

Configuration Manual

MSc Research Project
FinTech

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MSc Project Submission Sheet
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Programme: MSc in FinTech **Year:** 2019

Module: Research Project

Supervisor: Noel Cosgrave

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Project Title: Utilisation of Blockchain Technology for KYC process for banks in India using Aadhar Number

Word Count: 369 **Page Count:** 6

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You must ensure that you retain a HARD COPY of the project, both for your own reference and in case a project is lost or mislaid. It is not sufficient to keep a copy on computer.	<input type="checkbox"/>

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Configuration Manual

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1 Hardware Configuration

The configuration of hardware used in this research – Intel core i7 processor with 8GB RAM.

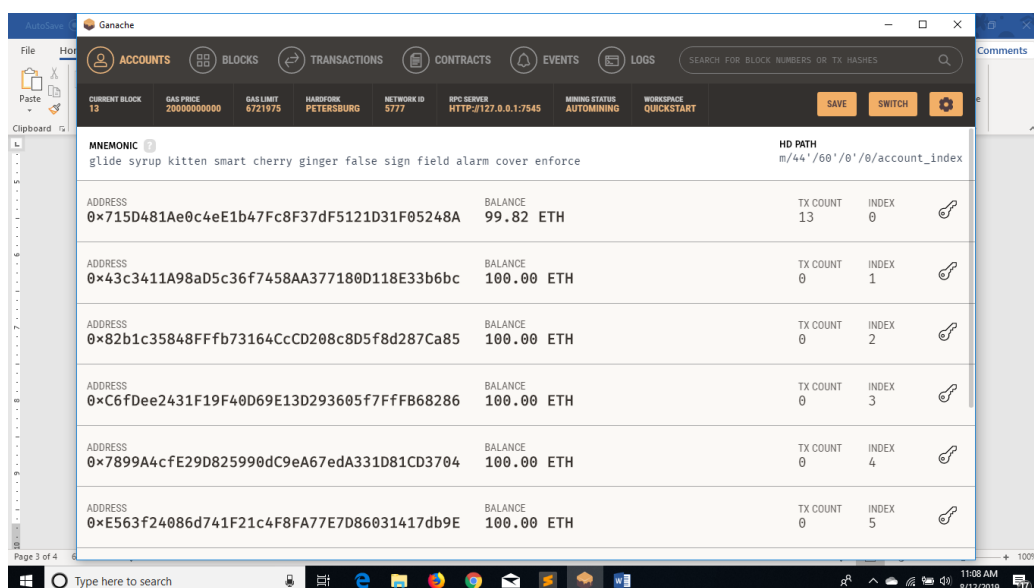
2 Software Configuration

2.1 Software required

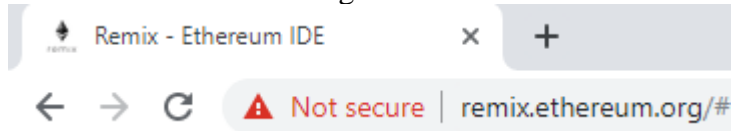
- 1) Google Chrome (Any recent Version)
- 2) Solidity v0.4.24
- 3) Ganache v2.1.0
- 4) Remix IDE
- 5) Metamask (Google Chrome Extension)
- 6) Web3 v0.20.7
- 7) Notepad++ v7.5.8
- 8) HTML5
- 9) CSS5
- 10) JavaScript

3 Steps for implementation of code

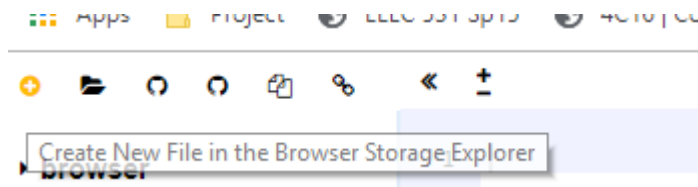
- 1) Create an account on chrome extension of Metamask.
- 2) Run Ganache application.



