

Blockchain Platform Comparison Assignment

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June 11, 2025

Comparison Table

Blockchain Name	Type	Consensus Mechanism	Permission Model	Speed / TPS	Smart Contract Support	Token Support	Typical Use Case	Notable Technical Feature
Ethereum	Public	Proof of Stake (PoS)	Open	15-30 TPS	Yes, Solidity	Yes (Native Token: ETH)	Decentralized apps (DApps), NFTs	Supports smart contracts, open ecosystem
Hyperledger Fabric	Private	Pluggable Raft, Kafka (e.g.,)	Permissioned	2000+ TPS	Yes, Go / JavaScript	No native token	Supply chain, health-care systems	Privacy through channels, modular design
Quorum	Consortium	Istanbul BFT / Raft	Permissioned	100-200+ TPS	Yes, Solidity	Optional Token Support	Inter-bank settlement, finance	Private transactions, Ethereum compatible

Short Report: Platform Comparison and Use Case Suggestion

This assignment compares three popular blockchain platforms: Ethereum (public), Hyperledger Fabric (private), and Quorum (consortium-based). Each platform offers unique technical features suited for different use cases.

Ethereum is a public blockchain that uses Proof of Stake. It allows anyone to participate and build decentralized applications using Solidity smart contracts. Though its transaction speed is comparatively low, it has a vast developer community and high transparency.

Hyperledger Fabric is a private, permissioned blockchain designed mainly for enterprise use. It supports pluggable consensus algorithms and offers high throughput. Its standout feature is "channels," which ensure data privacy between participants. It does not have a native token but excels in internal business networks.

Quorum is a consortium blockchain developed on Ethereum's codebase. It supports smart contracts, ensures transaction privacy, and is ideal for financial applications. Its consensus mechanism is faster than public blockchains, and it's suitable for networks among known entities.

Platform Choices:

- For a decentralized app: **Ethereum**, due to its openness and smart contract ecosystem.
- For a supply chain among known partners: **Hyperledger Fabric**, for its privacy and speed.
- For inter-bank finance applications: **Quorum**, as it blends privacy with Ethereum compatibility.