NPCI Blockchain Hackathon

Team – 15

Problem Statement - Creating a secure execution environment which can execute go programs by taking input data , perform the execution of the program, generate output / make state changes.(Secure Smart Contract execution environment).

Problem - Carbon credit calculation at present depends on manual data gathering and disclosure. The vetting process is also manual with a lack of transparency making it non-trustworthy. So is their a way forward in bringing transparency in carbon credits thus bringing practical innovation in sustainability.

Proposed Solution - In today's world removal of carbon has become a necessity so, we will try to achieve it by proper management of carbon. Right now calculation of carbon credit is done through gathering of manual data but it is not trustworthy and can be tampered so here the comes the role of Blockchain. Here we will try to integrate **blockchain with IOT** which will eliminate 100 percent human involvement from this process and high emitting organizations can monitor their carbon footprints. Therefore, it will create transparency in the system and make it easier to track and report reduction emissions.

Project Title – Transparency In Carbon Credits By Automating Data Management Using Blockchain.

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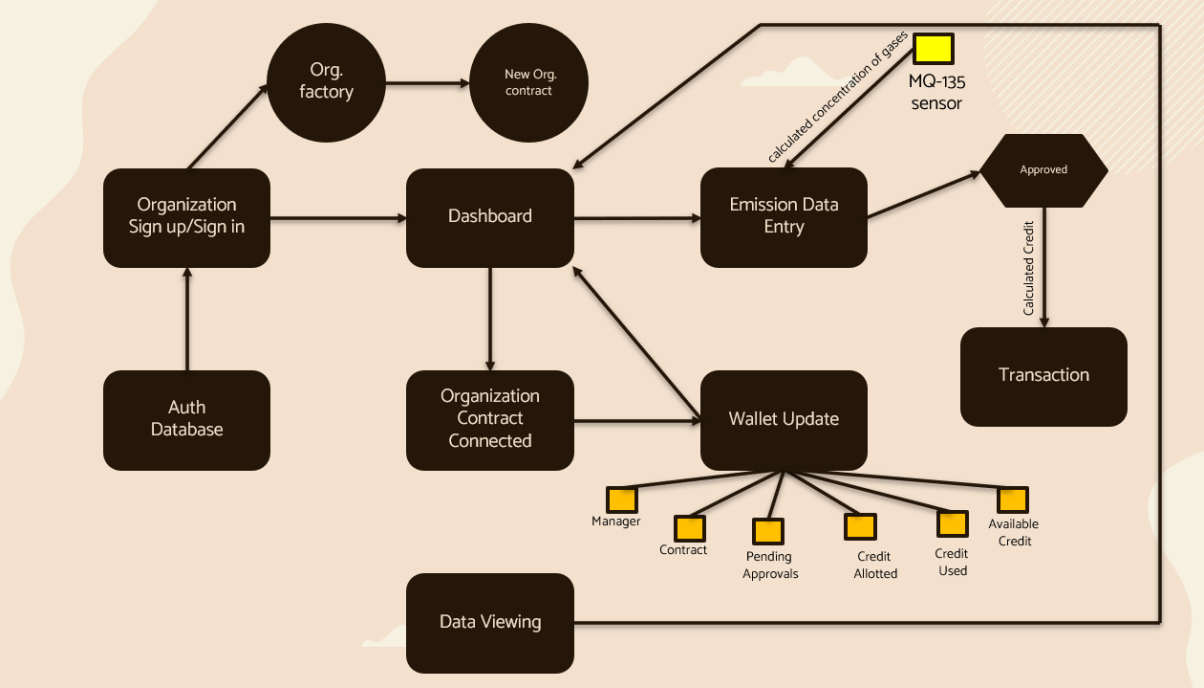
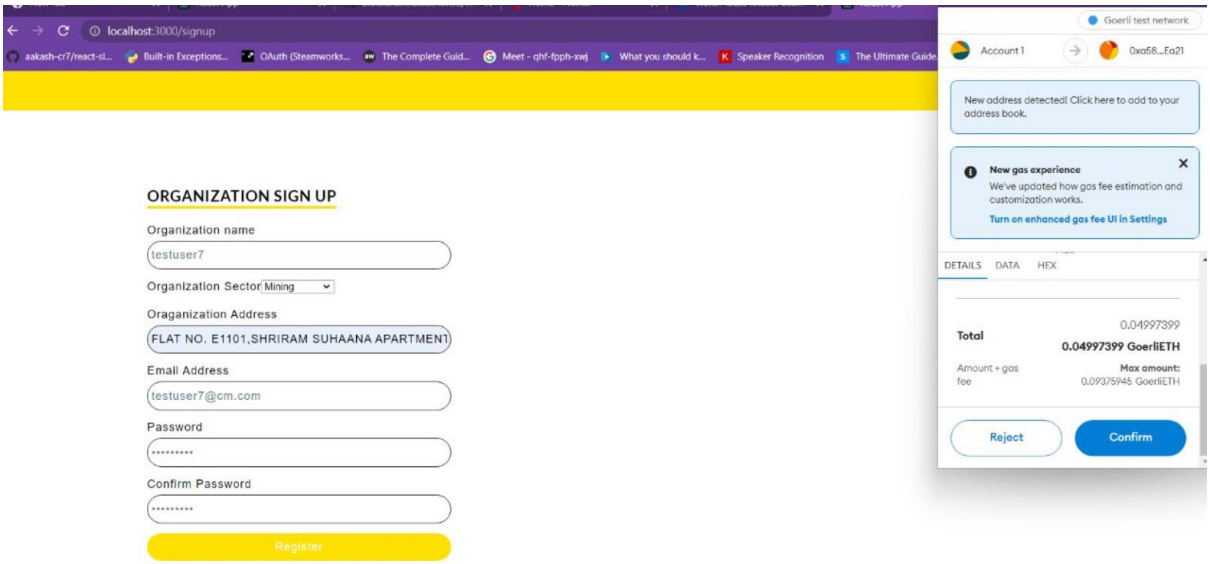
Solution Architecture



