National College of Ireland

Configuration Manual

Funds Routing System: an accountable fund allocation mechanism

MSc in Fintech
Research Project

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MSc Project Submission Sheet

School of Computing

Student Name:	Rodolfo José Monsberger
Student ID:	X18175457
Programme:	MSc. in Fintech **Year:** 2020
Module:	MSc. Research Project
Supervisor:	Victor del Rosal
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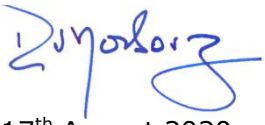
Signature: 

Date: 17th August 2020

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Configuration Manual

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1 Introduction

The FRS prototype has been developed in solidity language of Remix IDE. This first version focuses on the back-end solution in order to test the basic functions of the design before proceeding in a second stage with a more comprehensive development which will include the front-end functionalities.

2 Remix IDE structure

Remix is a Solidity IDE used to write, compile and debug Solidity code. It has three environments for executing the transactions:

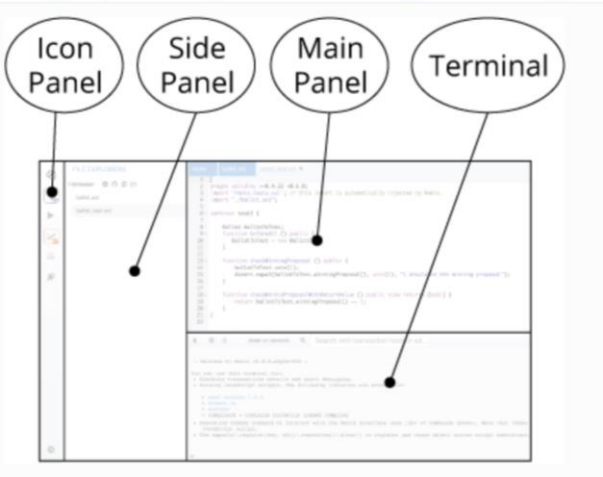
- JavaScript VM: a sandbox implemented with JavaScript to emulate a real blockchain.
- Injected Web3: a web3 able to inject Mist and Metamask
- Web3 Provider: a remote node with geth, parity or any Ethereum client. Can be used to connect to the real network

FRS prototype is designed to work on the sandbox version of JavaScript VM.

Remix IDE can be accessed from a web browser without any special installation. Open the Remix IDE with following link:

https://remix.ethereum.org/

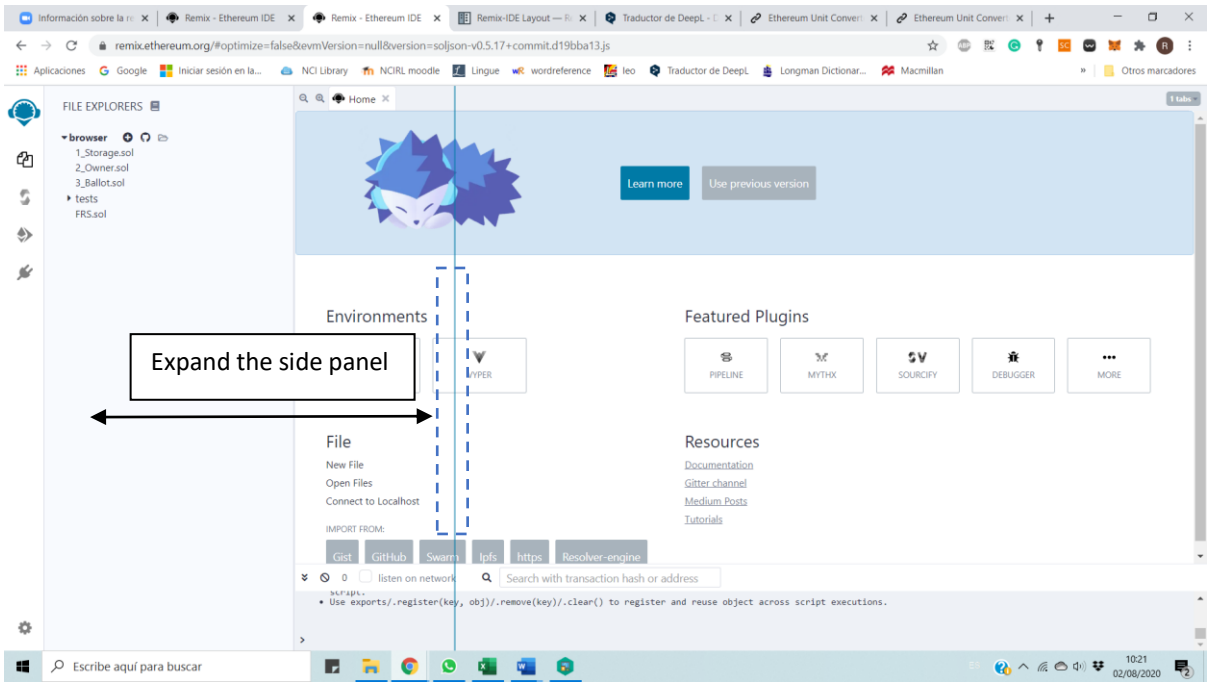
Various panels compose Remix IDE. The “main panel” is where the code is written. Icon Panel contains most plug-in functions. The “Side Panel” is where compiling and running of the code takes place. The “terminal panel” is where results of interaction are shown.



