = 1000;
12     }
13     function getBalance() public view returns(uint) {
14         return value;
15     }
16     function getAmount() public view returns(uint) {
17         return amount;
18     }
19     function send(uint newDeposit) public {
20         value = value - newDeposit;
21         amount = amount + newDeposit;
22     }
23 }
```

# Melakukan Compile



The screenshot displays the Solidity Compiler web interface. On the left sidebar, the 'COMPILER' section is active, showing version '0.7.1+commit.f4a555be'. Below this are checkboxes for 'Include nightly builds', 'Auto compile', and 'Hide warnings'. The 'CONTRACT' section shows 'MyContract (Mycontract.sol)' selected. At the bottom of the sidebar are buttons for 'Publish on Ipfs', 'Publish on Swarm', and 'Compilation Details', along with links for 'ABI' and 'Bytecode'. The main editor area on the right shows the Solidity code for 'MyContract.sol'. The code includes a license header, a pragma statement for Solidity version, and a contract named 'MyContract' with variables 'amount' and 'value', a constructor, and three functions: 'getBalance', 'getAmount', and 'send'. A red warning icon is visible on line 8 of the code.

**SOLIDITY COMPILER**

COMPILER +  
0.7.1+commit.f4a555be  
☐ Include nightly builds  
☐ Auto compile  
☐ Hide warnings  
Advanced Configurations >  
[🔄 Compile Mycontract.sol](#)  
[Compile and Run script](#) ⓘ ⓘ  
CONTRACT  
MyContract (Mycontract.sol)  
[Publish on Ipfs](#) IPFS  
[Publish on Swarm](#)  
[Compilation Details](#)  
ABI Bytecode

```
1 // SPDX-License-Identifier: GPL-3.0
2
3 pragma solidity >=0.7.0 <0.9.0;
4
5 contract MyContract {
6     uint amount;
7     uint value;
8     constructor (uint initialAmount, uint initialValue)
9     {
10         amount = 0;
11         value = 1000;
12     }
13     function getBalance() public view returns(uint) {
14         return value;
15     }
16     function getAmount() public view returns(uint) {
17         return amount;
18     }
19     function send(uint newDeposit) public {
20         value = value - newDeposit;
21         amount = amount + newDeposit;
22     }
23 }
```

# Melakukan Deploy

The screenshot displays the Remix IDE interface during the deployment of a Solidity contract. The left sidebar contains the 'DEPLOY & RUN TRANSACTIONS' panel, which is divided into several sections: 'ENVIRONMENT' (set to JavaScript VM (London)), 'ACCOUNT' (showing an account address 0x5B3...eddC4), 'GAS LIMIT' (set to 3000000), 'VALUE' (set to 0 Wei), and 'CONTRACT' (selected as MyContract - Mycontract.sol). Below these, the 'DEPLOY' section shows 'INITIALAMOUNT' as 10000 and 'INITIALVALUE' as 10, with a 'transact' button. There are also checkboxes for 'Publish to IPFS' and 'At Address'.

The main editor area shows the Solidity code for 'MyContract.sol'. The code is as follows:

```
1 // SPDX-License-Identifier: GPL-3.0
2
3 pragma solidity >=0.7.0 <0.9.0;
4
5 contract MyContract {
6     uint amount;
7     uint value;
8     constructor (uint initialAmount, uint initialValue) public {
9         amount = 0;
10        value = 1000;
11    }
12    function getBalance() public view returns(uint) {
13        return value;
14    }
15    function getAmount() public view returns(uint) {
16        return amount;
17    }
18    function send(uint newDeposit) public {
19        value = value - newDeposit;
20        amount = amount + newDeposit;
21    }
22 }
```


Below the code editor, the 'ContractDefinition MyContract' section shows '1 reference(s)'. The bottom panel displays the transaction status, including 'Transactions recorded' (1), 'Deployed Contracts' (MYCONTRACT AT 0XD91...39138), and a log entry: '[vm] from: 0x5B3...eddC4 to: value: 0 wei data: 0x608...0000a logs: 0 hash: 0x3d5...2a802'.



# Melakukan transaksi ether

OR

At Address Load contract from Address

Transactions recorded **2** >

Deployed Contracts 

▼ MYCONTRACT AT 0XD91...39138 (ME)  


send 100 ▼

getAmount

o: uint256: 100

getBalance

o: uint256: 900

Low level interactions 


CALLDATA



Transact

OR

At Address Load contract from Address

Transactions recorded **1** >

Deployed Contracts 

▼ MYCONTRACT AT 0XD91...39138 (ME)  


send uint256 newDeposit ▼

getAmount

o: uint256: 0

getBalance

o: uint256: 1000

Low level interactions 

CALLDATA

Transact

# Mendownload ganache lalu install

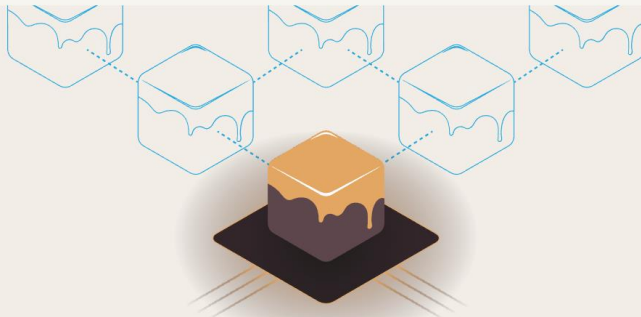
trufflesuite.com/ganache/

Introducing Truffle for VS Code. Simplified building, debugging, deploying!

