

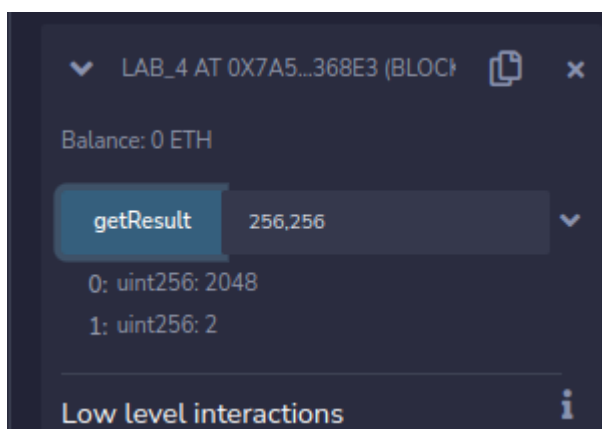
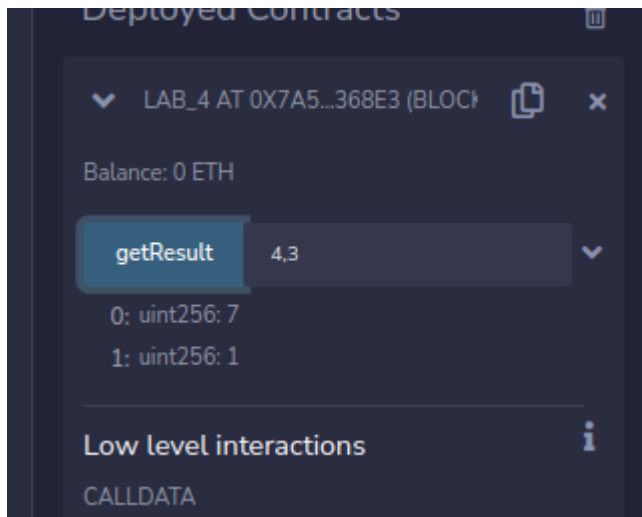
Lab 5

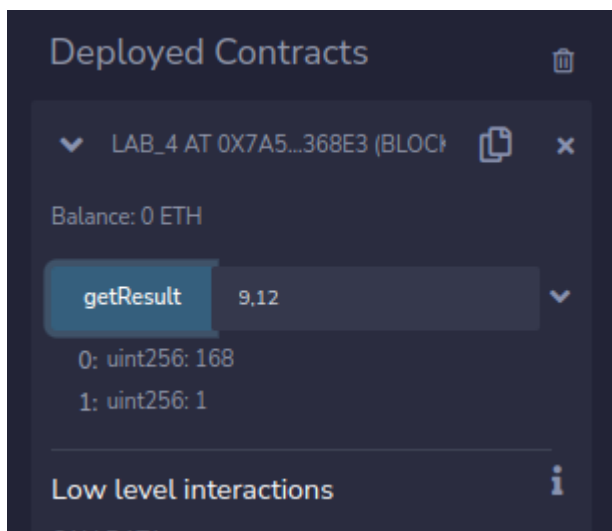
Details :

- Name : P K Navin Shrinivas
- SRN : PES2UG20CS237
- Section : D

Task 1:

- Outputs :





- The outputs follows a logic like so :
 - If the sum of 2 number is a prime number it sum as the first number.
 - Else if multiplies the sum of 2 number with 2, n number of times. Where n is the smallest number sum of 2 numbers (input) is divisible by.
 - The sccond number is number of **bytes** requiried to represent the sum of 2 numbers.
- Explaining the loops :
 - Loop 1 : Find the number of bit requiried to represent the sum of 2 numbers. It does so by increment the len by 8 if the binary rep range of len is greater than the sum of 2 numbers (`_i`).
 - Loop 2 : Find the smallest number sum of 2 numbers is divisible by. If not, we set small to 0.
- Replaing **POSITION3** code :

```

uint len_actual = len/8;
uint j = 2;
uint small = 9999;
while (j!=_i){ //LOOP2
    if (_i%j== 0){
        small=j < small? j : small; //POSITION 3
    }
    j++;
}
if (small==9999){ // POSITION 4
    small=0;
}
return (_i<<small,len_actual); // POSITION 5
}
}