Results

1. **Organization Register- This will Draft a whole new contract for the organization.**



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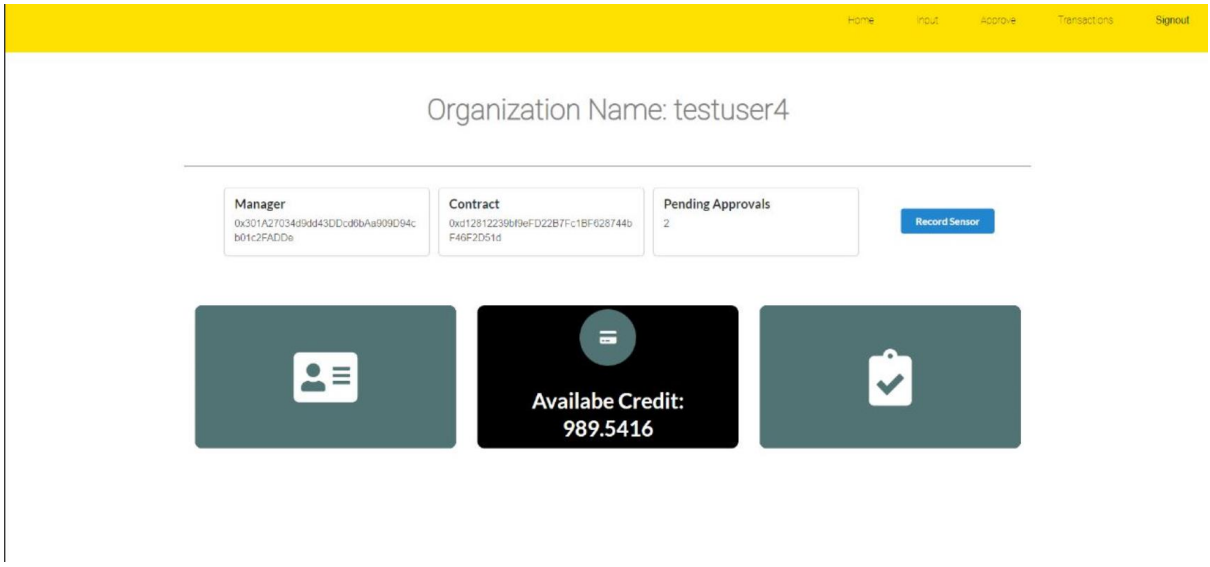
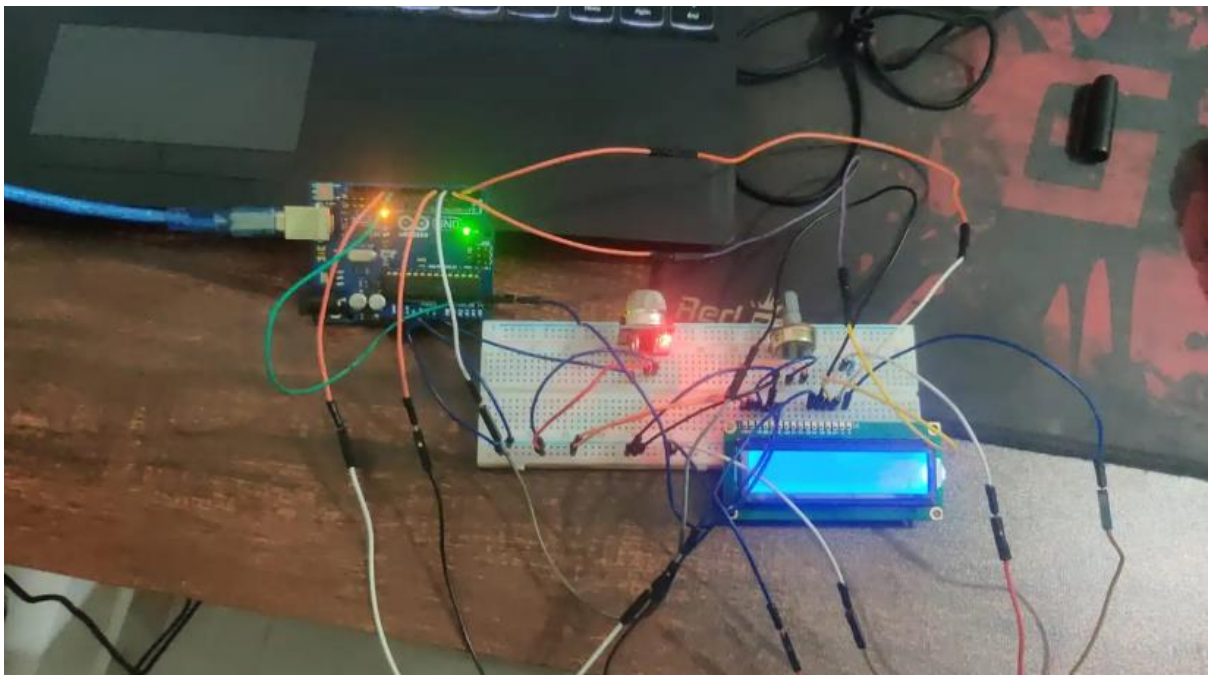
2. **Organization Home – Dashboard of organization where they can see information's like a) Deployed Contract Address b) Manager Address c) Pending Approvals Count d) Wallet Information like Allotted Credit, Credit Used and Available Credit**



3. **Sensor for Detecting Concentration of GHGs – CO2, CH4, N2O, HFC, PFC, SF6 that is send to our contract and used to calculate Carbon Credit.**