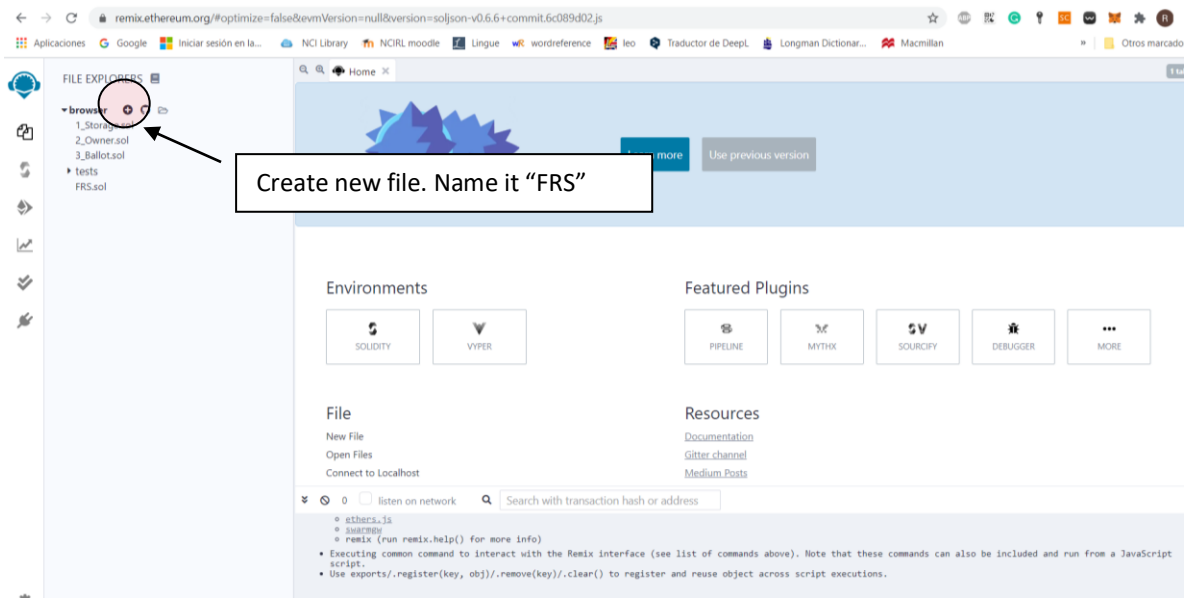
Source: https://remix-ide.readthedocs.io/en/latest

3 Instructions for code uploading

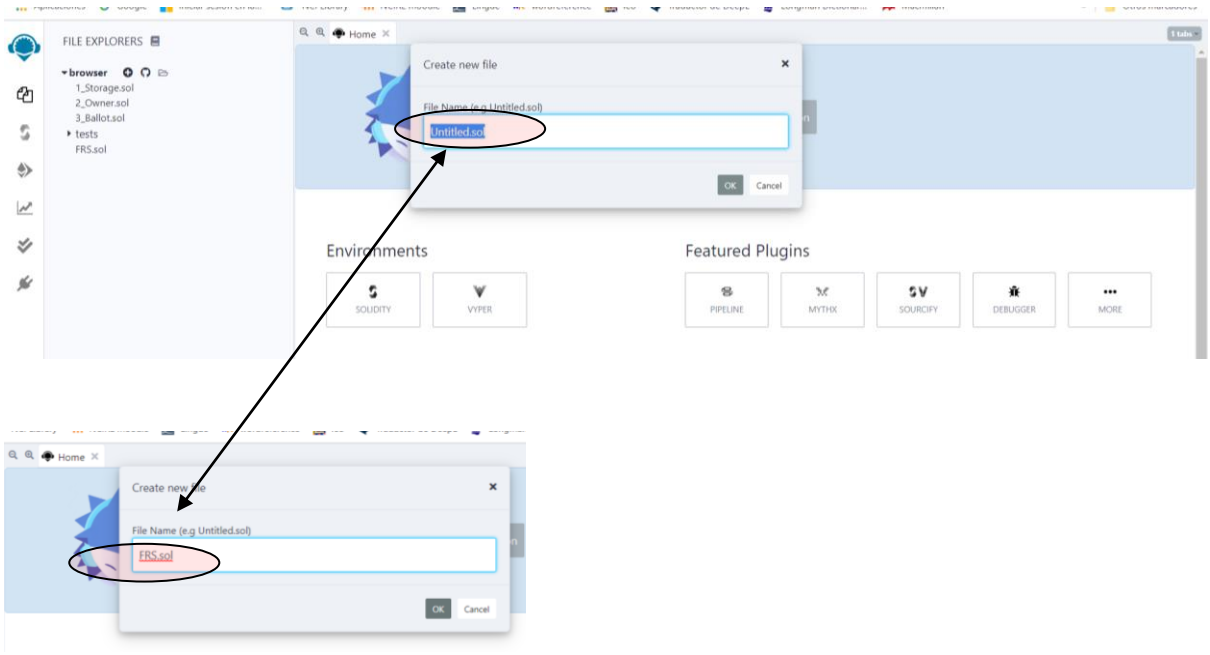
Expand the side panel to work more comfortably.



