Task 2

Blockchain Platform Comparison

Attribute	Ethereum	Hyperledger Fabric	R3 Corda
Blockchain Name	Ethereum	Hyperledger Fabric	R3 Corda
Type	Public	Private	Consortium
Consensus Mechanism Used	Proof of Stake (PoS)	Pluggable (e.g., Kafka, Raft)	Notary-based consensus
Permission Model	Open	Permissioned	Permissioned
Speed / Throughput	~15-30 TPS (Ethereum Mainnet)	Up to 3,500 TPS	170 TPS (approximate)
Smart Contract Support	Yes (Solidity)	Yes (Go, Java, Node.js)	Yes (Kotlin, Java)
Token Support	Yes (Native & ERC standards)	No native support	No native token support
Typical Use Case	Decentralized apps (DeFi, NFTs)	Enterprise supply chain, Identity	Financial agreements, Banking
Notable Technical Feature	Decentralized, EVM compatibility	Modular, supports channels	Legal prose integration, privacy

Short Report

The three blockchain platforms—Ethereum, Hyperledger Fabric, and R3 Corda—serve different needs due to their underlying architecture and consensus models.

Ethereum, a public blockchain, excels in open, decentralized applications with native token support and strong smart contract capability using Solidity. However, its throughput is relatively low and less suitable for high-speed enterprise applications.

Hyperledger Fabric offers a highly customizable and modular architecture for private blockchains. It supports pluggable consensus and high throughput, ideal for enterprise applications where known parties interact, like supply chain networks. Its channel feature allows for private data sharing among select participants.

R3 Corda, built for the financial industry, functions as a consortium blockchain with a unique notary-based consensus and high privacy. It integrates legal prose and allows selective data sharing, which is crucial for inter-bank applications.

For a **decentralized app**, Ethereum is the most suitable. For a **supply chain network**, Hyperledger Fabric stands out. And for an **inter-bank financial system**, R3 Corda’s privacy and legal agreement support make it the best fit.

Each platform's technical foundation shapes its optimal application area.