TASK 2

Blockchain Name	Type	Consensus Mechanism	Permission Model	Speed / Throughput	Smart Contract Support	Token Support	Typical Use Case	Notable Technical Feature
Ethereum	Public	Proof of Stake (Ethereum 2.0)	Open	~30 TPS (Layer 1)	Yes (Solidity, Vyper)	Native (ETH)	DApps, DeFi, NFTs	EVM, large developer ecosystem
Hyperledger Fabric	Private	Pluggable (default: Raft)	Permissioned	~1,000+ TPS (configurable)	Yes (Chaincode in Go, Java, JS)	No native token	Supply chain, healthcare, enterprise apps	Channel-based privacy, modular architecture
Quorum	Consortium	Istanbul BFT / Raft	Permissioned	~200–2,000 TPS	Yes (Solidity, Ethereum compatible)	Native (Customizable)	Inter-bank settlement, enterprise apps	Enterprise-optimized Ethereum fork

Short Report:

Ethereum, Hyperledger Fabric, and Quorum are three top blockchain platforms with different architectures and features.

Ethereum is a public, open-source blockchain for which it is well-known for having a robust decentralized behavior, smart contract functionality through Solidity, and intrinsic token support (ETH). It has a Proof of Stake consensus in Ethereum 2.0, which has low energy consumption but still has a cap at ~30 transactions per second (TPS) on Layer 1. Its open nature and extensive developer base make it suitable for creating decentralized applications (DApps) that need wide accessibility and trustlessness.

Hyperledger Fabric is a permissioned, private blockchain intended for commercial deployment. It has support for pluggable consensus (e.g., Raft), high performance (~1,000+ TPS), and smart contract chaincode in multiple programming languages. It provides fine-grained privacy via private channels but not native token support. Due to its modularity, it is extremely well-suited for supply chain networks where data privacy between known partners is necessary.

Quorum, a permissioned Ethereum-based consortium blockchain, offers permissioned access, Solidity smart contract support, and extensible consensus (Istanbul BFT or Raft). It is designed for performance and privacy and thus well-suited for inter-bank financial use cases where speed, confidentiality, and trust among participants are paramount.

Ethereum thus is suited for DApps, Fabric for supply chains, and Quorum for financial consortiums.