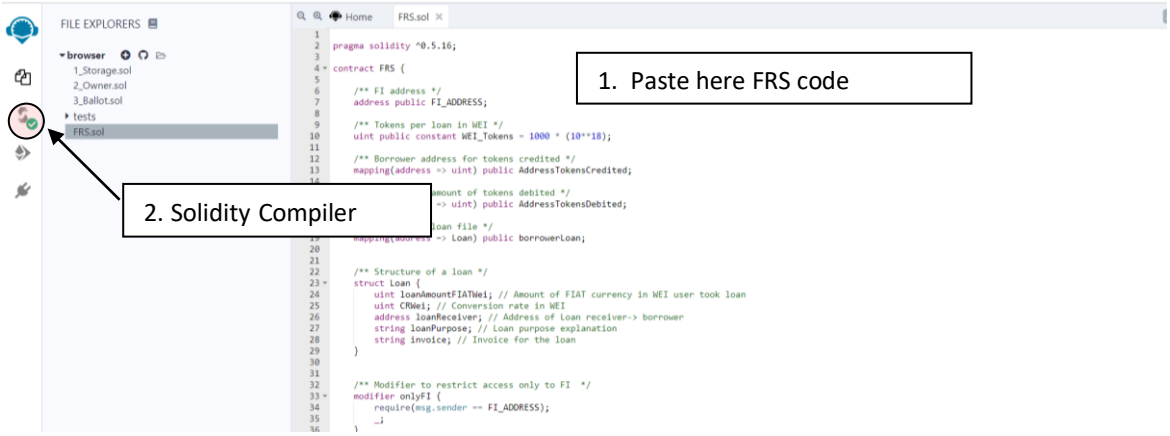
Create a “new file” by clicking on the button with the “+” icon in the top left corner of the side panel.



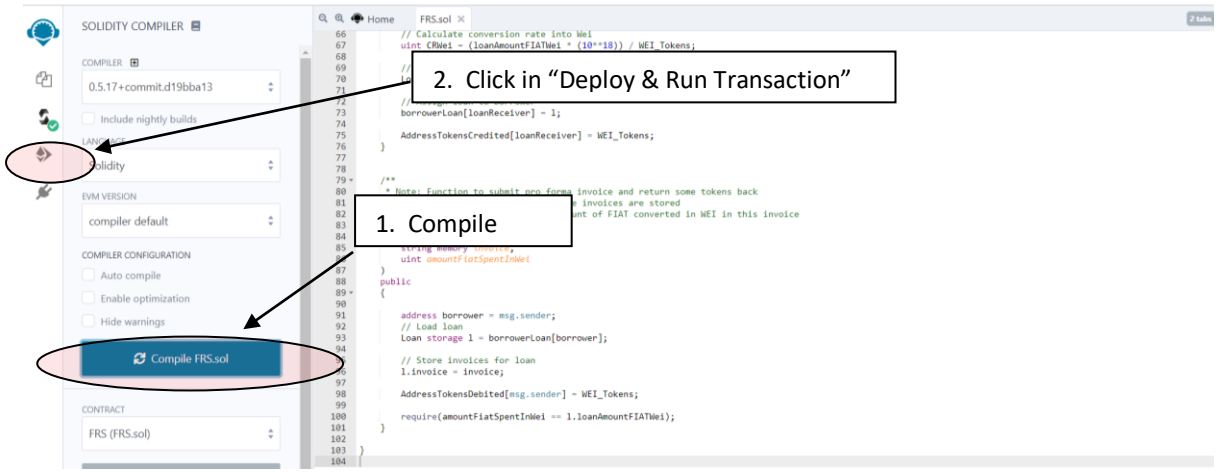
A new dialog pops up. Change the file name for “FRS.sol”, then press OK.



