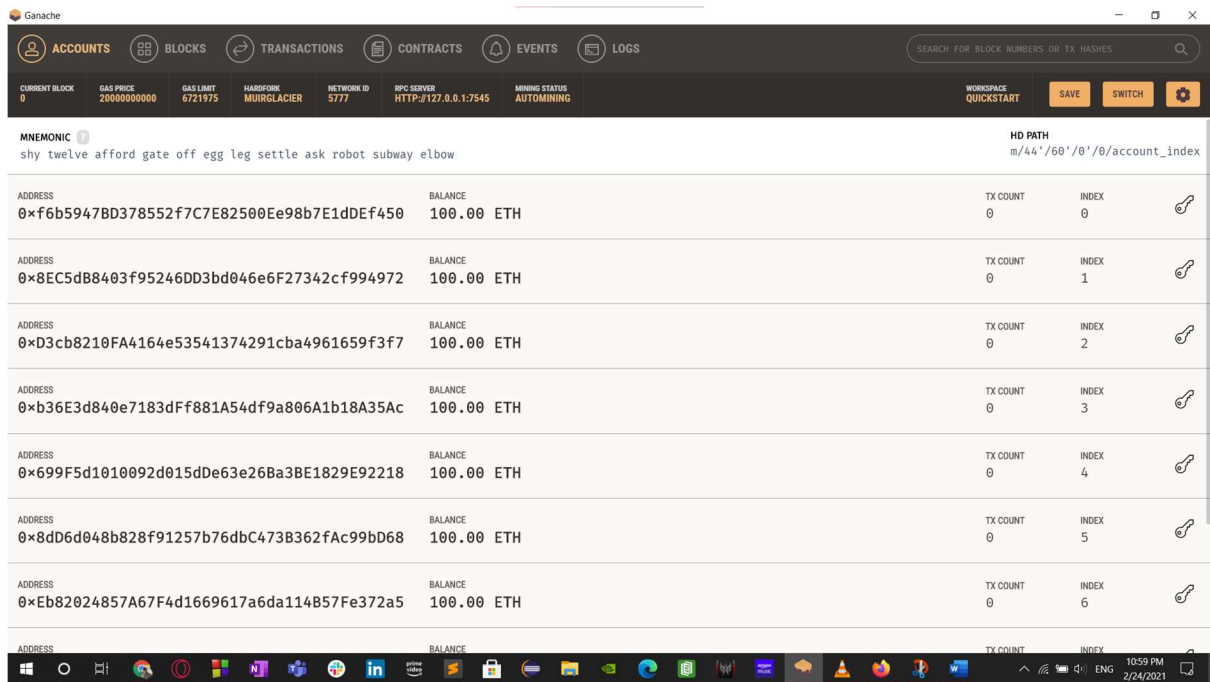


VIBHAV SHARMA E18CSE206 LAB 5 BLOCKCHAIN AND CRYPTOCURRENCIES

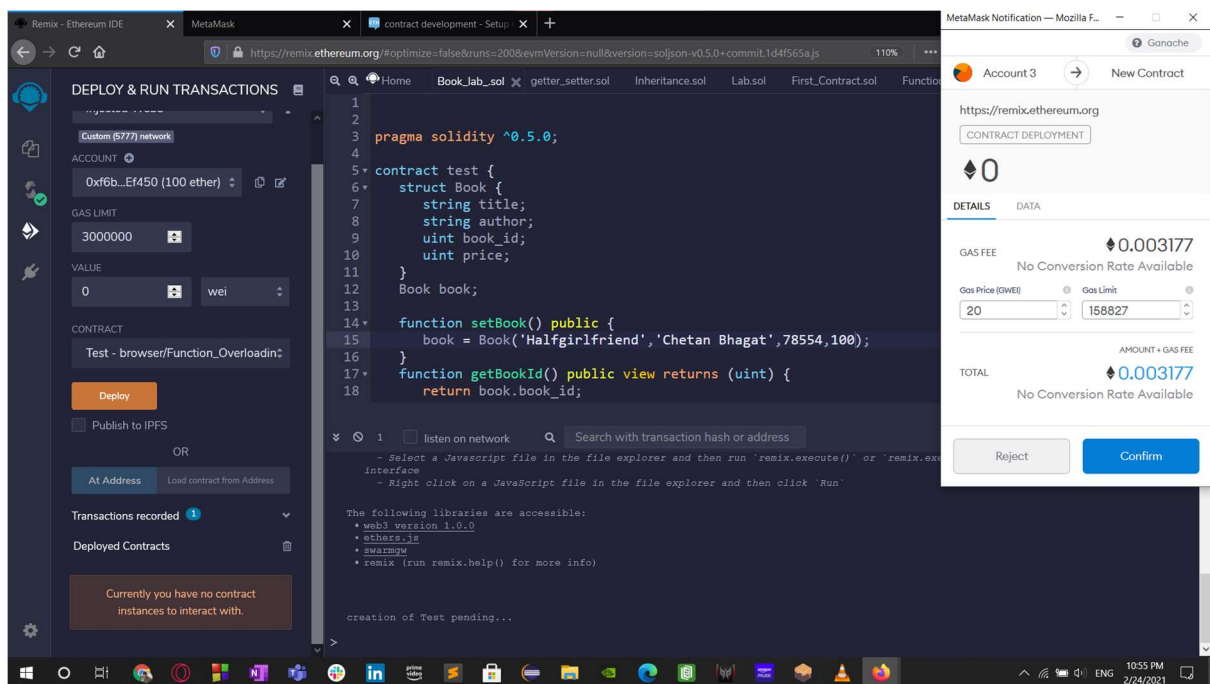
TASK1 :

Write a solidity program to implement a structure called Book with members title, author, book_ID, price. Implement the functions setBook() and getBook() to set and display the members of the Book. In addition, compile the contract using Remix IDE and deploy to your personal Blockchain called Ganache through MetaMask.



The screenshot shows the Ganache application interface. At the top, there's a navigation bar with tabs for ACCOUNTS, BLOCKS, TRANSACTIONS, CONTRACTS, EVENTS, and LOGS. Below this, a status bar displays various network metrics. The main area shows a list of accounts. Each account entry includes an address, a balance of 100.00 ETH, and a transaction count of 0. The accounts are listed in a table format with columns for ADDRESS, BALANCE, TX COUNT, and INDEX.

| ADDRESS | BALANCE | TX COUNT | INDEX |
|--|------------|----------|-------|
| 0xf6b5947BD378552f7C7E82500Ee98b7E1dDef450 | 100.00 ETH | 0 | 0 |
| 0x8EC5dB8403f95246DD3bd046e6F27342cf994972 | 100.00 ETH | 0 | 1 |
| 0xD3cb8210FA4164e53541374291cba4961659f3f7 | 100.00 ETH | 0 | 2 |
| 0xb36E3d840e7183dFf881A54df9a806A1b18A35Ac | 100.00 ETH | 0 | 3 |
| 0x699F5d1010092d015dDe63e26Ba3BE1829E92218 | 100.00 ETH | 0 | 4 |
| 0x8dD6d048b828f91257b76dbC473B362fAc99bD68 | 100.00 ETH | 0 | 5 |
| 0xEb82024857A67F4d1669617a6da114B57Fe372a5 | 100.00 ETH | 0 | 6 |