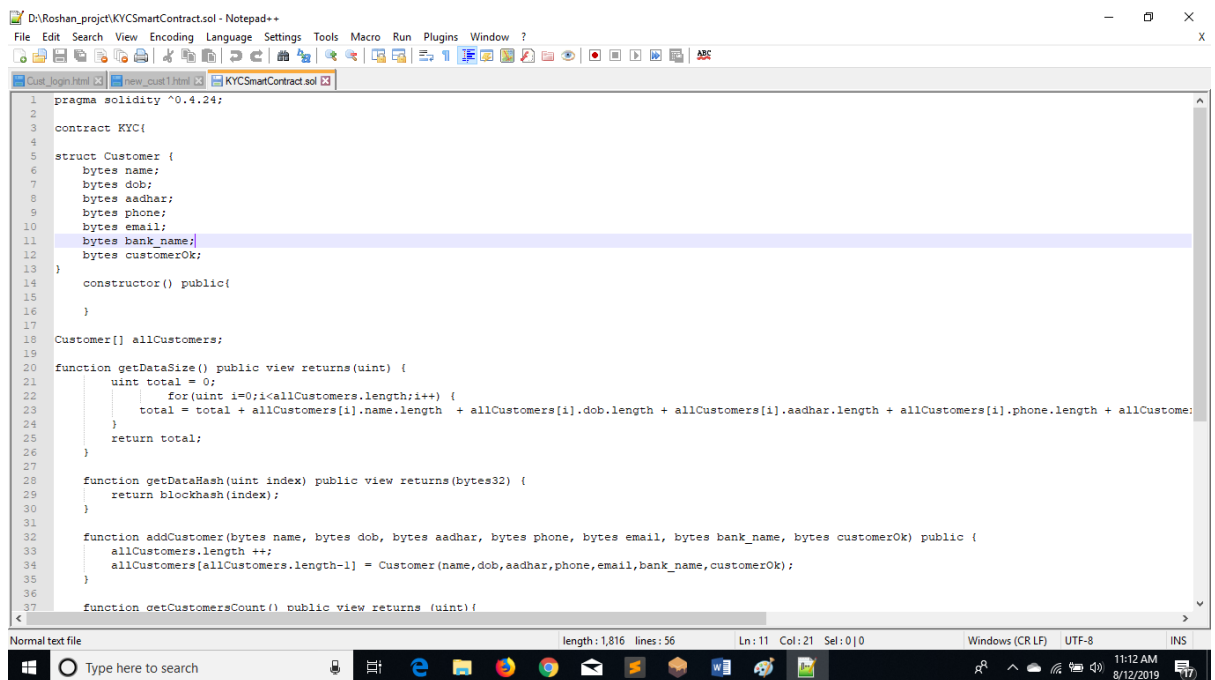
3) Go to “remix.ethereum.org”



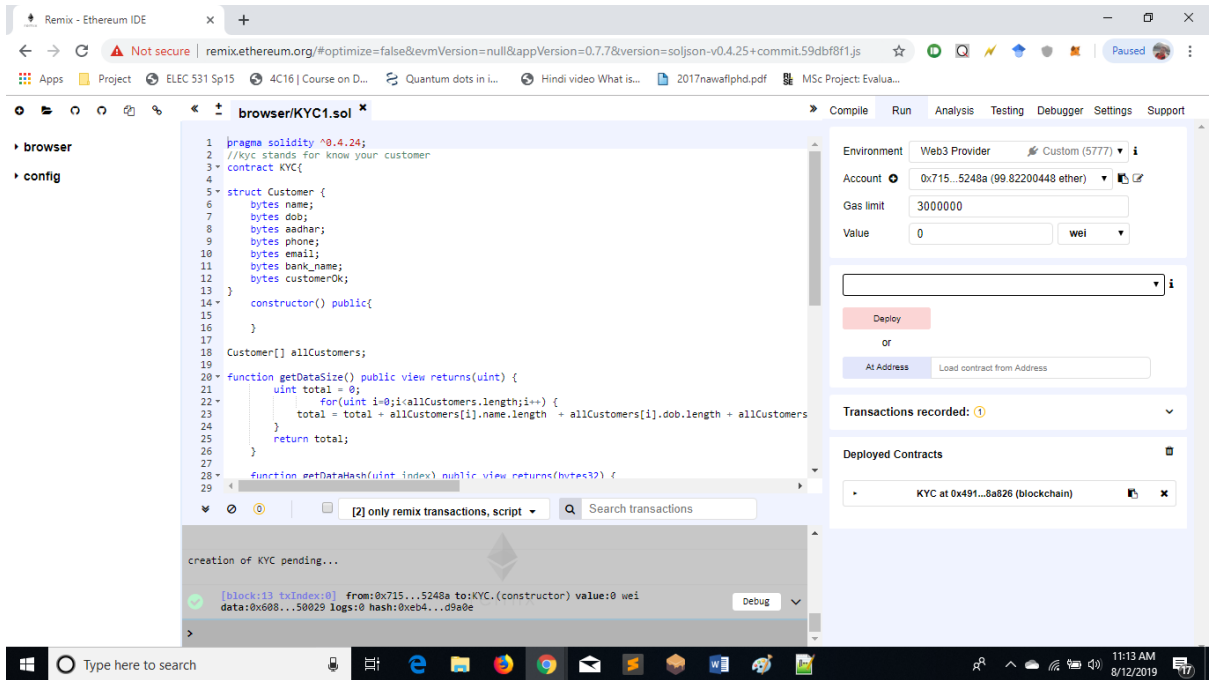
4) Create a new file in Remix.