Open the word document called “FRS code”, copy its content and paste it in the mail panel. Secondly, go to the Icon Panel and click “Solidity compiler”.

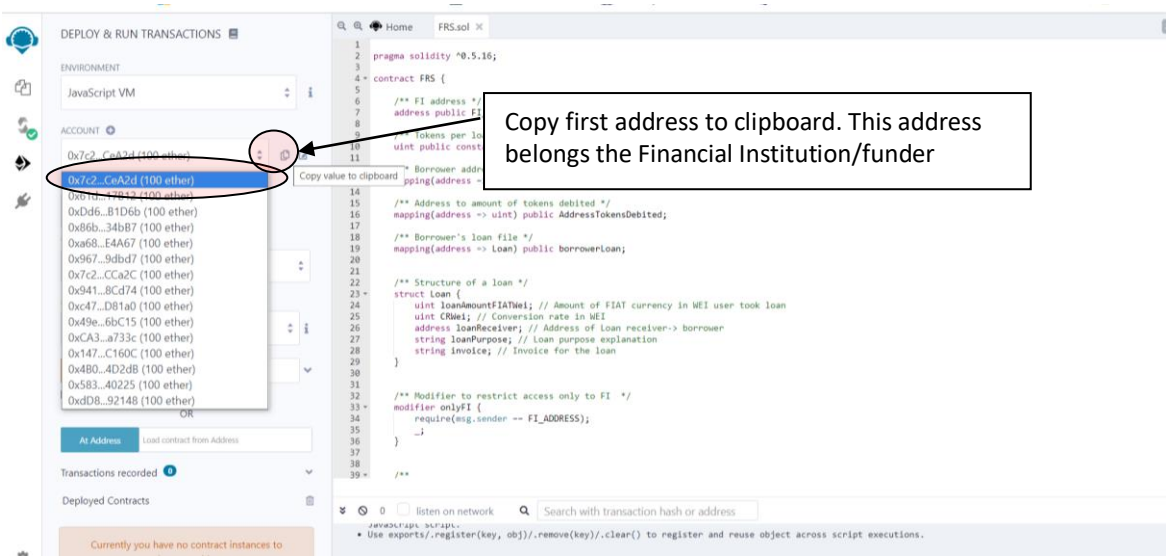


Proceed to compile contract.

