

Blockchain Assignment 2

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* Private Blockchain (Eg: R Corda in private mode)

Blockchain Name	Type	Consensus Mechanism	Permission Model	Speed / Throughput (Tx/s)
R Corda	Private	Notary-based	Permissioned	~110 TPS (depends on setup)
Ethereum	Public	Proof of Stake	Open	~30-50 TPS (ages!)
Hyperledger Fabric	Consortium	Pluggable (e.g. Raft, Kafka)	Permissioned	1000+ TPS
Polygon	Public	Proof of Stake	Open	~7000 TPS

Smart Contract Support	Token Support	Typical Use Case	Notable Technical Feature
Yes (JVM-based, Kotlin, Java)	No native token	Interbank settlements, trade finance	Privacy by design, point-to-point data
Yes (Solidity, Vyper)	Native (ETH)	DApps, DeFi, NFT platforms	Turing-complete Smart Contract
Yes (Go, Java, Node.js)	No native token	Supply chain, enterprise apps	Modular architecture, private channels
Yes (Solidity)	Native (MATIC)	Decentralized ORs, Layer 2 scaling	EVM-compatible

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* Private Blockchain: (egs R3 Corda is private mode).

Blockchain Name	Type	Consensus Mechanism	Permission Model	Speed / Throughput (TPS)
R3 Corda	Private	Notary-based	Permissioned	~170 TPS (depends on Setup)
Ethereum	Public	Proof of Stake	Open	~30-50 TPS (layer 1)
Hyperledger Fabric	Consortium	Pluggable (e.g. Raft, Kafka)	Permissioned	1000+ TPS
Polygon	Public	Proof of Stake	Open	~7000 TPS

Smart Contract Support	Token Support	Typical Use Case	Notable Technical Feature
Yes (EVM-based: Kotlin, Java)	No native token	Interbank statements, trade finance	Privacy by design, point-to-point data.
Yes (Solidity, Vyper)	Native (ETH)	DApps, DeFi, NFT platforms	Turing-Complete Smart Contracts.
Yes (Go, Java, Node.js)	No native token	Supply Chains, enterprise apps	Modular architecture, Private Channels
Yes (Solidity)	Native (MATIC)	Scalable DApps, low-cost transactions	Layer 2 scaling, EVM-compatible.

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★ Short Report:

→ R3 Corda, Ethereum, Hyperledger Fabric, and Polygon offer distinct technical capabilities tailored to different use cases. R3 Corda, designed for regulated financial environment focus on privacy and direct.

Ethereum is a public blockchain known for its robust Smart Contract Capabilities and decentralization, but suffers from relatively low throughput and high gas fees. It's suitable for truly decentralized application, particularly in the DeFi and NFT Space.

Hyperledger Fabric provides high throughput and modularity, making it excellent for enterprise application like Supply chains, where privacy and permissioning are essential. It doesn't support a native token but excels in Control and Configurability.

Polygon, an L2 Scaling Solution, enhances ethereum's throughput and cost efficiency, making it better suited for scalable & Scalable DApps.

Recommended Platform

- Decentralized app: Ethereum or Polygon
- Supply chain among known Partners:- Hyperledger Fabric fabric.

• Inter-bank financial application: R3 Corda.