CS-48001 HW#3

ERC-20 TOKENS AND EXCHANGER CONTRACT

For both tasks 1 and 2 an ERC20 token implementation is chosen from OpenZeppelin. OnurArdaBodur and BodurOnurArda contracts are combinations of ERC20 ,ERC20Detailed , ERC20Burnable , ERC20Mintable.

Both tokens are implemented and deployed to the Ropsten Test Network.

Contract Address OnurArdaBodur:0x38266b79404C76367259D19A11E115D3402f8b0c
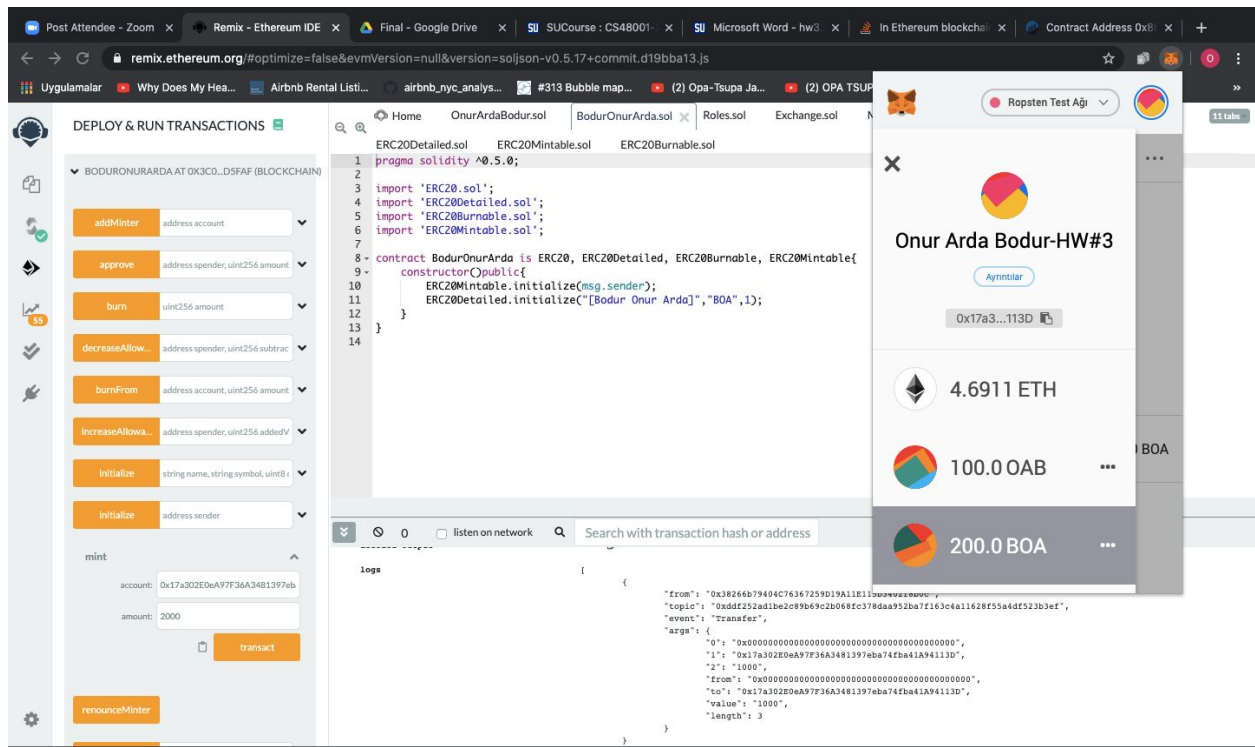Contract Address BodurOnurArda:0x3C02c462affb859bc8f856e55b833996EACd5faf
Contract Address Exchanger:0xb8E06a6bCEE4d5E200eCbf10815B976282355879
After deployment , mint functions are called from both contracts giving the account stated balances.

Wallet Address:0x17a302E0eA97F36A3481397eba74fba41A94113D

Same steps are followed for the BodurOnurArda token and the final wallet balances are as given below.

In the final step there is a contract named as Exchanger is implemented in order to make Exchange operations on the balances of the tokens.