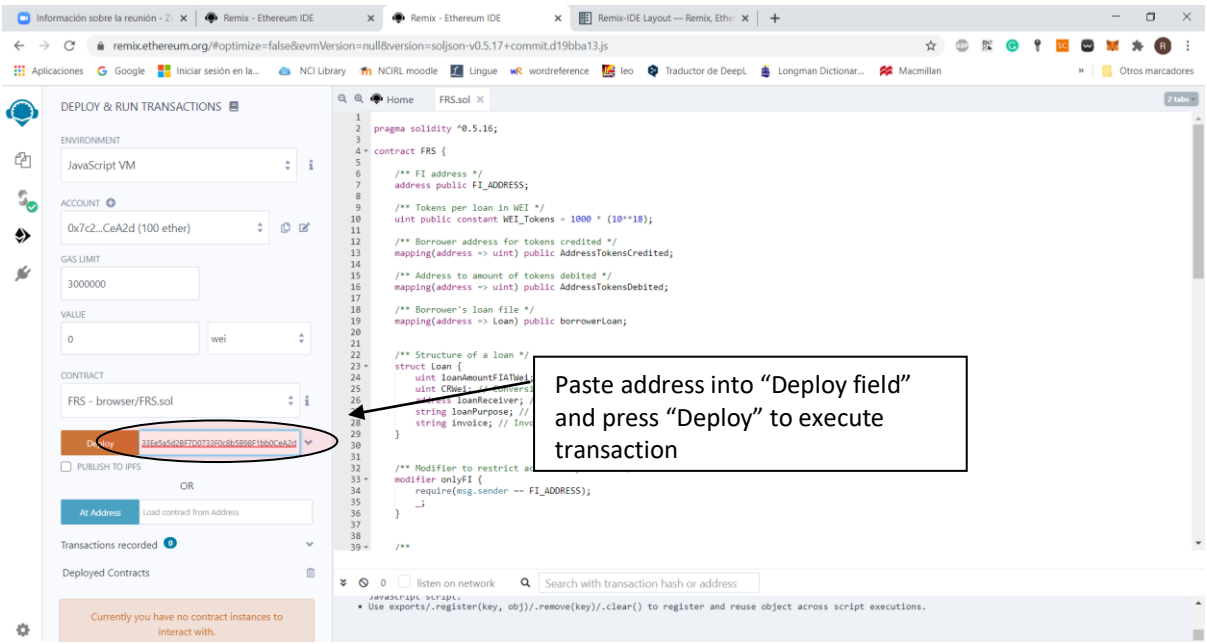


4 Instruction for deploying and running the code

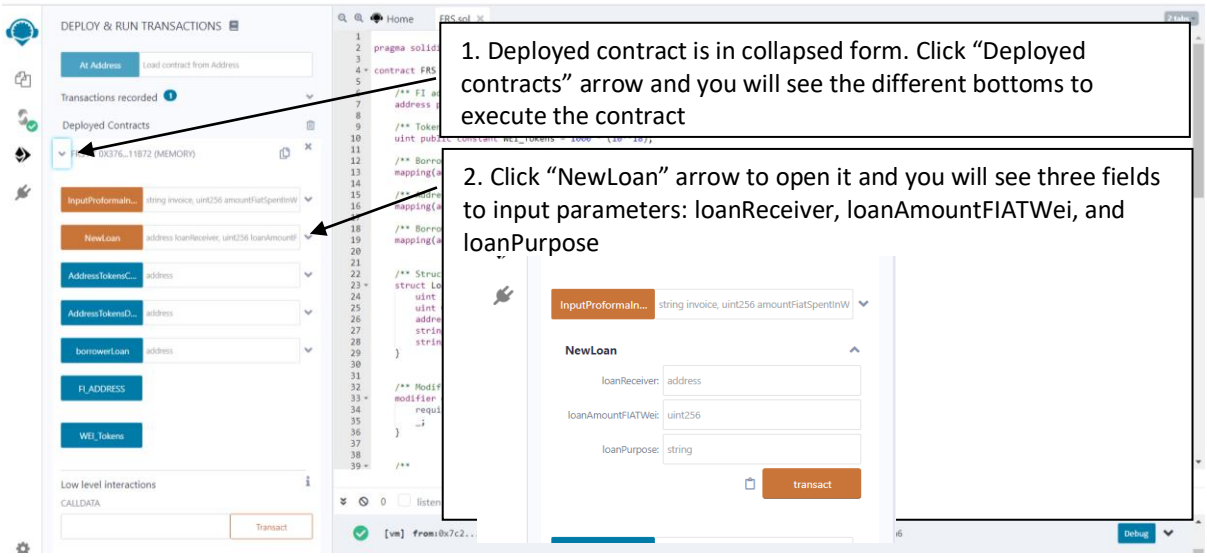
JavaScript VM provides several fake accounts with 100 ether each, which can be used to test the contract. First address will be selected for the Financial Institution and the second one for the borrower. Copy the first address to clipboard.



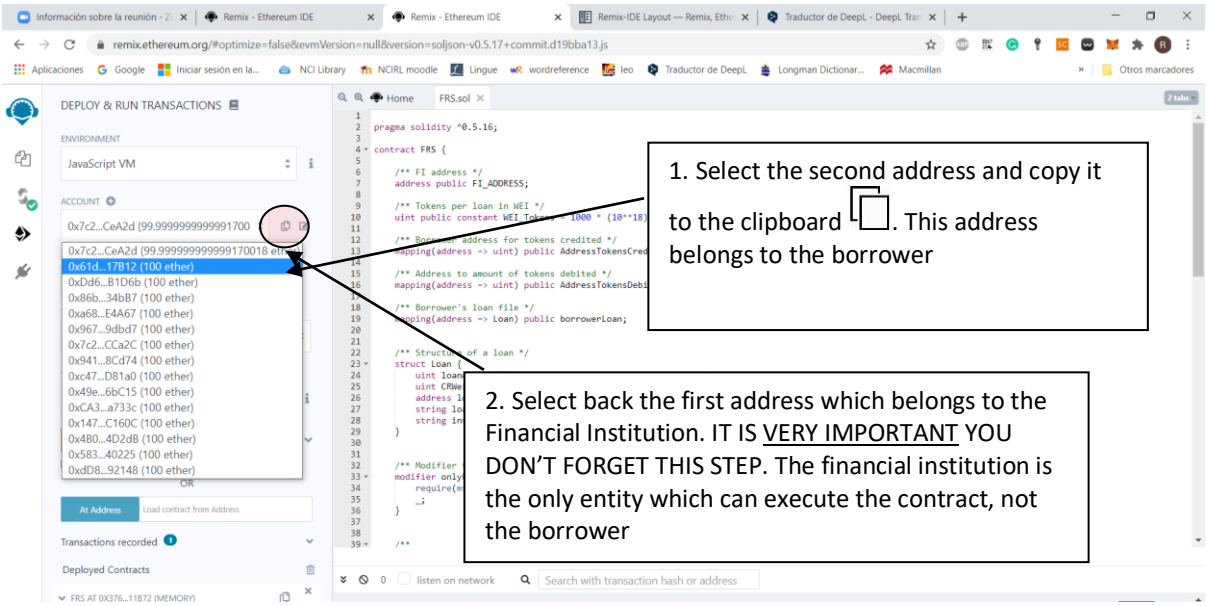
Paste address and deploy contract.