TRUFFLE SUITE

HOME DOCUMENTATION GUIDES TUTORIAL BOXES BLOG COMMUNITY

Search



**Ganache**

**ONE CLICK BLOCKCHAIN**

GITHUB REPO DOCS

DOWNLOAD (WINDOWS)

[Need another OS download?](#)

Quickly fire up a personal Ethereum blockchain which you can use to run tests, execute commands, and inspect state while controlling how the chain operates.

Ganache

ACCOUNTS BLOCKS TRANSACTIONS CONTRACTS EVENTS LOGS

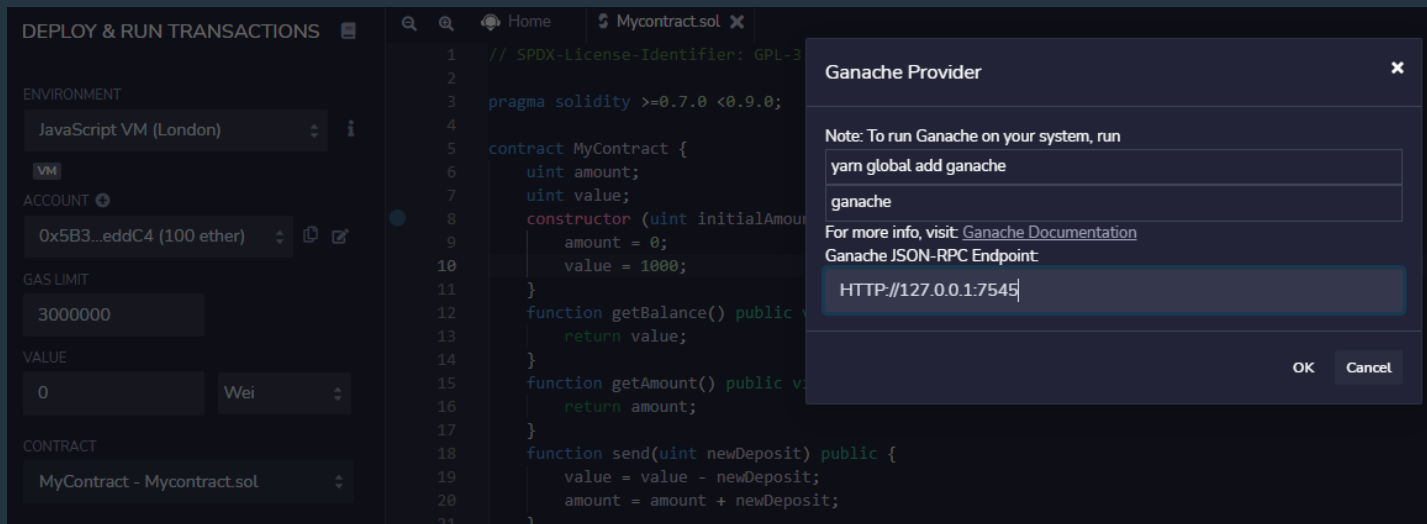
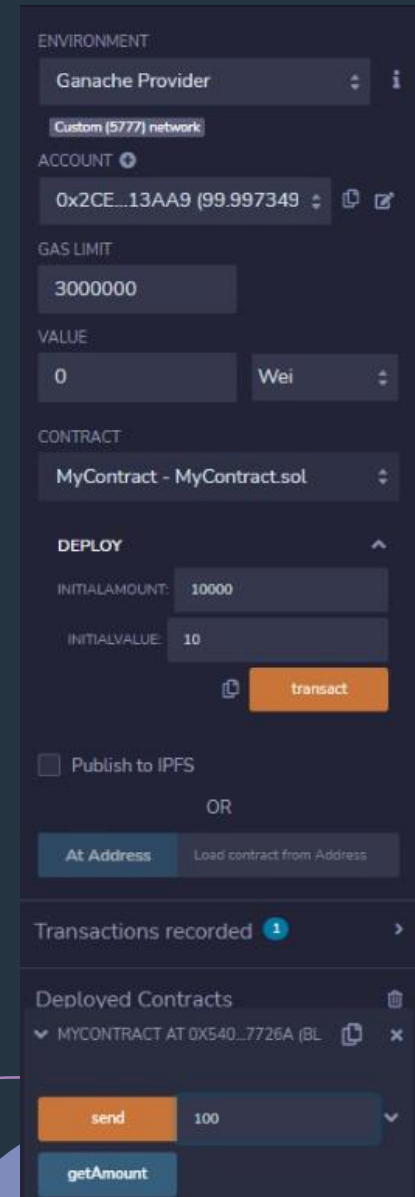
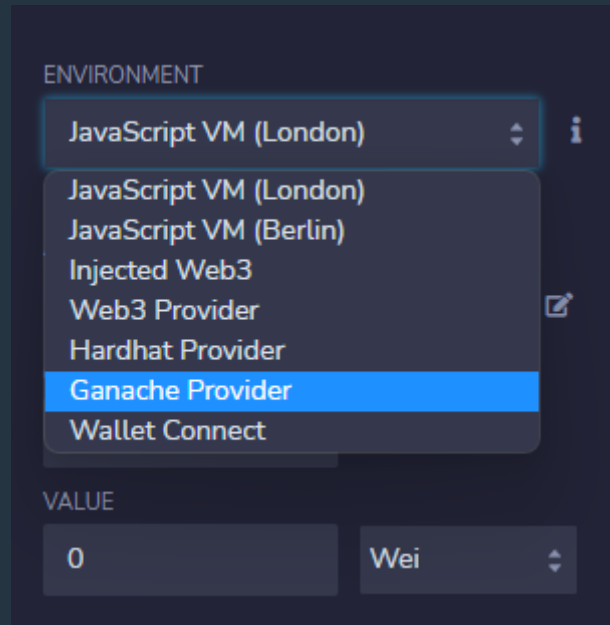
SEARCH FOR BLOCK NUMBERS OR TX HASHES

CURRENT BLOCK: 0 GAS PRICE: 2000000000 GAS LIMIT: 6721975 HARDFORK: MUIRGLACIER NETWORK ID: 5777 RPC SERVER: HTTP://127.0.0.1:7545 MINING STATUS: AUTOMINING WORKSPACE: QUICKSTART SAVE SWITCH

**MNEMONIC** fiction actual power view solid film bullet mad industry hidden label famous **HD PATH** m/44'/60'/0'/0'/0/account\_index

ADDRESS	BALANCE	TX COUNT	INDEX	
0xff2879fbC219D0Adb028c31B2F3a184Bca150e17	100.00 ETH	0	0	
ADDRESS	BALANCE	TX COUNT	INDEX	
0x9a99b53B1591961EE9a8636fbb3366AD58660881	100.00 ETH	0	1	
ADDRESS	BALANCE	TX COUNT	INDEX	
0x806c3856acc14E2C501fcC8351d3Cb5E3517957d	100.00 ETH	0	2	
ADDRESS	BALANCE	TX COUNT	INDEX	
