CSE 528
Introduction to Blockchain and Cryptocurrency

Group Project Progress Report-1

Team Members :

Aabhaas Batra	2019001
Raj Kumar	2019084
Udit Narang	2019120

Problem Statement:

We have seen significant developments in medical facilities over the years.
But from the perspective of visitors or patients at hospitals, clinics, there are still some procedures that are inefficient and cause discomfort to the citizens.People always need to carry their medical records whenever they see the doctor. And it’s tough to keep a record of all your documents and take them with you each time you go to the hospital or clinic.

Idea:

Our idea is to provide a solution to this problem using blockchain technology. We aim to store people’s medical records on the blockchain, which will keep the information safe and accessible. This would also help us in decentralizing the data in the medical field. The primary users of our network would be the doctors and the patients.
The patient will have the authority to give access to their records to anyone. And hence, it would be possible to retrieve a patient’s medical history from any hospital in the world.

Planned Goals for Week 1 and 2:

11 Sept 2021 - 25 Sept 2021 :

- Identifying the tech stack required
- Learning about Solidity/Hyperledger
- Learning the tech stack to be used in the implementation

25 Sept 2021 - 09 Oct 2021 :

- Learning the tech stack to be used in the implementation
- Learning the basics about smart contracts and how to implement them
- Learning the basics of Dapp development

Individual Contributions by each team member for week 1 and 2 are as follows:

Aabhaas Batra

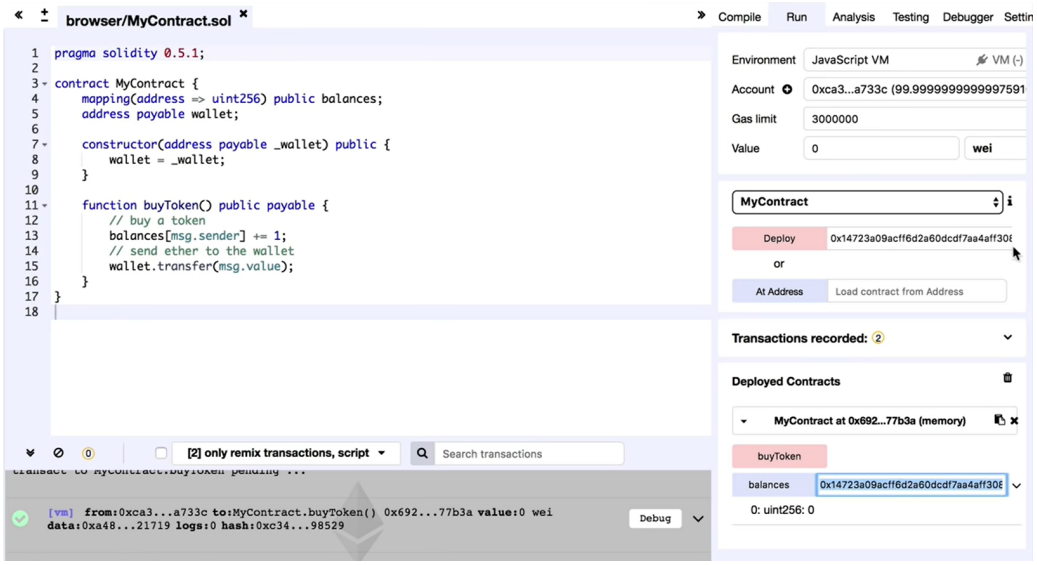
Goals Achieved:

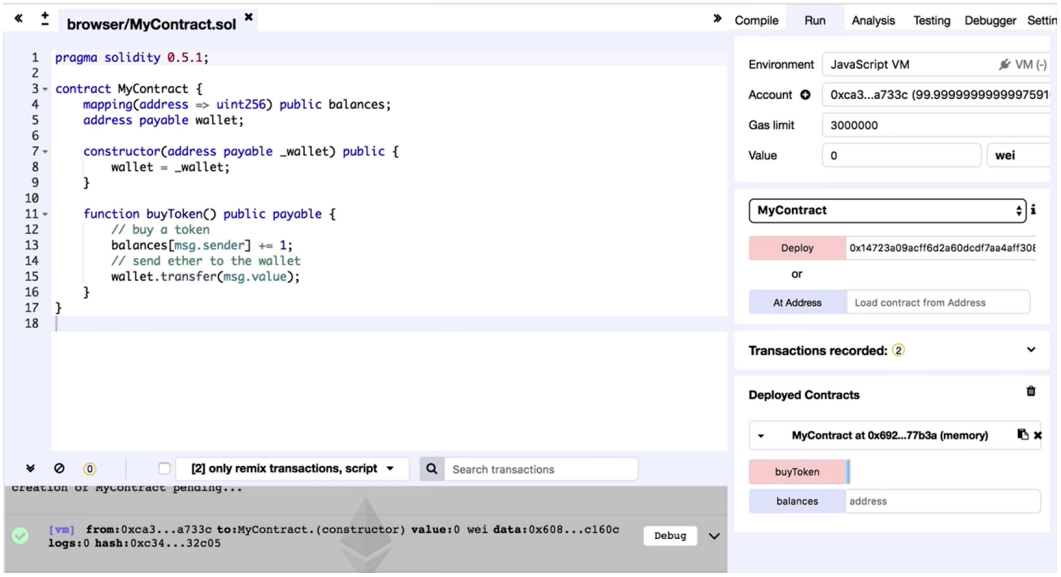
- Learned basic concepts of solidity.
- Understood data types and data structures in solidity.
- Learned about functions and modifiers in solidity.
- Learned to write a code to send ethereum.
- Learned how to write multiple smart contracts.
- Learned about inheritance in solidity i.e how properties of parent smart contracts can be inherited by the child smart contracts.
- Got an introduction to hyperledger fabric, where it’s used, why it’s used etc.
- Learned about different platforms of hyperledger as well.
- Learned how a dapp implemented using hyperledger works.

