Que: Choose one platform from each category

- Public Blockchain :- Ethereum
- Private Blockchain :- R3 Corda
- Consortium Blockchain :- R3 Corda

Ques :- Create a comparison table or markdown sheet with the following columns for each platform :

Public Blockchain

- Blockchain Name :- Ethereum
- Type (Public / Private / Consortium) :- Public
- Consensus Mechanism Used :- Proof of stake.
- Permission Model (Open / Permissioned) : Open (Anyone can read write and participate)
- Speed / Throughput (TPS) :- 15-30 TPS
- Smart Contract Support :- Yes
  Language :- Primarily Solidity (also support Vyper and other).
- Token Support (Native or not) :- Yes, Native
- Typical Use Case :- Decentralized Finance (DeFi)
  - Non-Fungible Tokens (NFTs)
  - DAOs (Decentralized Autonomous Organization

- Tokenized assets
- DApps (Decentralized Applications).

- Notable Technical feature :-
- Smart contracts with turing-complete EVM (Ethereum virtual machine).
- Wide developer ecosystem.
- Layer 2 scalability (Rollups)
- Account abstraction in development.
- Large ecosystem of standard (eg. ERC).

Private Blockchain

- Blockchain Name :- R3 Corda
- Type :- Private
- Consensus Mechanism Used :- Notary-based consensus
- Permission Model :- Permissioned
- Speed / Throughput :- High (but depends on network setup).
- Smart Contract Support (Y/N + Language) :- Yes
  Known as "CorDapps" (Corda Distributed Applications)
- Token Support (Native or not) :- Yes, but no native cryptocurrency.
- Typical Use Case :-
  - Banking & finance
  - Insurance
  - Trade Finance
  - Digital Identity
  - Supply chain for regulated assets.
  - Central Bank Digital Currencies (CBDC);
- Notable technical feature :-
  - Point to point messaging
  - Pluggable notary services
  - Legal prose binding
  - No global ledger
  - Integration-ready

Consortium Blockchain

- Blockchain Name :- R3 Corda
- Type :- Consortium
- Consensus Mechanism Used :- Not blockchain in tradional sense uses notaries for transaction validation.
- Permission Modal :- Permissioned
- Smart Contract Support :- Yes, (KOHin, Java)
- Speed :- High, especially in point-to-point flow.
- Token Support :- Yes, but no native crypto-currency.
- Typically Use Case :-
  - Banking & finance
  - Isurance
  - Trade finance
- Notable Technical Feature :-
- focus on privacy and Scalability.
- Peer-to-peer architecture (not every node sees every transaction).
- Regulator compliance features built-in.

Ethereum and R3 Corda

Ethereum is a public, decentralized blockchain platform designed primarily for executing smart contracts using the Ethereum Virtual Machine. It supports Turing-complete smart contracts written in Solidity, enabling developers to build decentralized applications (DApps). Ethereum uses a Proof of Stake (PoS) consensus mechanism, offering moderate throughput (15-30 TPS), through Layer 2 solutions boost Scalability. It's best suited for open networks, DeFi, NFTs, and DAO governance. All transactions are public and visible on the blockchain.

R3 Corda

R3 Corda, in constrast, is a private, permissioned DLT platform built for regulated industries like finance. It uses notary nodes for transaction finality instead of traditional blockchain consensus. Corda emphasizes privacy, as transactions ~~bin~~ are only visible to involved parties. Smart Contracts, called CorDapps, are written in Kotlin or Java and can be legally binding. Corda is highly scalable, supports point-to-point communication, and offers strong integration with enterprise System.

Ques:- Which platform would you choose for:

- A decentralized app
- A supply chain network among known patners
- An inter-bank financial application

Justify your choice based on technical points.

Ans:- ① A decentralized app :- Ethereum

technical point :-

- Public and open network
- Smart contract support
- Decentralization
- Token standard
- security

② Supply chain network :- Hyperledger fabric

Technical point :-

- Permissioned access
- Private data chanels
- Modular design
- chaincode (smart contracts)
- High throughput

③ ~~R3 Corda~~ Inter-Bank Financial Application:

R3 Corda

Technical points :-

- Privacy - first architecture
- Legal prose binding
- Notary services
- Enterprise integration
- Regulatory compliance