Deploy contract and check menu option made up of 2 orange buttons called “non-payable functions” which are used to input parameters and create a transaction. There are 5 blue buttons called “constant functions” which will only return values when clicked.



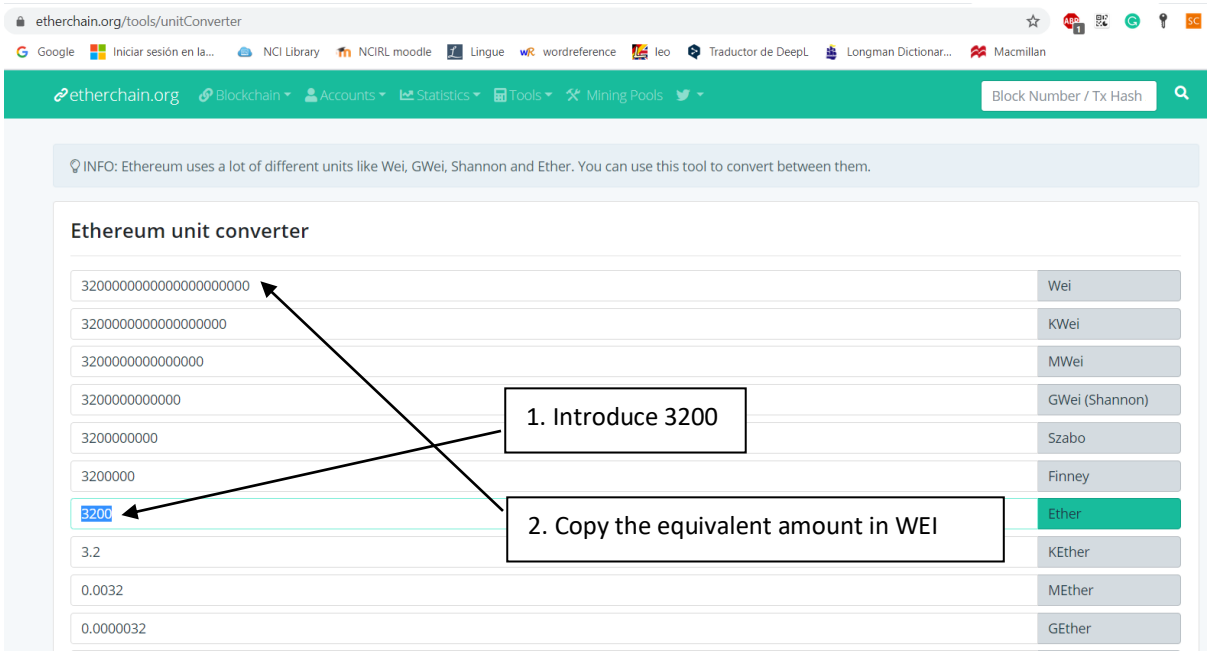
Scroll up to the top of the “Side Panel” up to the “account” section.