Since we were exchanging from the account of the minter a possible solution was to burn from one token and mint from others.
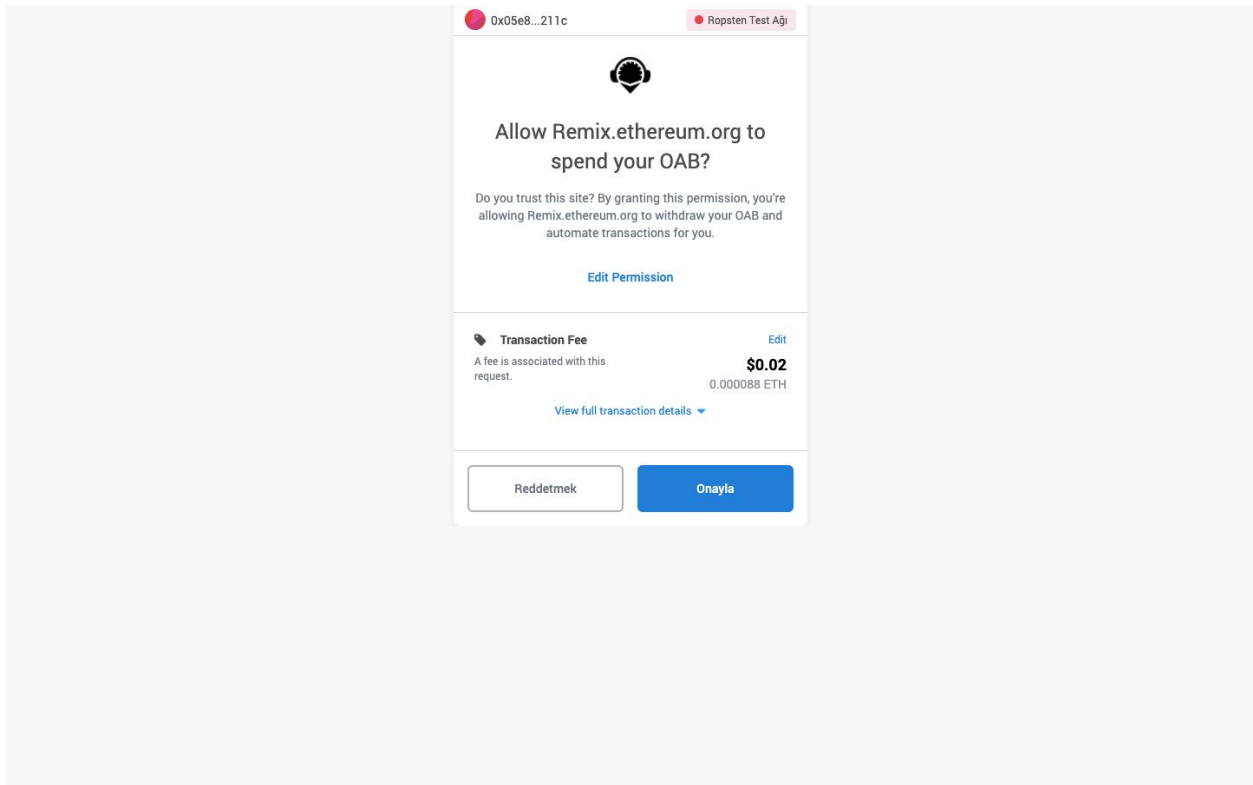
1.Exchanger Contract is implemented and deployed to the test network.
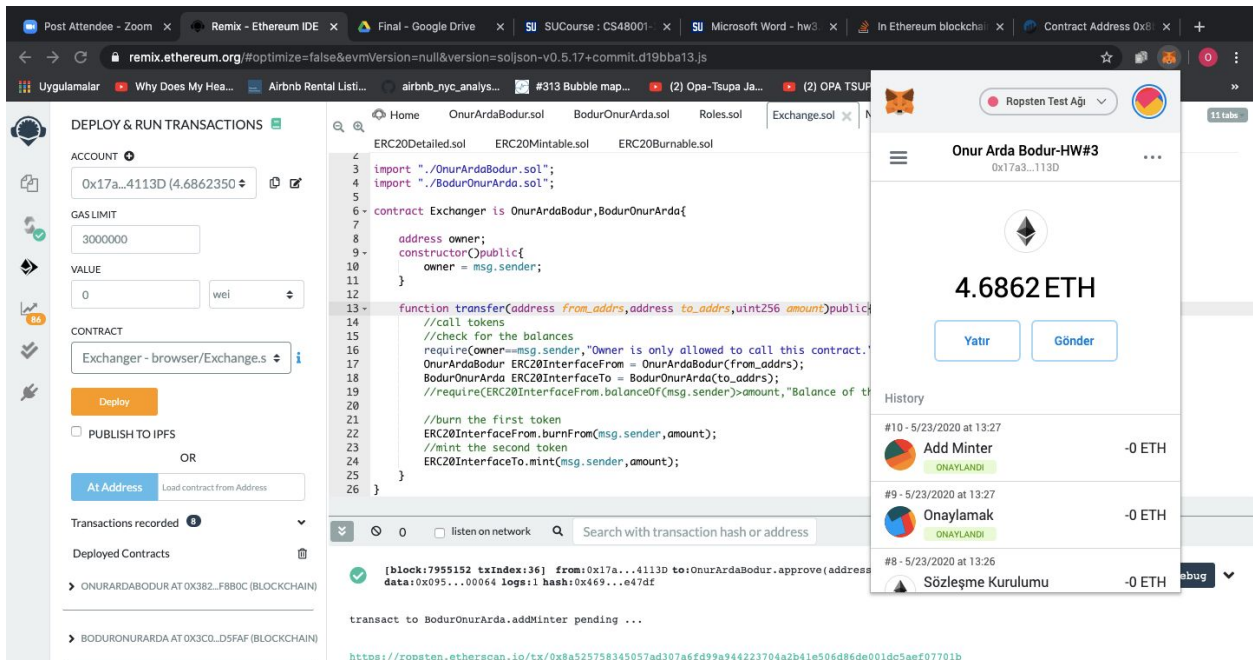
It can be seen in the file Exchange.sol

2.Transfer function needs the tokens contracts permissions for making the necessary operations.

-In the first phase ,approve function is called with the address of the Exchanger Contract by the current account whom the owner of the minted tokens.approve function also asks for an amount and the specific amount is given as 100(due to the decimal place in the tokens 100 corresponds to 10 tokens).

If a user wants to deal with more money ,the amount stated for the approve function can be increased.

-In the second phase ,addMinter function is called for giving the Exchanger contract the permission to mint the stated amount of BOA token after burning the stated amount of OAB tokens.

3.Transfer function called and the exchange between OAB token BOA token achieved.
This exchange is actually managed since the tokens minted were in the same address.

Transfer function Transaction
Hash:https://ropsten.etherscan.io/tx/0x98ac51d65c28bf5dfd990e9aa9b07c43ff0c522ff1c499e4b
4b6543bb66ae409
Contract Address for Exchanger Contract:0xb8E06a6bCEE4d5E200eCbf10815B976282355879
Final balances are as given below.