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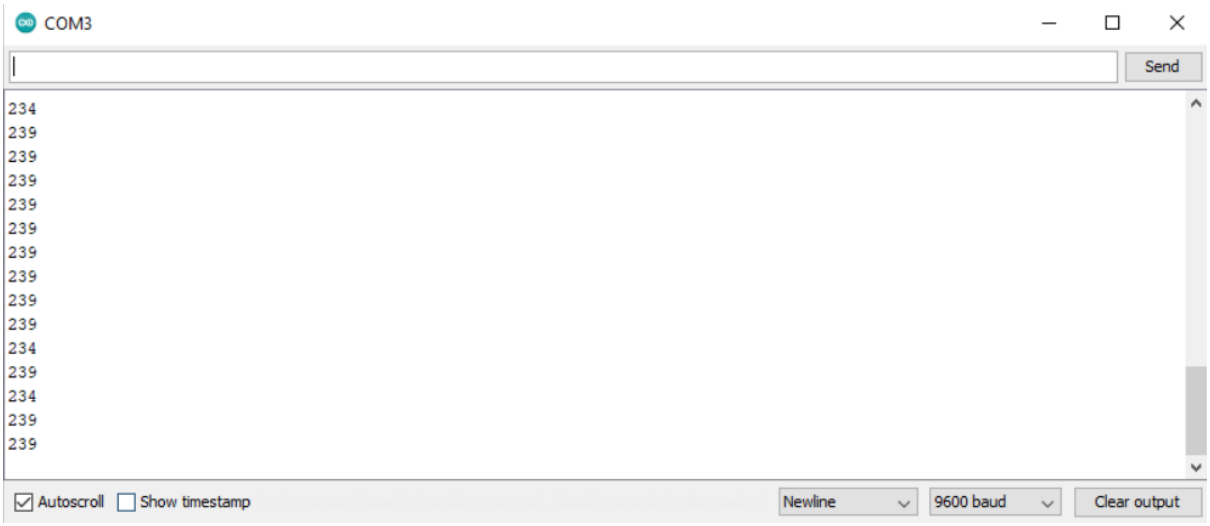
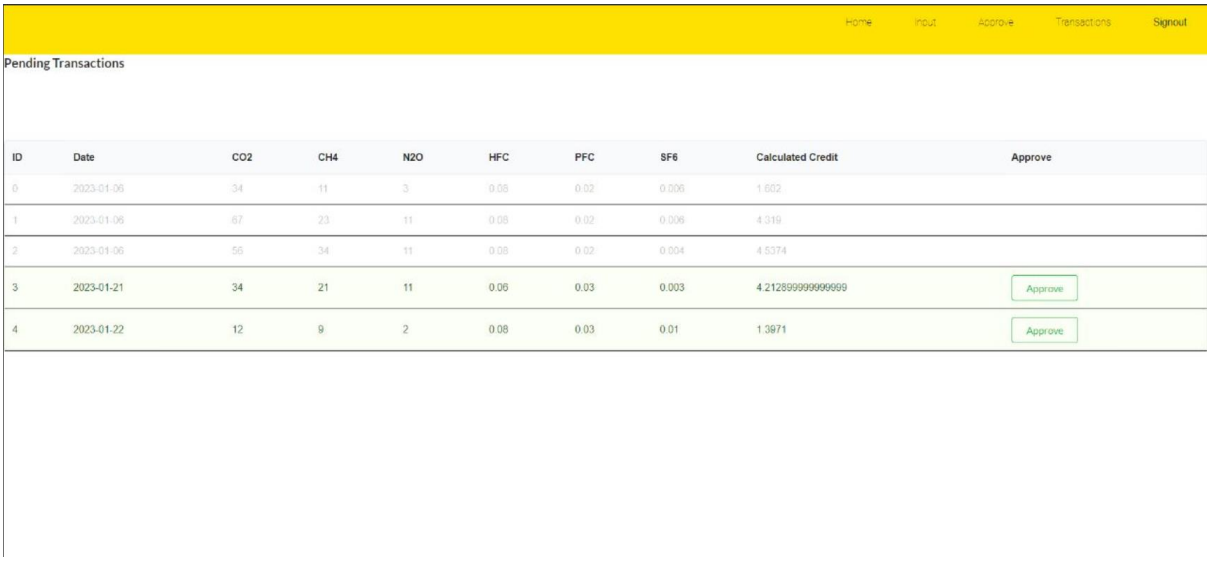


4. **After that all the data from our blockchain is listed in approval page for approval by organization(here organization can only see and sign the transactions cannot edit)**