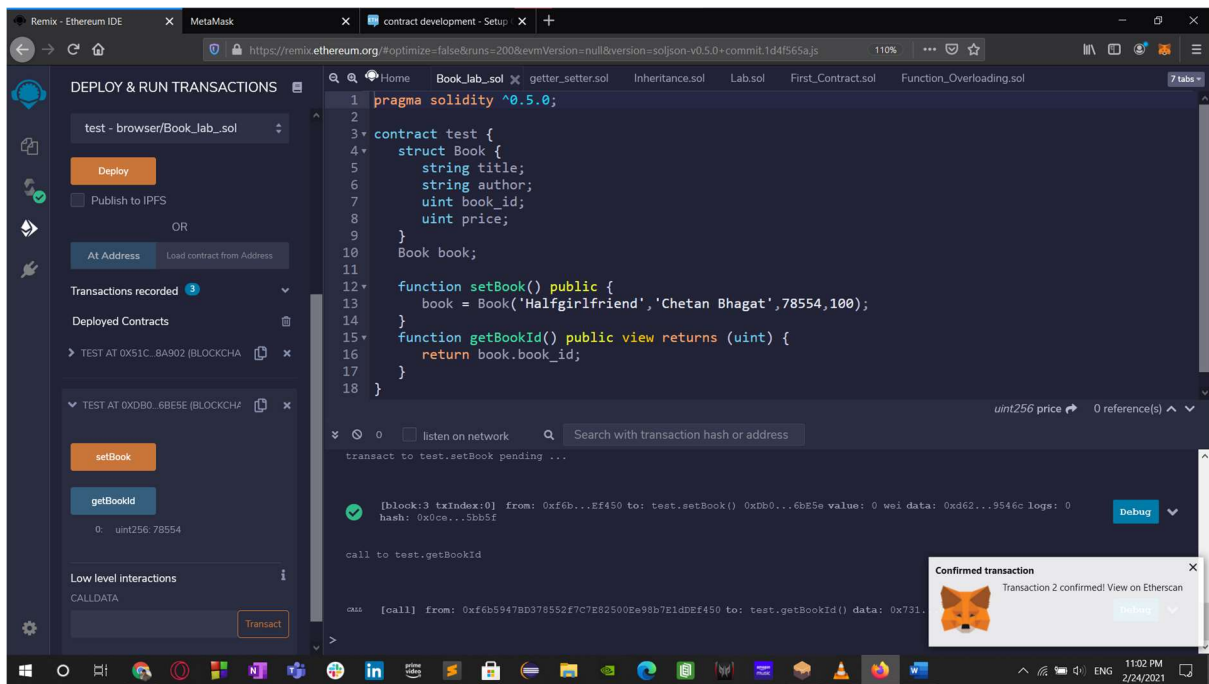
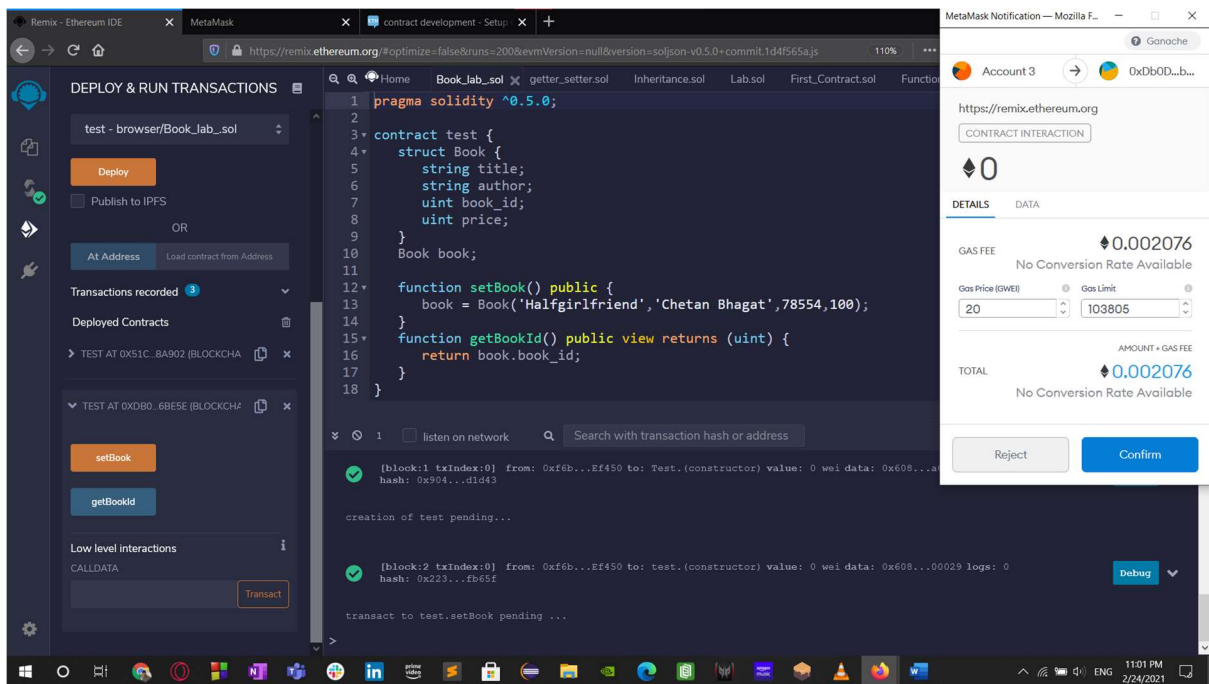