```

- Small being assigned to 0 in POSITION 4 implies that the sum of 2 numbers is a prime number and hence we do not shift the number by anything.
- Returning the 2 numbers without any return statement :

```

1  pragma solidity ^0.8.7;
2  contract Lab_4 {
3      constructor() public{
4      }
5
6      function getResult(uint var1, uint var2) public pure returns(uint, uint ){
7          uint result = var1 + var2;
8          uint a;uint b;
9          Mystery(a,b,result);
10         return (a,b);
11     }
12     function Mystery(uint a,uint b,uint _i) internal {
13         if (_i == 0) {
14             a = 0;
15             b = 1;
16         }
17         uint len=8;
18         while(_i > (2**len)-1) //LOOP 1
19         {
20             len+=8;
21         }
22         uint len_actual = len/8;
23         uint j = 2;
24         uint small =9999;
25         while (j!=_i){ //LOOP2
26             if (_i%j== 0){
27                 small=j < small? j : small; //POSITION 3
28             }
29             j++;
30         }
31         if (small==9999){ // POSITION 4
32             small=0;
33         }
34         a = _i<<small;
35         b = len_actual;
36     }
37 }

```

Task 2 :

- Code of the contract :

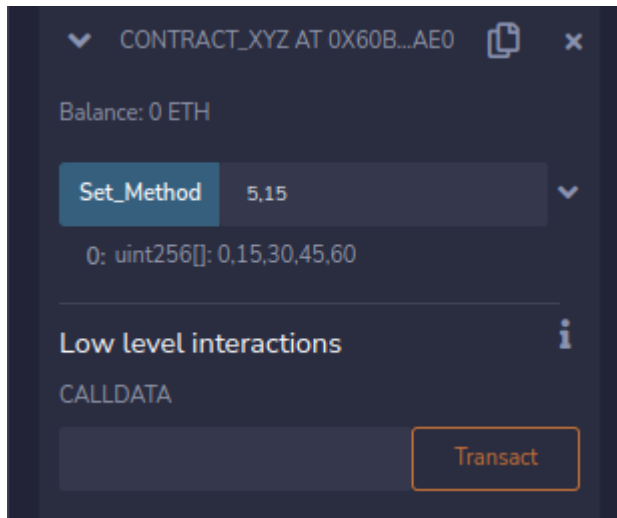
```

pragma solidity ^0.8.7;
contract Contract_XYZ{
    function Set_Method(uint var1, uint var2) public
    pure returns(uint[] memory){
        uint[] memory res = new uint[](var1);
        for(uint i=0;i<var1;i++){
            res[i] = i*var2;
        }
        return res;
    }
}

```

```
}  
  
}
```

- Output screenshot :



Task 3:

- Deployment of CODE 1 :

Sepolia test network



Account 1



New contract

https://remix.ethereum.org

CONTRACT DEPLOYMENT

DETAILS

DATA



Site suggested > i

Gas (estimated) i

0.00052625

0.00052625 SepoliaETH

Very likely in < 15 seconds

Max fee: 0.00052625 SepoliaETH

Total

0.00052625

0.00052625 SepoliaETH

Amount + gas fee

Max amount: 0.00052625 SepoliaETH

Reject

Confirm

Deployed Contracts

- LAB_4 AT 0x7A5...368E3 (BLOCK)
- LAB_4 AT 0x7A7...27CA6 (BLOCK)
- LAB_4 AT 0x217...04E3E (BLOCK)
- CONTRACT_XYZ AT 0x60B...AEB
- C AT 0x5FA...B396D (BLOCK)**

Balance: 0 ETH

updateData uint256 s

compute uint256 s, uint256 s

getData

info

Low level interactions

CALLDATA

Transact

```

14 //public function
15 function updateData(uint a) public { data = a; }
16 function getData() public view returns(uint) { return data; }
17 function compute(uint a, uint b) public pure returns (uint) { return a + b; }
18 }
19 //External Contract
20 contract D {