Sources Used:

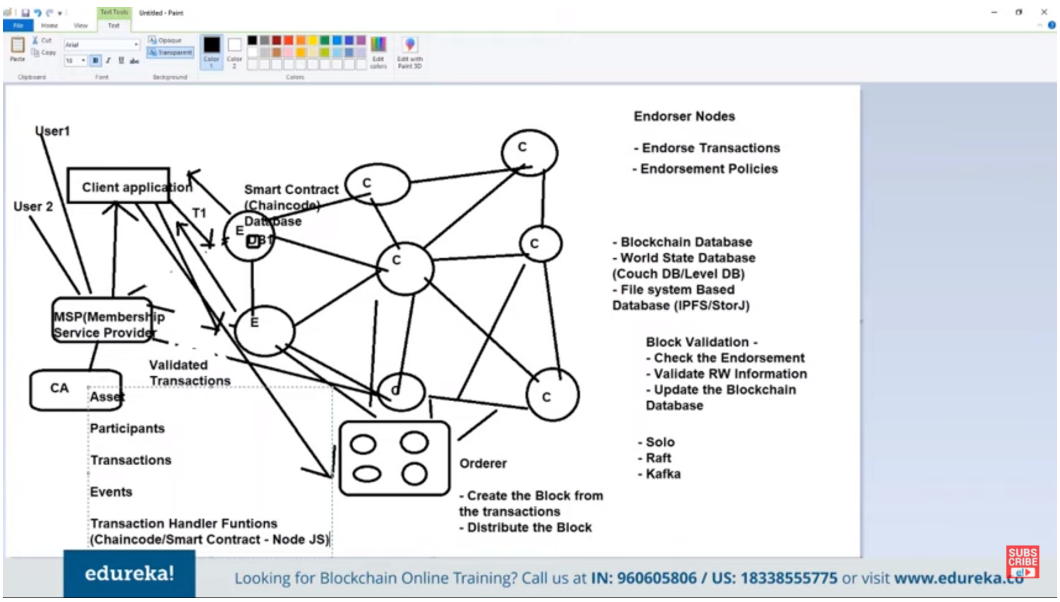
Video tutorial by freeCodeCamp.org : https://www.youtube.com/watch?v=ipwxYa-F1uY
Blog by Dapp University: https://www.dappuniversity.com/articles/solidity-tutorial#5
Video by edureka!: https://www.youtube.com/watch?v=js4pPW8qMW8

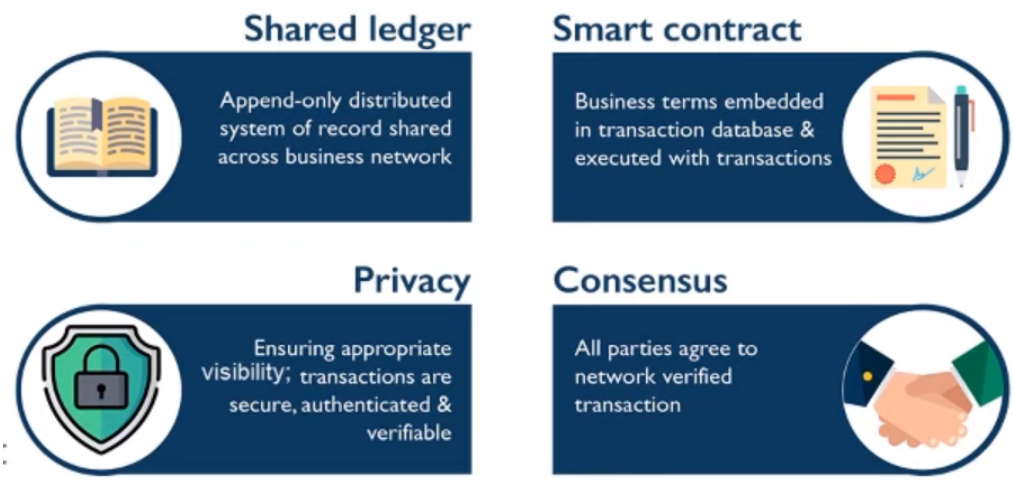
Screenshots of solidity tutorial:





