1. **Public Blockchain:** (e.g., Ethereum, Bitcoin, Solana)

Blockchain Name	Type	Consensus Mechanism Used	Permission Model	Speed / Throughput (TPS)	Smart Contract Support	Token Support	Typical Use Case	Notable Technical Feature
Ethereum	Public	Proof of Stake (Ethereum 2.0)	Open	~30 TPS	Yes – Solidity	Yes – Native (ETH)	Decentralized Applications (dApps)	Smart contracts + large dev ecosystem
Hyperledger Fabric	Private	Pluggable (e.g., Raft)	Permissioned	~1,000+ TPS	Yes – Go, JavaScript	No native token	Enterprise Supply Chains	Modular architecture
R3 Corda	Consortium	Not a traditional blockchain	Permissioned	~170 TPS (varies)	Yes – Kotlin/Java	No native token	Inter-bank Transactions	Point-to-point data exchange

2. **Write a Short Report (150–200 words):**

   o **Compare and contrast the technical capabilities of each.**
   - Ethereum is a public blockchain that anyone can join. It's mainly used for building decentralized apps (dApps). It supports smart contracts using a language called Solidity, and it has its own token called ETH. But one drawback is its lower speed — around 30 transactions per second — which makes it less ideal for big business systems that need high performance.

   - Hyperledger Fabric is a private blockchain, which means only invited members can access it. It's really fast (over 1,000 transactions per second) and perfect for businesses that need control and privacy. It also allows smart contracts, and you can write them in languages like Go or JavaScript. However, it does not have a built-in token like Ethereum.

   - R3 Corda is used by groups of trusted organizations, like banks. It's not a typical blockchain — it works more like a secure messaging system between parties. It supports smart contracts written in Kotlin or Java and focuses on privacy and speed. It's a great fit for industries like finance where privacy and direct communication are important.

o **Which platform would you choose for:**

1. A Decentralized App (dApp):
- **Platform:** *Ethereum*
- **Why?** Ethereum is a public blockchain, meaning anyone can access and interact with it. It supports smart contracts using Solidity, and has a large developer community, tools, and documentation. Although its speed is lower (~30 TPS), it's perfect for dApps that prioritize decentralization, transparency, and wide accessibility over raw speed.

2. A Supply Chain Network Among Known Partners:
- **Platform:** *Hyperledger Fabric*
- **Why?** Fabric is a private, permissioned blockchain, which means only selected participants (like known supply chain partners) can access it. It supports modular consensus, high throughput (1,000+ TPS), and smart contracts in Go or JavaScript. It also provides data privacy between parties, which is essential in supply chains where sensitive business data is shared only with specific participants.

3. An Inter-Bank Financial Application:
- **Platform:** *R3 Corda*
- **Why?** Corda is designed for financial institutions. It's a consortium blockchain with a point-to-point communication model, meaning transactions are only visible to parties involved, ensuring privacy. It also supports smart contracts in Kotlin/Java, and allows regulatory oversight while keeping sensitive data secure. These features make it ideal for secure, auditable, and private inter-bank transfers.