```

decoded output

logs

val

creation of Contract_XYZ pending...

view on etherscan

[block:3192010 txIndex:13] from: 0xE0F...B1833 to: Contract_XYZ.(constructor) value: 0 wei data: 0x608...20033 logs: 0 hash: 0x05c...e1632

call to Contract_XYZ.Set_Method

[call] from: 0xEBF8EE072EAA29D5C09c95F2b6183395b5A81833 to: Contract_XYZ.Set_Method(uint256,uint256) data: 0xd23...0000f

creation of C pending...

view on etherscan

[block:3192029 txIndex:9] from: 0xE0F...B1833 to: C.(constructor) value: 0 wei data: 0x608...30033 logs: 0 hash: 0x92c...8275b

Debug

METAMASK

Sepolia test network

Account 1

0xE0F...B1833

0.0202 SepoliaETH

Buy Send Swap

Assets Activity

Portfolio site

Contract deployment

Mar 30 · remix.ethereum.org

-0 SepoliaETH

-0 SepoliaETH

Contract deployment

Mar 30 · remix.ethereum.org

-0 SepoliaETH

-0 SepoliaETH

Contract interaction

Mar 30 · remix.ethereum.org

-0 SepoliaETH

-0 SepoliaETH

Contract deployment

Mar 30 · remix.ethereum.org

-0 SepoliaETH

-0 SepoliaETH

Contract deployment

Mar 30 · remix.ethereum.org

-0 SepoliaETH

-0 SepoliaETH

- Deployment of CODE 1 :

BANKCONTRACT AT 0x64C...301

Balance: 0 ETH

deposit

joinAsClient

sendInterest

setManager address manager address

withdraw uint256 amount

getContractB

interestDate address

Low level interactions

CALLDATA

Transact

```

18 bool isclient = false;
19 for(uint i=0;i<clients.length;i++){
20 if(clients[i].client_address == msg.sender){

```

creation of Contract_XYZ pending...

view on etherscan

[block:3192010 txIndex:13] from: 0xE0F...B1833 to: Contract_XYZ.(constructor) value: 0 wei data: 0x608...20033 logs: 0 hash: 0x05c...e1632

call to Contract_XYZ.Set_Method

[call] from: 0xEBF8EE072EAA29D5C09c95F2b6183395b5A81833 to: Contract_XYZ.Set_Method(uint256,uint256) data: 0xd23...0000f

creation of C pending...

view on etherscan

[block:3192029 txIndex:9] from: 0xE0F...B1833 to: C.(constructor) value: 0 wei data: 0x608...30033 logs: 0 hash: 0x92c...8275b

creation of BankContract pending...

view on etherscan

[block:3192036 txIndex:16] from: 0xE0F...B1833 to: BankContract.(constructor) value: 0 wei data: 0x608...c0033 logs: 0 hash: 0x968...47299

Debug



Contract deployment



Status

[View on block explorer](#)

Confirmed

[Copy transaction ID](#)

From



0xE0F...1833



To

New contract

Transaction

Nonce

9

Amount

-0 SepoliaETH

Gas Limit (Units)

593191

Gas Used (Units)

593191

Base fee (GWEI)

0.000000011

Priority fee (GWEI)

2.5

Total gas fee

0.001483 SepoliaETH

Max fee per gas

0.000000003 SepoliaETH

Total

0.00148298 SepoliaETH

+ Activity log



Transaction created with a value of 0 SepoliaETH at 14:40 on 3/30/2023.



Transaction submitted with estimated gas fee of 0.001483 SepoliaETH at 14:40 on 3/30/2023.



Transaction confirmed at 14:41 on 3/30/2023.

+ Transaction data

Assets

Activity



Contract deployment

Mar 30 · remix.ethereum.org



Contract deployment

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Contract deployment

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Contract interaction

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Contract deployment

Mar 30 · remix.ethereum.org

-0 SepoliaETH

-0 SepoliaETH

-0 SepoliaETH

-0 SepoliaETH

-0 SepoliaETH

-0 SepoliaETH

-0 SepoliaETH

-0 SepoliaETH

-0 SepoliaETH

-0 SepoliaETH