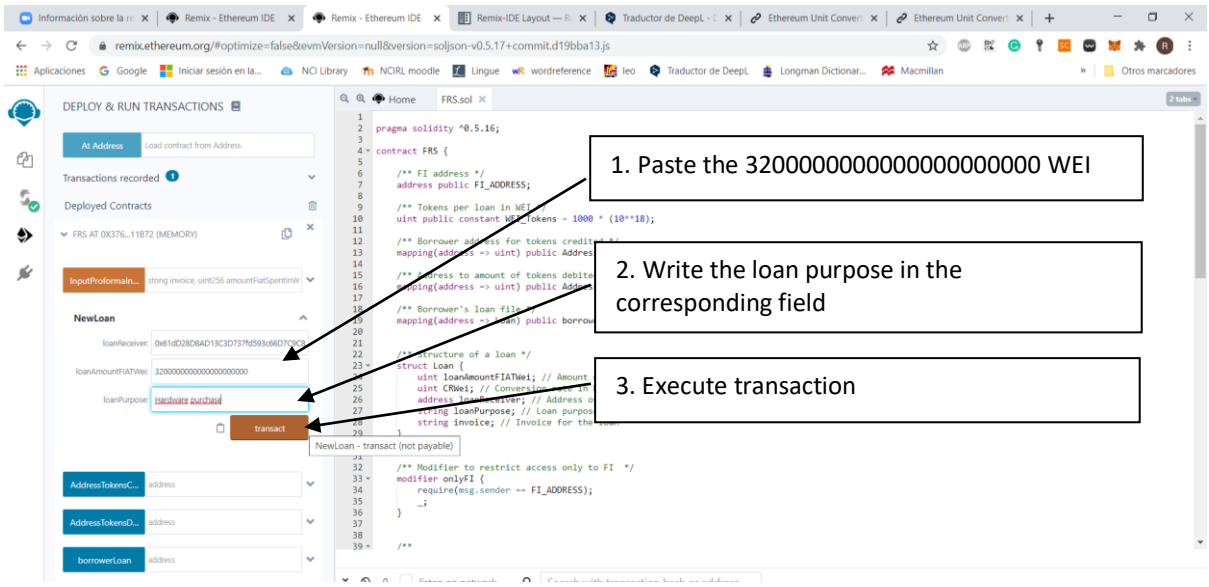
Scroll down to the “NewLoan” section in the “Side Panel” and paste the borrower’s address in the box “LoanReceiver”.

Go to following address and type the loan amount of €3,200 (Let's assume €1 = 1 Ether) to be converted into WEI.

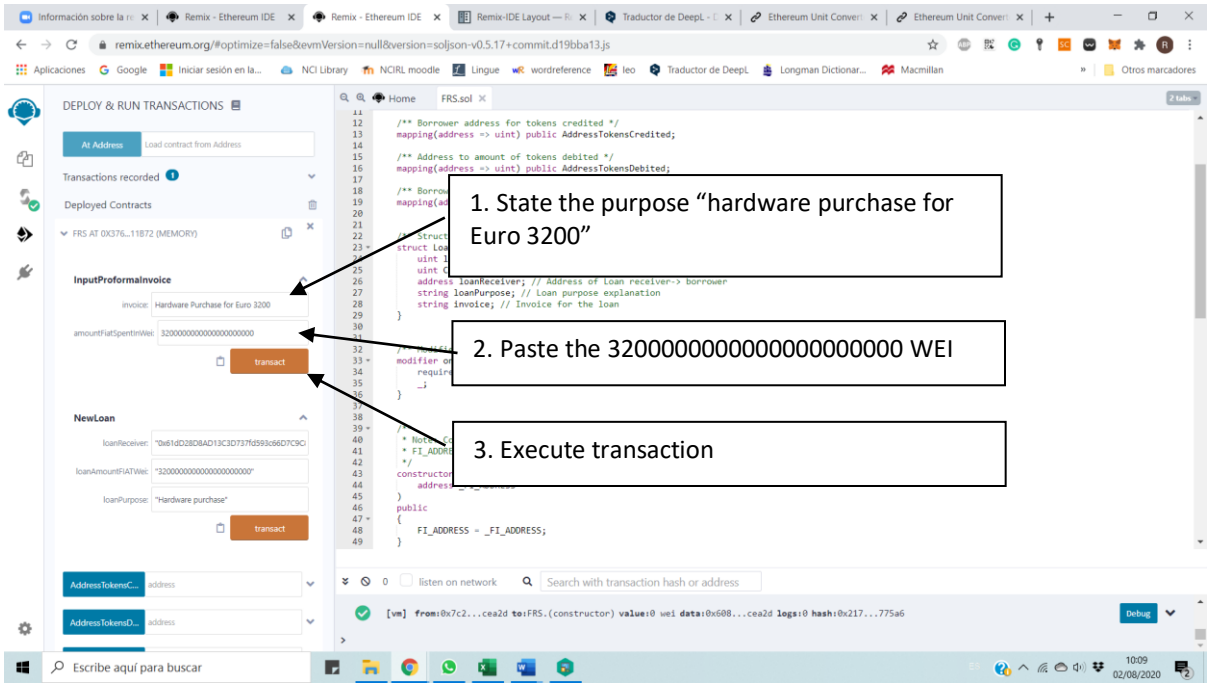
https://etherchain.org/tools/unitConverter