The screenshot shows the Remix IDE interface. The main editor displays a Solidity contract named 'Book'. The contract defines a structure 'Book' with members 'title', 'author', 'book_id', and 'price'. It also defines two functions: 'setBook()' and 'getBookId()'. The contract is being deployed to the 'Custom (5777) network'. The deployment settings show a gas limit of 3000000 and a value of 0 Wei. A MetaMask notification window is open on the right, showing the deployment details and a confirmation button.

```
pragma solidity ^0.5.0;

contract test {
    struct Book {
        string title;
        string author;
        uint book_id;
        uint price;
    }
    Book book;

    function setBook() public {
        book = Book('Halfgirlfriend', 'Chetan Bhagat', 78554, 100);
    }
    function getBookId() public view returns (uint) {
        return book.book_id;
    }
}
```



TASK 2 :

Write a solidity program to have multiple definitions for the same function name and the definition of the function must differ from each other by the types and/or the number of arguments in the argument list. Further, compile the contract using Remix IDE and deploy to your personal Blockchain called Ganache through MetaMask.

Remix - Ethereum IDE | MetaMask | contract development - Setup

https://remix.ethereum.org/#optimize=false&runs=200&evmVersion=null&version=soljson-v0.5.0+commit.1d4f565ajs

DEPLOY & RUN TRANSACTIONS

callSumWithTwoArguments
0: uint256: 6

callSumWithThreeArguments
0: uint256: 3

getSum
a: 2
b: 3
call

getSum
a: 6
b: 7
c: 8
call

```
1 pragma solidity ^0.5.0;
2
3 contract Test {
4     function getSum(uint a, uint b) public pure returns(uint){
5         return a + b;
6     }
7     function getSum(uint a, uint b, uint c) public pure returns(uint){
8         return a + b + c;
9     }
10    function callSumWithTwoArguments() public pure returns(uint){
11        return getSum(1,2);
12    }
13    function callSumWithThreeArguments() public pure returns(uint){
14        return getSum(1,2,3);
15    }
16 }
```

uint256 price 0 reference(s)

listen on network Search with transaction hash or address

call to test.getBookId

[call] from: 0xf6b5947bd378552f7c7e92500e98b7e1dd8ef450 to: test.getBookId() data: 0x731...0d33c Debug

call to Test.callSumWithThreeArguments

[call] from: 0xf6b5947bd378552f7c7e92500e98b7e1dd8ef450 to: Test.callSumWithThreeArguments() data: 0xd20...74110 Debug

Remix - Ethereum IDE | MetaMask | contract development - Setup

moz-extension://0a38d281-1d10-4e0d-bd79-a7b51c359adf/home.html#

METAMASK

Ganache

Account 3

Contract Interaction

Details

From: 0xf6b5947bd378552f7c7e92500e98b7e1dd8ef450 To: 0xd60dc5868b6a2c...

Transaction

| | |
|-------------------|--------------|
| Nonce | 2 |
| Amount | -0 ETH |
| Gas Limit (Units) | 103805 |
| Gas Used (Units) | 103805 |
| Gas Price (Gwei) | 20 |
| Total | 0.002076 ETH |

Assets

Activity

| | | |
|----------------------|-----------------------------|--------|
| Contract Interaction | Feb 24 - remix.ethereum.org | -0 ETH |
| Contract Deployment | Feb 24 - remix.ethereum.org | -0 ETH |
| Contract Deployment | Feb 24 - remix.ethereum.org | -0 ETH |

Activity Log

- Transaction created with a value of 0 ETH at 23:01 on 2/24/2021.
- Transaction submitted with gas fee of 0.002 ETH at 23:02 on 2/24/2021.
- Transaction confirmed at 23:02 on 2/24/2021.