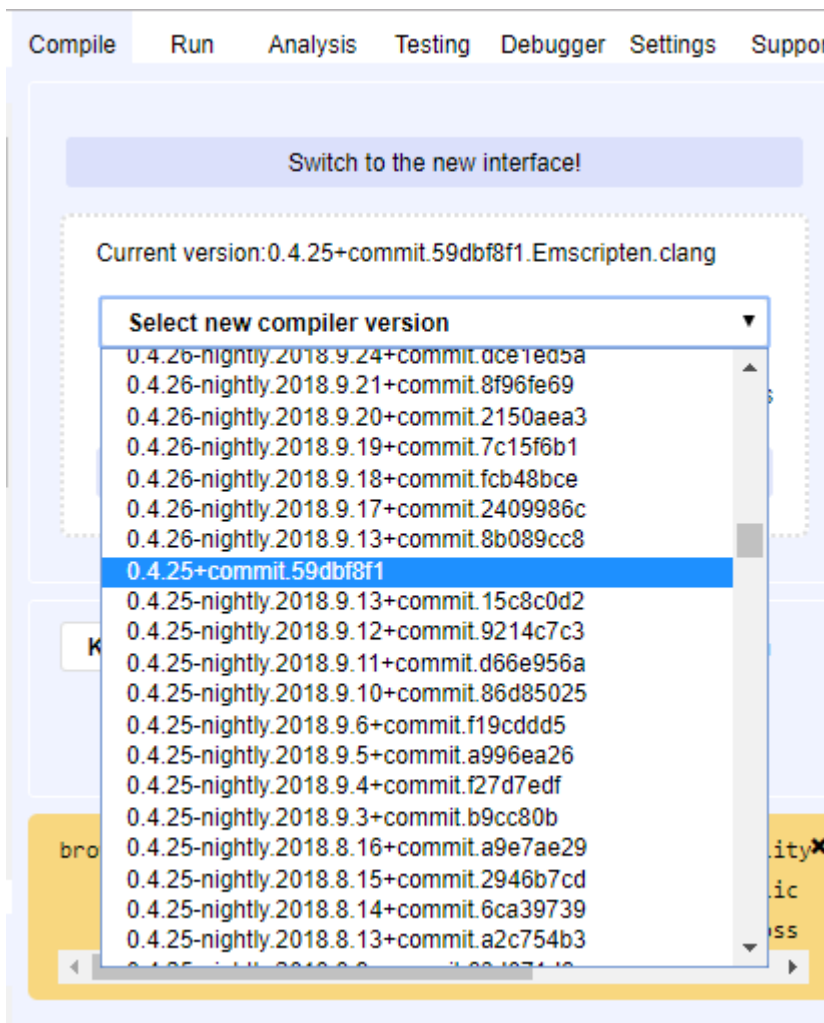
5) Open the file “KYCSmartContract.sol” from the folder using Notepad++.



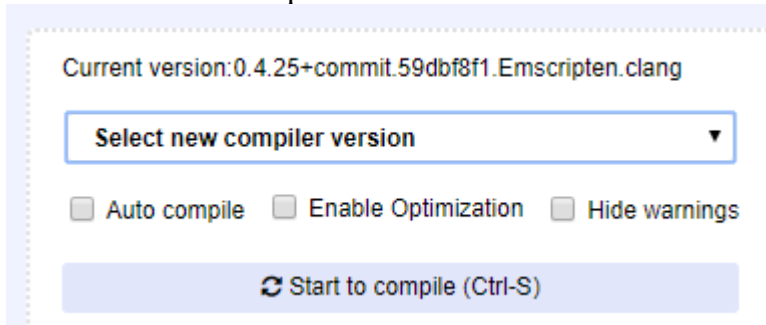
6) Copy the entire code from the file to new file in Remix.



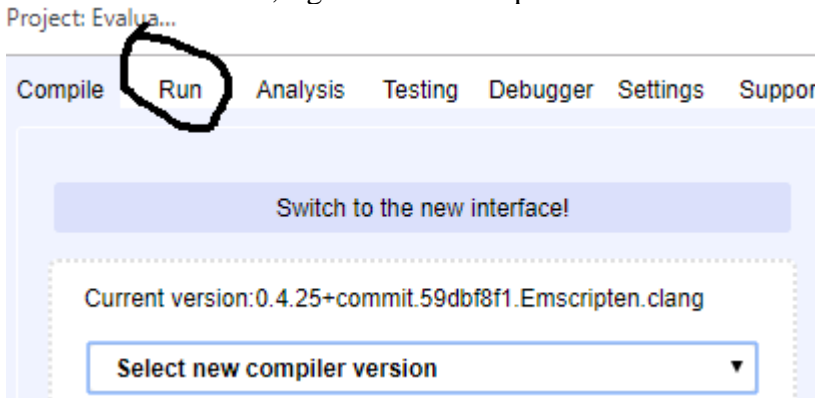
- 7) Set the compiler version from the dropdown menu to "0.4.25+commit59dbf8f1.Emscripten.clang"



