

Ideas for Summer Internship 2021

Possible Projects

Here are some of the potential internship project ideas for Iroha2.

Blockly Like Interface for ISIs.

Description

Implement a visual blueprint frontend similar to [Blockly](#), [Scratch](#) or [Unreal Engine Blueprints](#) for Iroha Special Instructions smart contract language.

Requirements

1. UI/UX design familiarity
2. Frontend development (in the language of your choice) skills

Language Syntax design for ISIs

Description

Iroha Instructions and Expressions represent a syntactical tree. It is not very convenient for users to compose this tree. Therefore it is proposed to design a programming language syntax that will be parsed into this tree. As part of this project, it will be needed to design a syntax, write a parser and optionally add syntax support into VS Code (with language server).

Requirements

1. Knowledge of compiler construction theory (Lexical and Syntactical analysis primarily)
2. Passion for language design

Iroha2 Privacy Focus Research

Description

Research zk-snarks, ring signatures and their usage in popular privacy oriented blockchains and protocols (ZCash, CryptoNote). Design an MVP implementation for confidential transactions for Iroha2.

Requirements

1. Familiarity with blockchains
2. Interest in cryptography
3. Willing to research scientific papers and apply them to real world use case

Quantum Resistant Cryptography

Description

Research the state of Quantum resistant cryptography and implement an MVP of its support in Iroha2.

Requirements

1. Interest in cryptography
2. Willing to research scientific papers and apply them to real world use case

Sharding Research

Description

Research sharding and design consensus improvements for Iroha2 to support sharding. Test the scalability and performance of this solution.

Requirements

1. Familiarity with blockchains
2. Interest in distributed computing and consensus design

Topic

Description

Requirements

Useful Links

[Hyperledger Mentorship Program#2021ProgramTimeline*](#)

[Project Proposal](#)