Name: Deepsqlunkn Rall N: 21102A0014 Sub: BLCH

## Assignment 6

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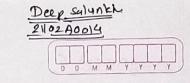
The Ethereum Vistual Machine (FVM) is a Crucial components of Ethereum's blockchain architecture. Discuss the sole of the EVM in enabling smart contract and decentralized application, how EVM ensure recurity and efficiency in executing smart contracts compared to traditional VM1 =) The FVM. is the cornerstone of Ethereum's blockchain, providing the envisonment for executing smart contents Smart combact execution: The EVM designed to execute code.

writteen in solidity when

Smoot combact is deployed to Ethereum, it's code is

compiled to Bytecods, which is then stored in Block than Decentralized application: Dapps are application that leverage smart contract to provide decembalized. Services. The EVM enables the execution of these dapps governing their operation Ensuring Security and Efficiency Compared to traditional

Sandboxing: The EVM operates in sandboxed environment,
meaning that smart contract cannot interest
diseasy with the underlying operating system or network

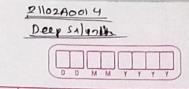


Determinism. : The EVT1 is deterministic, meaning. that same imput will alway produc same output this ensure that smart contact. execution are consistent and pradictable, which is essential for their reliability.

Gas Mechanism: Ethereum uses a gas mechanism to
limit the computational resource that can be consumed by preparaction This prevents mellions or resource -intensine smoot contract from oregulalmy the network.

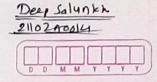
Solidity Compiler: The solidity compiler optimizes smarl.

contract cod to reduce gaste consumption.



Compare the workflow and transaction procuses in Bitcoin and Ethoreum Blockchain, How do the difference in theo architecture and consensus mechanism influence their respective use case and performance in handling teansactions? => Workflow and transaction Bit coin: I have again also her would sit you Workflow > Minere solve cryptographie, puzzles to conate. new blocks, Each blode contains a list of transaction, when a transaction is rentled, it is. added to the mempool, a pool of unconfirmed toursaction Miners. select toursaction from the mempool to include in the next. block they create. Transaction process, => Bitcoin transaction primarily involved transferry digital currency from one address to another. The transaction includes the sendes addres, seciplem address amount to be transferry and. a digital. Signature to prove the senders authory. Ethereum usafler: Similar to Bitain, minning oreate new Blocks

Containing toursactions, However Etherseun blocks
Con also contain smast contracts deployments or intractors



| 100000 |   |
|--------|---|
|        | Difference in Architecture and Consensus Mechanism            |
|        | a property set at all distributed acquired former             |
|        | Architecture: Bitcoin is promago a payment nowork while       |
| 1      | Ethercum is a platform for building                           |
|        | decentralized appliation. Bit coin focus on simply transactor |
|        | while Etheram support more complex operation.                 |
|        |   |
|        | Consensuri Mechanism: Ditcoin uses Moot of work where.        |
|        | minners compete to solve cryptographis.                       |
|        | MZZLe, initial Ethorum and same but now has                   |
| MILL   | transitioned to proof of stake, where ralidator stake.        |
| -      | their either to participate in the consensus process.         |
| 1      | most positioned to long a long man all of balks               |
|        | Public at soomen all and weither and the remitt               |
|        | the next black they crate                                     |
|        |   |
|        | Where Alexanian asituanest minted & parasing antiqued         |
|        | many hatrick printment from                                   |
| 1      | as Philai posturaret at vallan d sulla                        |

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