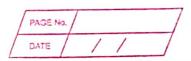
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BlockChain Assignment 1

<u>(1)</u>	Block Chain Bacis
	Define BlockChain
	A blockchain is a decentralized digital ledger
	that stores data in blocks linked
	Chronologically and Cryptographically. Each
	block Contains a hash of the previous
	block, time Stamp, data, and a nonce. This
	Structure ensures tamper-resistance, as
	altering one block would require
	Changing all Subsequent blocks, which is
	Computationally difficult. Blockchair are maintained
	by distributed networks, where Consensus
A 10 7 -	mechanisms like proof of work or proof
	of Stake ensure data Validity without a
	Central authority.
	Cartain salinos rigi
	- List two real life Cases.
•	(1) Supply Chain management:
	Blockchain helps track product movement
	from origin to Consumer, ensuring
	transperency and reducing fraud.
, .	- 12 m I'm that att years wind
ĮĮ.	ii) Digital identity:
	Individuals Can Control their identities Securely
1_	using block chain, avoiding Centralized breaches.
	wing process of the second
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2	Block Anatomy:	Tel nor fi	and distanta fil
	Draw block Ar	ratomy Dia Daigram.	
	1 - 3' - 1' - 2' - 2	Block #1	7. 211
,i	The Haver of T	imestamp: 2025-06-07	
. ,		lata: "Transaction A"	
		Previous Hash: 0000	
,/·		Nonce: 57248	
	!	Merkle Root! albacad4	
- i -		Hash: 4f7c.ef9	Friends .
		arm the property of the	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
	charity and	transfer folials	12
L	- Briefly explain	with an example	how the Markle
	II	verify data inter	
		root is a sing	
	all transaction	an in a block.	Transaction are
		paired re Cursiv	
		remains	
		13.4-1	
	11	the applicant	
	If you ha	we transactions	Tri and Tre
	their hashe	s H1 and H2	Cambine into
	Merble Root	= Hash (HI + H2) . T	francaction
_	Change, the	rooter Changes, f	del pina Verifi.
	data integr	ityailin quickly to with	out scanning
	the whole	block.	o Carring
		1	
	£.	•	1.48



3	Consensus Conceptualization
	-What is Proof of work and why does it require energy?
->	Pow requires nodes (miners) to Solve Complex mathemathemathems to Validate blocks. It's energy-intensive because miners perform millions of hash operations to find a Valid nance that
	meets the difficulty target
	What is proof of Stake and how does it differ POS Selecte validators based on the amount of Crypto Currency they "Stake" in the network. More Stake= higher Chance to Validate. It's energy - efficient and dis Courge bad be haviour since validators risk their Stake.
	What is Delegated groof of Stake and how one validators selected?
	In DoPs DPos, Stakeholders vote for a Small number of trusted delegates who Validate transaction. It improves Scalability and performance. Validator are selected through Community Voting, making the System more democratic and fast.