Mohammad H. Tabatabaei

Corda

Although, diversity of financial institutions drives competition and choice, the variety of technology platforms upon which they rely drives complexity and interoperability challenges. Blockchain technology defines a new shared platform for third parties to compete for delivering innovative new products and services. They will be assured that the shared data will be consistent between them by shared ledger vision. Corda is a distributed ledger platform for recording and processing financial agreements. It covers the shortcomings of the traditional distributed databases and existing blockchain systems in terms of supporting untrusted parties and restricted data sharing respectively.

The Corda provides a framework for running smart contracts. It records and manages the evolution of shared data between parties and does not need a central control for keeping workflow between firms. It also restricting access to the data within an agreement to only those who are privileged to it. Then, the global ledger of Corda is not globally visible. State object of Corda is a digital document which records the existence, content and current state of an agreement between parties, and it is just shared between who have a legitimate reason to see it. The ledger of Corda is defined as a set of immutable state objects. In order to update states, Corda uses transactions, which consumes existing state objects and produce new state objects.

Both Corda and Bitcoin have immutable states, transactions with multiple input and outputs, and pure functional contracts. However, we can have arbitrary typed data in Corda states. Furthermore, transactions in Corda invoke not only input contracts but also the contracts of the outputs. Finally, in contrast to Bitcoin, Corda contracts are Turing-complete and can be written in any ordinary programming language that targets the JVM. It is also considerable that Corda does not use proof of work and mining in its mechanism.

Corda runs its code inside a virtual machine and its code can contain complex logic like Ethereum. Corda and Ethereum, both provide modelling of different kinds of financial contracts. In contrast to Ethereum, Corda considers non-monetary applications out of scope. In addition, the smart contract implementation in Corda refers to a set of functions, which only one of them is a part of keeping the system synchronized. Finally, as we do not have any notion of a message in Corda, because its contracts do not have any kind of mutable storage.