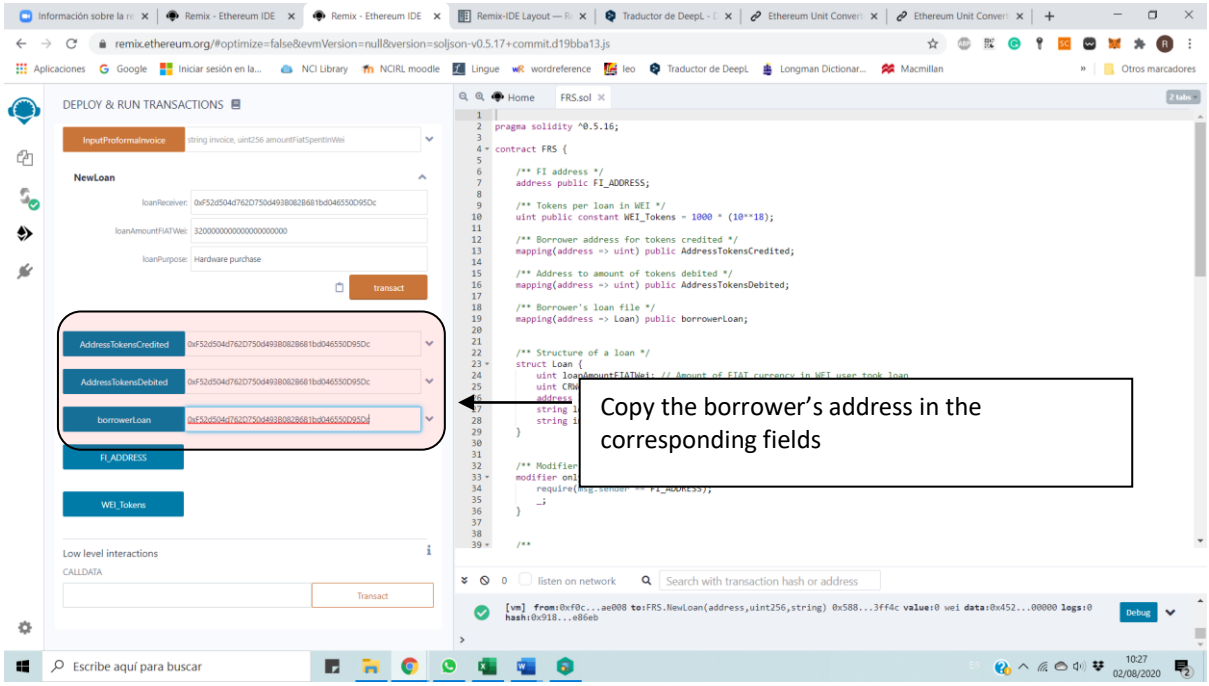
Go back to Remix IDE to the "NewLoan" section. Paste the amount in WEI in loanAmounFIATWei, write the loan purpose and execute the transaction.

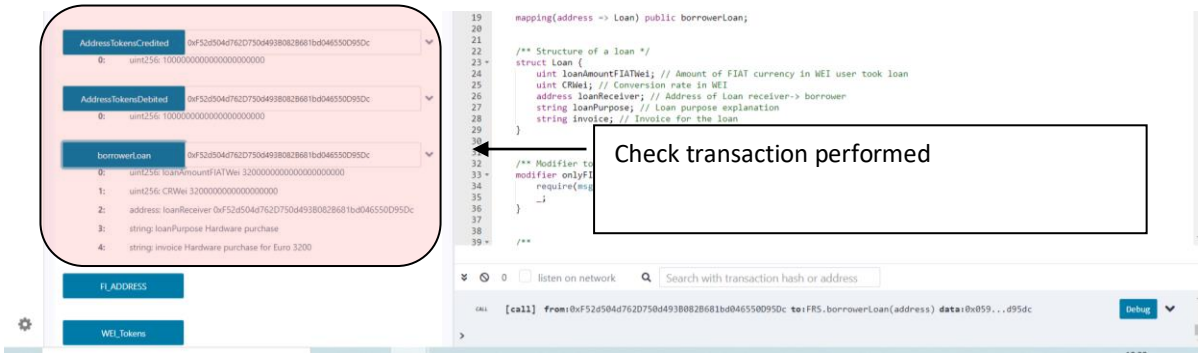


Go to the "InputProformaInvoice" Section and proceed to input the purchase data.



Check the transaction performed by inputing the the borrower’s address in the corresponding field.





References

- Remix documentation

  https://remix-ide.readthedocs.io/en/latest/.

- Blockchain for developer - Solidity

  https://blockgeeks.com/guides/solidity/

- Solidity tutorials

  https://www.tutorialspoint.com/solidity/