Hyperledger Mentorship Project Presentation

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HL Burrow and HL Iroha extend existing Solidity VM integration

› **Introduction**

- **Name**: Ayush Jalan

- **Location:** Gorakhpur, India

- **University:** Indian Institute of Technology Roorkee, India

- **Mentor:** Grzegorz Bazior

- **Hyperledger Project**: Hyperledger Iroha and Hyperledger Burrow

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› **Project Description**:

- ○ Hyperledger Iroha - a permissioned blockchain
- ○ Hyperledger Burrow - permissioned Ethereum smart-contract blockchain node
- ○ The aim of the project is to extend the HL Burrow and HL Iroha integration, which will create an environment for smart contracts using the Ethereum Virtual Machine

HYPERLEDGER IROHA

HYPERLEDGER BURROW

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› **Project Objectives**:

- To learn architecture of HL Iroha
- To integrate all Iroha commands and queries in Burrow integration
- To implement Burrow EVM APIs to use Iroha Blockchain state
- To gain experience working in an open-source community

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› **Project Deliverables:**

- ○ Update Iroha-Burrow integration code

- ○ Sample smart contracts(in Solidity) and python scripts

- ○ Documentation of the project

- ○ Unit testing for the commands and queries

- ○ A Pull Request to be merged with the Iroha repository
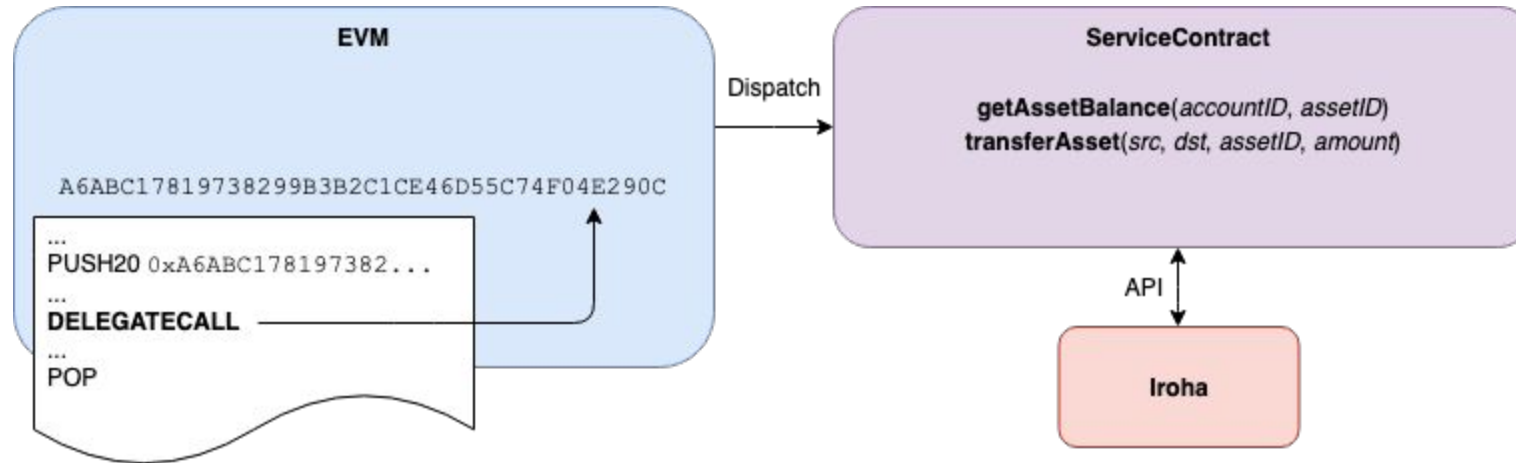- ○ Present the work to Iroha and Hyperledger community

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› **Project Execution & Accomplishments**:

- ○ All of the project objectives and deliverables were accomplished.
- ○ Few commands are left to be integrated
- ○ Working with the best developers was a really great experience.
- ○ Understanding the codebases was most challenging. But thankfully, my mentor helped me a lot in this.

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› **Working:**

Source: https://iroha.readthedocs.io/en/main/_images/natives.svg

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› **Recommendations for future work:**

- ○ Few commands have not been integrated, so it could be worked upon
- ○ Currently, there are two in-built tests for Call Engine and Engine Receipts, more in-built tests can be made for the integration.
- ○ This integration will help Iroha team's vision to build a visual programming language over the integrated virtual machine.
- ○ Integration of multi-signature transactions

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› **Project Output or Results**:

- ○ Project Link: https://wiki.hyperledger.org/display/INTERN/HL+Burrow+and+HL+Iroha+extend+existing+Solidity+VM+integration
- ○ Github Link: https://github.com/Ayush-Jalan/iroha
- ○ A Pull Request has also been merged with https://github.com/hyperledger/iroha/tree/support/1.2.x and the integration will aslo be available in next Iroha 1.3.0 release
- ○ Complete documentation of the project can be found at https://iroha.readthedocs.io/en/main/integrations/burrow.html

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› **Insights Gained:**

   ○ Working together in an open-source community
   ○ Writing code with better readability
   ○ Not to be hesitant in trying new things
   ○ Have more belief in myself to accomplish things

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› **Acknowledgement** :

- ○ Grzegorz Bazior, my mentor
- ○ Sara Garifullina, Iroha Team
- ○ All the members of the Iroha Team
- ○ Hyperledger community
- ○ My family and friends

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THANK YOU!

Questions?