Screenshots of hyperledger lecture:





Raj Kumar

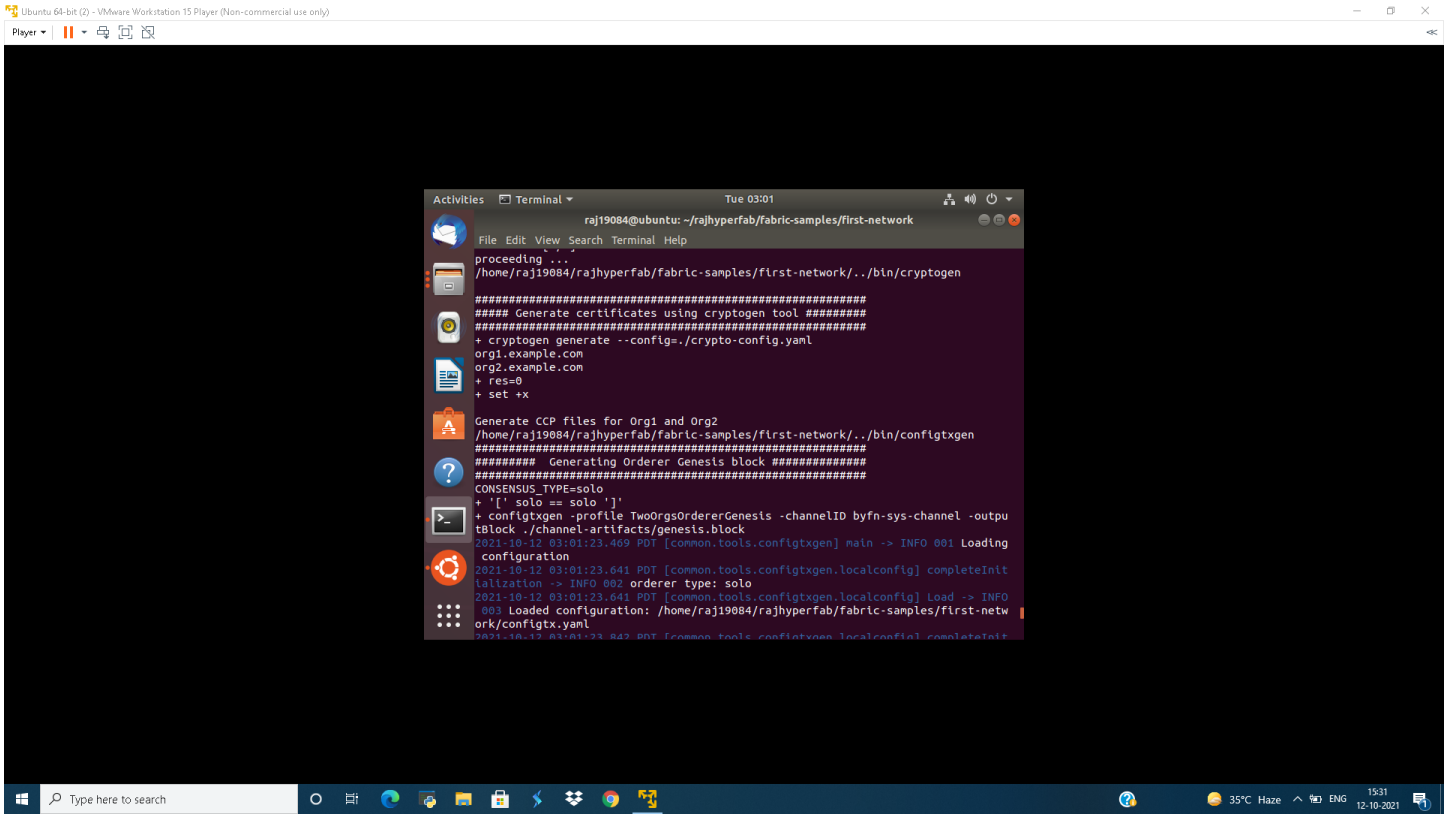
Goals Achieved :

- Learned basic concepts of hyperledger fabric framework.
- Learned about the concept of private blockchain and subchannels between peers.
- Learned basic concepts of docker and nodejs.
- Made first application in hyperledger fabric.

