

# Implementation of a simple blockchain-based application relying on the Hyperledger Fabric framework

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## *ABSTRACT*

The blockchain paradigm has become very popular with the spread of Bitcoin cryptocurrency. The blockchain is the underlying technology which consists of a distributed and decentralized ledger where users could submit transactions in terms of money transfer or smart contract methods call. There are three kinds of the distributed ledger: public, private and permissioned. Public ledgers are the mainly used for cryptocurrencies, permissioned and private ledgers instead are defined for completely different use cases such as supply chain, system federation on a particular topic or feature, and could be used also inside a huge company for internal resource tracking.

Hyperledger Fabric is the reference implementation for the permissioned ledgers, under the umbrella of Linux foundation and mainly backed by IBM. Fabric provides a runtime for definition, deployment, and invocation of smart contracts, these contracts could be implemented in Golang or in Java programming language. It also provides support for private transactions between users and does not require any cryptocurrency as backing "reward" for smart contract method invocation.

The main goals of this work are:

- Study of Hyperledger Fabric architecture, deployment, and model
- Study of ledger runtime and smart contracts system and deployment
- Implementation of a Dapp for official document sharing between two (or more) companies