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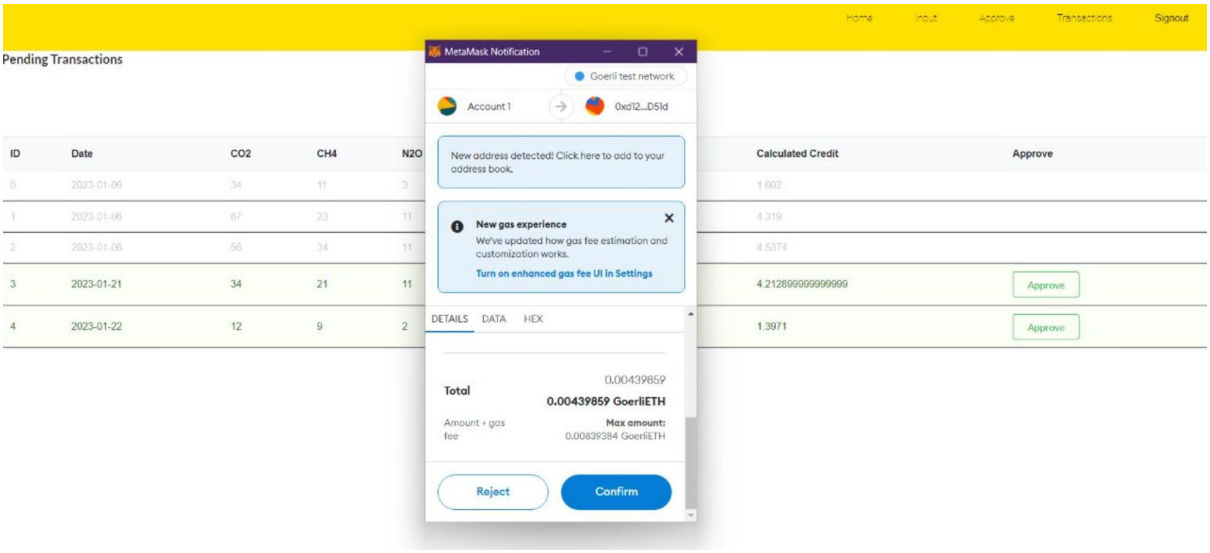
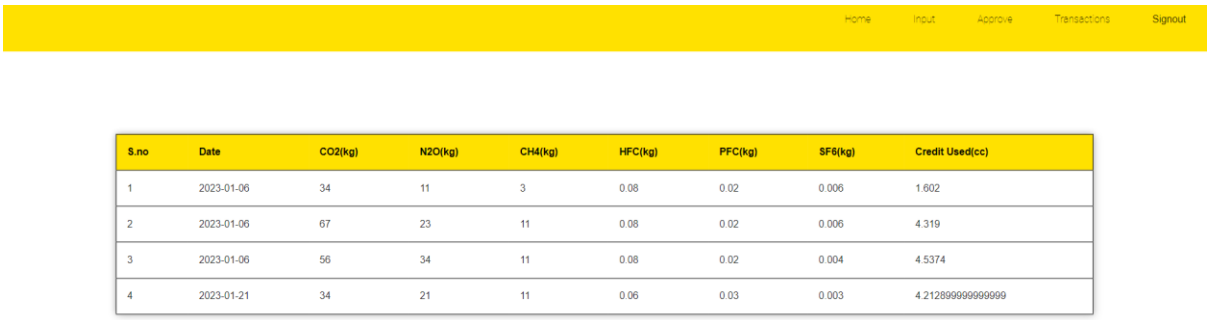
5. **All the approved transactions are blurred and approve button for unapproved transactions on clicking organization sign with their private key and submit the transaction to network.**



6. **Now transaction is submitted and listed in transactions tab and respective wallet fields(credit used, available credit) are updated.**



<u>Conclusion</u> – This Application will eliminate all kind of human intervention from process of managing carbon credit calculation based on emission of GHGs. Thus providing a reliable and quality data that has vast applications like monitoring organization uses and fields to took care of and all this data will act as fuel for many research and development of greener appliances.