0x8e550C1BB5F833CaCA74d86BA1c240B3D0C04737	100.00 ETH	0	3	
ADDRESS	BALANCE	TX COUNT	INDEX	
0x9953207480f9df2C2689f541f2aF4B64eE4aD0ba	100.00 ETH	0	4	
ADDRESS	BALANCE	TX COUNT	INDEX	
0x844BfEb14124fe970Ebc17CCA50BcD25d2d81468	100.00 ETH	0	5	
ADDRESS	BALANCE	TX COUNT	INDEX	
0xB2335656696908545531d9341baef54D3A98F8f6	100.00 ETH	0	6	

# Mengubah Environment menjadi Ganache



# Mencoba transaksi Ether menggunakan ganache

Setelah Deploy

TX HASH

0x098bd46863ef9c9567fec3fd204b4542f95f9fb48763363e3351310dec13e147

FROM ADDRESS

0x2CE8fe5cA270274f35CA470878840D3Accd13AA9

CREATED CONTRACT ADDRESS

0x5404B10A60E6679cAaEBF5e56Bbd9Db04b97726A

GAS USED

132502

VALUE

0

CONTRACT CREATION

Setelah sending money

TX HASH

0xd2c1288394f24ba7d321747a45eb392aa361ae286b7abc16633cebdde340fe96

FROM ADDRESS

0x2CE8fe5cA270274f35CA470878840D3Accd13AA9

TO CONTRACT ADDRESS

0x5404B10A60E6679cAaEBF5e56Bbd9Db04b97726A

GAS USED

48072

VALUE

0

CONTRACT CALL

TX HASH

0x098bd46863ef9c9567fec3fd204b4542f95f9fb48763363e3351310dec13e147

FROM ADDRESS

0x2CE8fe5cA270274f35CA470878840D3Accd13AA9

CREATED CONTRACT ADDRESS

0x5404B10A60E6679cAaEBF5e56Bbd9Db04b97726A

GAS USED

132502

VALUE

0

CONTRACT CREATION