

### Assignment.3: smart contract for bank account

#### CODE and OUTPUT:

```
// SPDX-License-Identifier: MIT
pragma solidity >=0.7.0 <0.9.0;

contract Bank {

    address public owner;

    mapping(address =>uint256) private userbalance;

    constructor() {
        owner = msg.sender;
    }

    modifier onlyOwner(){
        require (msg.sender==owner, 'You are not the owner of this contract');
        _;
    }

    function deposit() public payable returns(bool) {
        require(msg.value >10 wei, 'Please deposit at least 10 wei');
        userbalance[msg.sender] +=msg.value;
        return true;
    }

    function withdraw(uint256 _amount) public payable returns (bool) {
        require(_amount <=userbalance[msg.sender], 'You dont have sufficient funds');
        userbalance[msg.sender] -=_amount;
        payable(msg.sender).transfer(_amount);
    }
}
```

```

        return true;
    }

    function getbalance() public view returns(uint256){
        return userbalance[msg.sender];
    }

    function getBankBalance() public view onlyOwner returns(uint256){
        return address(this).balance;
    }

    function withdrawBankBalance (uint256 _amount) public payable onlyOwner returns (bool){
        payable(owner).transfer (_amount);
        return true;
    }
}

```

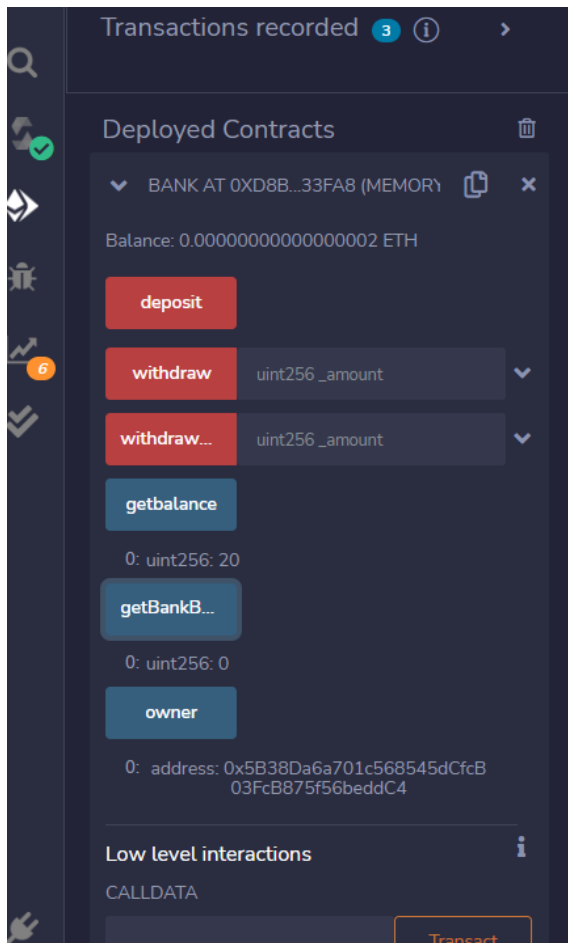
**Bank contract with id ( will be bank account ):**

**0x5B38Da6a701c568545dCfcB03FcB875f56beddC4**

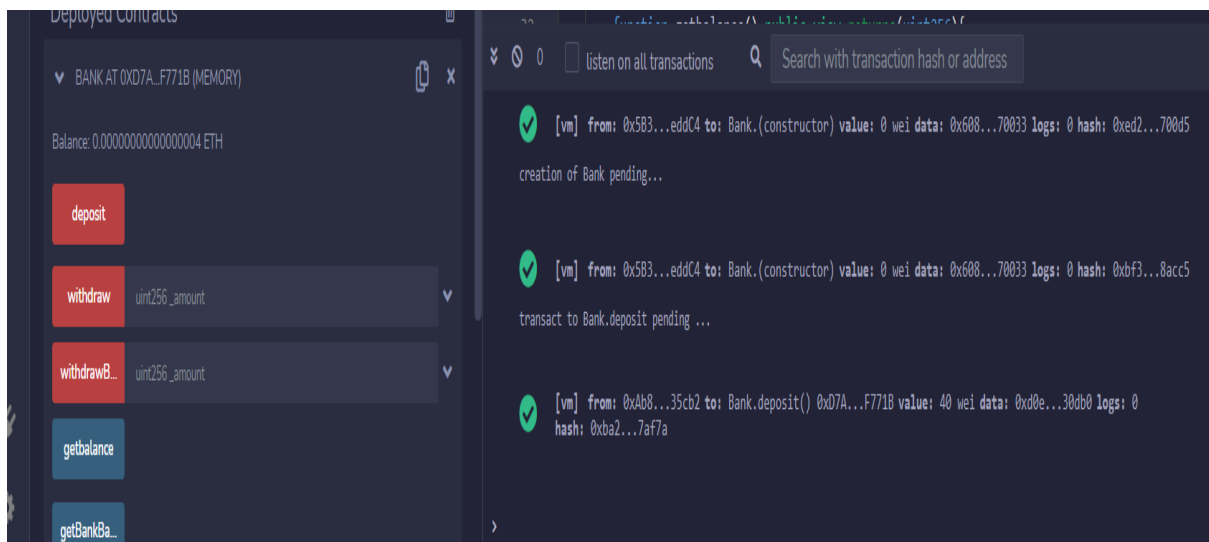
**Bank customer with id :**

**0xAb8483F64d9C6d1EcF9b849Ae677dD3315835cb2**

#### 1. Contract signed



## 2 User deposits 40



▼ BANK AT 0XD7A...F771B (MEMORY)

Balance: 0.000000000000000004 ETH

deposit

withdraw

uint256 \_amount

withdrawB...

uint256 \_amount

getbalance

0: uint256: 40

getBankBa...

owner

Low level interactions

### 3 User withdraw

withdraw

5

withdrawB...

uint256 \_amount

getbalance

0: uint256: 40

getBankBa...

owner

Low level interactions

▼

BANK AT 0XD7A...F771B (MEMORY)

✕

Balance: 0.000000000000000035 ETH

deposit

withdraw

withdrawB...

getbalance

getBankBa...

owner

5

uint256 \_amount

0: uint256: 35

0: address: 0x5B38Da6a701c568545dCfcB03FcB875f56beddC4

Low level interactions

CALLDATA

Transact

**4 .Bank balance becomes 35 ( as 40 - 5 )**

getbalance

0: uint256: 0

getBankBa...

0: uint256: 35

owner

0: address: 0x5B38Da6a701c568545dCfcB03FcB875f56beddC4

Low level interactions

CALLDATA