Sources Used :

Hyperledger documentation, Telusko youtube playlist for hyperledger fabric.

Screenshots:



Generating two channels with two peers each using hyperledger(Org1 and Org2 are channels).

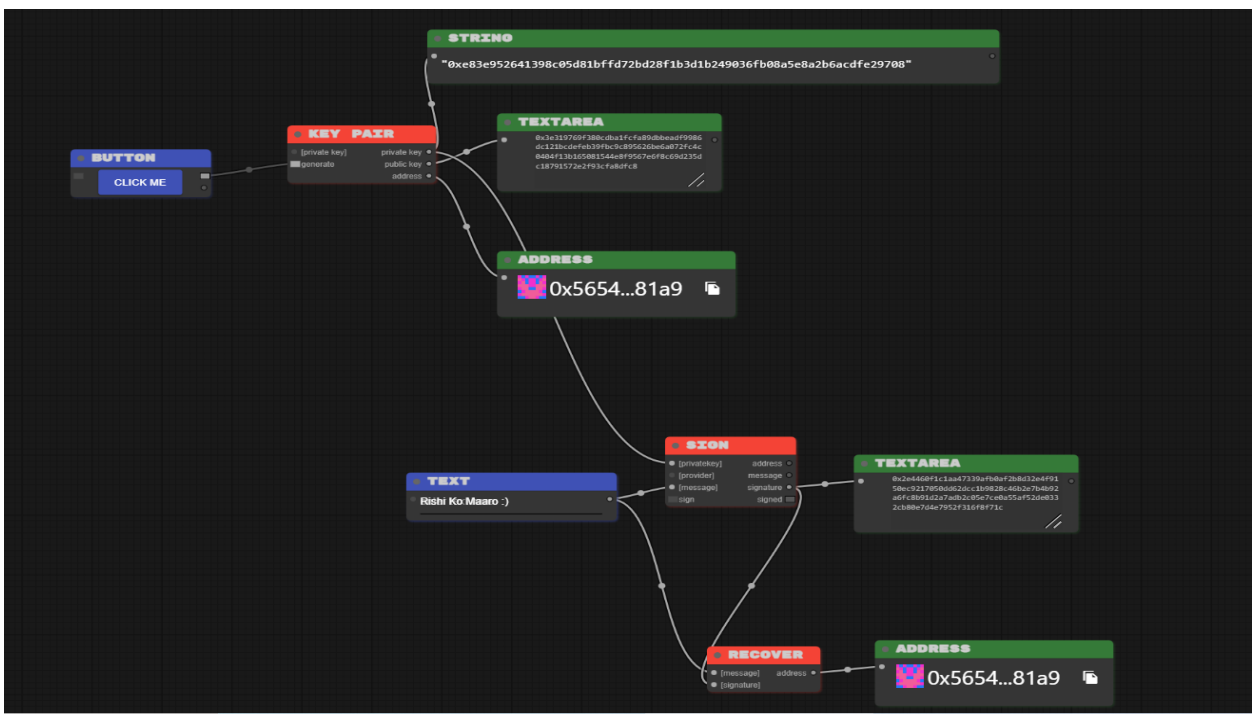
Udit Narang

Goals Achieved:

- Foundational Topics (Theory)
  - From Documentation on Ethereum.org covered
    - Intro to Ethereum
    - Intro to Ether
    - Into to DAPPS
    - Web2 vs Web3
    - Accounts

  - Handwritten Theory Notes:
    Link:https://drive.google.com/file/d/1WFMsmg2lp-oS6-urrK_ELTsMu_s4ivXE/view?usp=sharing

- Basic Key pair generation, signature and recovery



- Hands-on Practice with Solidity
  - Metamask Account Setup
  - Getting familiar with solidity syntax
  - Studied about various data types in solidity
  - Functions and access modifiers
  - Creating my first contract in solidity
  - Getting Account address, Public Key, and Private Key using metamask Mnemonic Phrases

- <u>Screenshots:</u>

BIP39 Mnemonic virus valid elbow smile shift artwork beach festival quit scorpion middle wire

Table CSV

Path Toggle	Address Toggle	Public Key Toggle	Private Key Toggle
m/44'/0'/0'/0/0	1CheTKFpFzPpAZaeoL2FQ3qhmqgurFyWBL	02c6e08861a0a4f3d679112e97e4fe5e308d925d5d9053c1e84a7b628de3d3ed1f	L3xcLumcXwJeZ9XgSnwPbsBpsjtaYAY5nHjuc
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<u>Code Snippet:</u>