HL Iroha and HL Cactus Integration

Project Title
We will be enabling interoperability between HL Cactus and HL Iroha

Status
ACCEPTING APPLICATIONS

Difficulty
MEDIUM

Description
Hyperledger Cactus is a blockchain decentralised integration tool designed to allow users to securely integrate different blockchains started by companies Fujitsu and Accenture. Cactus has pluggable architecture which makes easy to integrate various blockchain by creating plugin, currently plugins for Fabric, Besu, Quorum are implemented. Cactus allows to transfer not only assets but also data between multiple blockchains. On the other hand Iroha (version 1.x) is great with asset management, and has functionality to store data, which makes those two projects a perfect fit!

With this internship program we will not only allow the interoperability between different blockchains but also create a system of Iroha networks that will also demonstrate the integration in examples easy to run by everybody.

Additional Information
Hyperledger Cactus (whitepaper, whitepaper of integration, chat, already implemented plugins)
Hyperledger Iroha (documentation, chat, wiki)
Similar internship's project: Iroha and Quilt Integration
Iroha javascript client library
Iroha-python client library

Learning Objectives
The mentee will be able to learn:
- ways of integrating different projects from architectural point of view,
- architecture of Iroha (1.x) and Cactus,
- work in true spirit of open-source, communicating with both Iroha and Cactus community, joining calls and using other community tools,
- writing documentation, so anyone in the community could use the results of their work,
- following rules and standards of open-source projects created by hyperledger,

Expected Outcome
1. Documented, ready-to-use integration of Iroha and Cactus,
2. Documented example of integration between multiple (two and more) Iroha's networks with Cactus,
3. Documented example of integration between Fabric and Iroha (Fabric plugin for Cactus is already implemented) integration,

Relation to Hyperledger
This mentorship program will enable interoperability between Hyperledger Cactus and Hyperledger Iroha projects.

Education Level
Preferred undergraduate.

Skills
- Reading english documentation,
- Programming language of one of libraries supported by Iroha (e.g. Python, Java, NodeJS),
- Programming language to implements Cactus plugin. It is easiest to code in NodeJS. It is also possible in other technologies (working implementations are in Rust, Kotlin) but it is necessarily to create also web-server, which can be generated with openapi-generator.
Future plans

Create documentation and offer the community a new way of creating networks. Opened for cooperation after successful internship.

Preferred Hours and Length of Internship

No preference (just do your job good before 15th August according to project plan and report to mentors every week progress and report progress during bi-weekly Iroha Community meeting and bi-weekly Cactus Community meetings).

Mentor(s) Names and Contact Info

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