Hyperledger Mentorship Project Presentation

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Reworking HL Iroha Consensus API

› **Introduction**

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› **University:** University of Cyprus

› **Mentor(s):** Andrei Lebedev, Mikhail Boldyrev

› **Hyperledger Project**: Hyperledger Iroha

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› **Project Description**:

› Implementation and Integration of a pluggable consensus mechanism for HL Iroha.

› Increased modularity.

› Opportunity to use different consensus algorithms.

› Currently HL Sawtooth uses a dynamic consensus.

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› **Project Objectives**:

  › Obj 1: Get familiar with: Consensus Algorithms, Iroha Project, Sawtooth consensus API.

  › Obj 2: Implement an Interface for Communication with Sawtooth consensus engine.

  › Obj 3: Implement Network Interface between Iroha consensus proxies.

  › Obj 4: Integrate the conensus proxy to the rest of the Iroha project.

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› **Project Deliverables:**

› Deliverable 1: The Interface for communication with Sawtooth consensus engine.

› Deliverable 2: The Interface for communication with other peers.

› Deliverable 3: The Integrated implemented consensus component to the Iroha project

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› **Project Execution & Accomplishments**:

› Familiarity with HL Iroha and HL Sawtooth.

› Implementation of an Interface for communication with Consensus Engine.

› Implementation for communication between Consensus proxies.

› A Blockchain simulator using HL Sawtooth Consensus Engines was deployed.

› Integration of the consensus proxy into the HL project.

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› **Recommendations for future work:**

› Add support for lottery-based consensus algorithms where a fork can happen.

› Iroha pipeline and block restructure.

› Scripts were used to test the proxy, and automated C++ tests would be better.

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› **Project Output or Results**:

› A C++ API for the Sawtooth Consensus Engine with the use of ZMQ library.

› A blockchain simulator with the use of Sawtooth Consensus Engine component.

› A consensus component (that uses Sawtooth Consensus Engine) was implemented for the Iroha project.

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› **Insights Gained**:
› Open source can be daunting at the start.

› Start small.

› People in open source don't bite.

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THANK YOU!