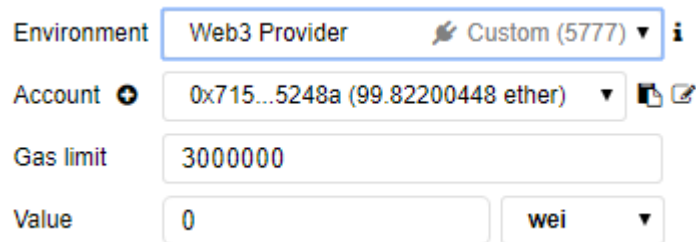
8) Click on Start to Compile.



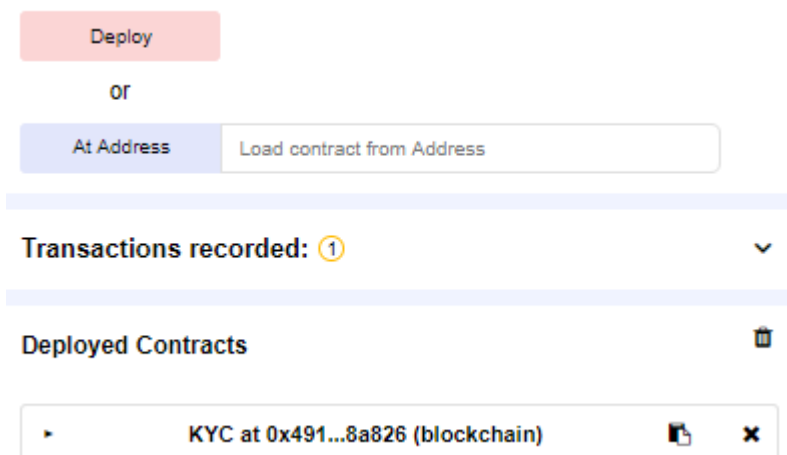
9) Click on the Run tab, right next to Compile tab.



10) In the environment column in Run tab, selected Web3 Provider. The click on “OK” and then change the port number of localhost from ‘8545’ to ‘7545’ and then click on “OK”.



11) Click on Deploy. You will see that in “Deployed Contracts” section, KYC contract has been deployed on the blockchain and the details of that transaction can be seen on the left side of it in a grey box.



12) When you click on the small arrow on the contract button, you will see details about the variables in contract both input and output:

The screenshot shows the 'addCustomer' contract interface. It features seven input fields, each labeled with a variable name and containing the text 'bytes':

- name: bytes
- dob: bytes
- aadhar: bytes
- phone: bytes
- email: bytes
- bank_name: bytes
- customerOk: bytes

At the bottom right, there is a red button labeled 'transact' next to a small black icon. Below the main form, a list of functions is displayed, each with a dropdown arrow:

- getCustomerData uint256 index
- getCustomersCount
- getDataHash uint256 index
- getDataSize
- stringToBytes32 string source

13) You will have to enter the values in the fields under “addCustomer”. The data-type accepted here is ‘bytes’, which takes input as 0x00000 for each entry. However, in front-end, the customer will enter a string and it will be converted to bytes in the smart contract. Once the values are entered, click on “transact” and the values will be stored on the blockchain and the transaction is also recorded.

The screenshot shows the 'addCustomer' contract interface with hexadecimal values entered in the input fields:

- name: 0x5456565
- dob: 0x493256
- aadhar: 0x4665659
- phone: 0x5495666
- email: 0x495632362
- bank_name: 0x541023
- customerOk: 0x002135

The red 'transact' button is highlighted with a black circle. Below the form, the text 'addCustomer - transact (not paye' is visible.

14) You will get the customer data which you just entered when you click on the “getCustomerData” button.

```
getCustomerData uint256 index
0: b: getCustomerData-call
1: bytes: dob 0x493256
2: bytes: aadhar 0x04665659
3: bytes: phone 0x05495666
4: bytes: email 0x0495632362
5: bytes: bank_name 0x541023
6: bytes: customerOk 0x002135
```

15) This data is now stored on the blockchain.

16) You can also run the same code on the client side using the index.html file. However, there has been some issues regarding the web3 js while implementing the code on html and JavaScript.