Problem Statement: Write a Short Report (150–200 words):
Compare and contrast the **technical capabilities** of each.

Technical Capabilities Comparison Report

Ethereum vs Hyperledger Fabric vs R3 Corda: Technical Analysis

The three blockchain platforms demonstrate distinct technical architectures tailored to their respective use cases. **Ethereum** operates as a global state machine with the Ethereum Virtual Machine (EVM) enabling Turing-complete smart contracts. Its Proof of Stake consensus provides security through economic incentives, but throughput remains limited at 15-20 TPS due to global state synchronization requirements.

Hyperledger Fabric offers superior performance with 3,000-20,000 TPS through its modular architecture and pluggable consensus mechanisms. Its channel-based privacy model allows selective data sharing, while chaincode containers provide isolated smart contract execution. The absence of native cryptocurrency eliminates mining overhead but requires alternative governance mechanisms.

R3 Corda takes a unique approach with notary-based consensus, processing only relevant transactions rather than maintaining global state. This design achieves moderate throughput (170-1,700 TPS) while ensuring privacy through point-to-point communications. Its legal identity integration and UTXO-like model make it particularly suitable for regulated industries.

Key Technical Differentiators: Ethereum prioritizes decentralization and global accessibility, Fabric emphasizes enterprise performance and modularity, while Corda focuses on privacy and regulatory compliance through selective consensus.