2CSDE93- Blockchain Technology

Lab 10: To write a contract code to implement a two-player game Tic-Tac-Toe

Outline

- Prerequisites
- Tic-tac-toe
- Steps for the Implementation
- Conclusion

PREREQUISITES

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- <u>Truffle</u> is a framework for developing these Ethereum applications (dApps, or distributed apps). Installed via npm, it'll create a local test blockchain and manage your contract deployment to the blockchain.

- <u>Web3.js</u> is a JavaScript library that provides an interface for reading from and sending data to the contract once its deployed.

- You include it in your Truffle application and it'll get included with your HTML and other assets. It's also available in test mode, so you can write unit tests in JavaScript that modify and assert the state of your contract.

The Rules of the Game

- Player one (the host) makes the first move, followed by player two (the challenger).

- The first player to complete a row or diagonal of either X's or O's wins the game.

- If no player completes a row or diagonal of either X's or O's, the game is a draw.

STEPS FOR THE IMPLEMENTATION

Implementation Steps to create Dapp for Tic Tac Toe

1.Clone the repository using git clone https://github.com/anijitsahu/ethereum-react-simple-tic-tac-toe-dapp.git from Git Bash / Command Prompt

2.Navigate inside the directory by cd ethereum-react-simple-tic-tac-toe-dapp

3.Install all the necessary dependecies by using npm install

4.Generate the build by npm run dev

5.Open another Command Prompt and Run it as Administrator (in Windows) and navigate to the same directory ethereum-react-simple-tic-tac-toe-dapp

Implementation Steps

6.In the second Command prompt, run the *Truffle Development network* by truffle develop. Make sure you have installed Ethereum Truffle in your machiene

7.In the second Command prompt, deploy the blockchain by truffle migrate

8.Now in a Web browser navigate to http://localhost:8081 and enjoy the TicTacToe game

9.In the browser you have to **add** the Metamask Addon to talk with the Blockchain

10.If the game ended and you want to play it again, in the second command prompt hit Ctrl + C and then run truffle migrate --reset

Thank You