

## TASK - 2

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### Blockchain Platform Comparison :

#### 1). Ethereum

**Type** : Public

**Consensus Mechanism** : Proof OF Stake

**Permission Model** : Open - Decentralized

**Speed** : ~30-100

**Smart Contract Support** : Yes like use solidity

**Token Support** : Native token - ETH

**Use cases** : DApps, NFTs

**Technical Uses** : Turing Complete Contracts

**Short Note** :

Ethereum as a public blockchain, prioritizes decentralization and transparency, offering robust smart contract support through Solidity and a native token (ETH). However, its lower throughput (~30-100 TPS) makes it less ideal for high-volume enterprise applications.

## 2). HyperLedger Fabric

**Type** : Private

**Consensus Mechanism** : Pluggable

**Permission Model** : Private - Permissioned

**Speed** : ~3000+

**Smart Contract Support** : Yes - Go, Javascript

**Token Support** : No Native token

**Use cases** : it can use like in supply chains and logistics

**Technical Uses** : Modular architecture Private channels

**Short Note** :

Hyperledger Fabric, a private blockchain, is built for enterprise use. It uses a modular consensus system, supports private transactions via **channels**, and scales well (3000+ TPS). It does not natively support tokens but provides flexible smart contract capabilities in Go and JS. It's best suited for internal enterprise applications and supply chains.

## 3). Quorum

**Type** : Consortium

**Consensus Mechanism** : Istanbul BFT/Raft

**Permission Model** : Permissioned

**Speed** : ~200-500+

**Smart Contract Support** : Yes like Solidity

**Token Support** : Optional

**Use cases** : InterBank transfers

**Technical Uses** : privacy layers, ethereum compatible

**Short Note :**

Quorum, a consortium blockchain, merges Ethereum compatibility with permissioned access. Its use of Istanbul BFT or Raft consensus enhances speed and allows for privacy-preserving transactions. It supports Solidity smart contracts and can optionally use tokens, making it suitable for financial consortia.

**Questions :**

- For decentralized app Ethereum is best due to its open nature, token economy, and large developer ecosystem and easy interface for the developers.
- For a supply chain network among known partners, Hyperledger Fabric offers high throughput and privacy through channels.
- For an inter-bank financial application, Quorum is ideal because of its Ethereum compatibility, permissioned control, and privacy features.