Task - 2 of Day - 5

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1. Blockchain Platform Comparison Table

Blockchain Name	Type	Consensus Mechanism	Permission Model	Speed / Throughput (TPS)	Smart Contract Support (Y/N + Language)	Token Support (Native or not)	Typical Use Case	Notable Technical Feature
Ethereum	Public	Proof of Stake(PoS)	Open	~15 TPS(Layer 1)	Yes(Solidity, Vyper)	Yes(ETH, native)	DeFi, NFTs, DAOs, public dApps	High decentralization, open access
Hyperledger Fabric	Private	Pluggable(PBFT)	Permissioned	3,000+ TPS	Yes(Go,Java, JavaScript)	No native token	Enterprise, supply chain, B2B	Channel-based privacy, modular design
R3 Corda	Consortium	Pluggable(RAFT, BFT)	Permissioned	Real-time(high, not TPS-centric)	Yes(Java, Kotlin)	No native token	Inter-bank, finance, regulated B2B	Point-to-point privacy, legal contracts

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2. Short Report: Technical Comparison and Platform Suitability

Technical Capabilities Comparison

- **Ethereum,** as a public blockchain, excels in decentralization and transparency. Its open, permissionless model allows anyone to participate, making it ideal for decentralized applications (dApps) and public asset tracking. However, its transaction speed is limited (~15 TPS on Layer 1), and transaction costs can be high. Ethereum supports robust smart contracts via Solidity and has a vibrant developer ecosystem**.**

- **Hyperledger Fabric** is a private, permissioned blockchain tailored for enterprise needs. It offers high transaction throughput (over 3,000 TPS), a modular architecture, and strong privacy via channel-based data sharing. Its pluggable consensus (such as PBFT) and support for multiple smart contract languages make it highly flexible for business applications. However, it lacks a native token**.**

- **R3 Corda,** designed as a consortium blockchain, focuses on privacy and regulatory compliance. It utilizes point-to-point data sharing, allowing only relevant parties to view transactions. Corda is optimized for real-time processing in financial services, supports smart contracts in Java/Kotlin, and offers pluggable consensus mechanisms. Like Fabric, it does not have a native token**.**

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3. Platform Choice Justification

- **Decentralized App (dApp):**
  Choose **Ethereum**. Its open, permissionless nature, strong smart contract support, and large developer community make it the best fit for public dApps where decentralization and transparency are priorities.

- **Supply Chain Network Among Known Partners:**
  Choose Hyperledger Fabric. Its permissioned model, high throughput, and channel-based privacy are ideal for supply chain scenarios where multiple known organizations need to collaborate securely and efficiently.

- **Inter-bank Financial Application:**
  Choose R3 Corda. Its focus on privacy, regulatory compliance, and real-time

settlement makes it the top choice for financial institutions needing secure, confidential, and legally enforceable transactions among trusted partners.
