CS+ Decentralized Finance: Blockchain and Cryptocurrency on the Internet Computer

Meeting Minutes

6/17/2021 10:00 – 11:00 AM EST

Present:

Prof. Luyao Zhang - Lead

Prof. Kartik Nayak – Co-Lead

Prof. Fan Zhang – Co-Lead

Prof. Yulin Liu – Co-Lead

Derrick Adam – Graduate Mentor

Dylan Paul – Full-Time Researcher

Urjit Banerjee – Full-Time Researcher

Oum Banerjee – Full-Time Researcher

Malika Rawal – Full-Time Researcher

Tianyu Wu – Research Support

Elliot Ha – Research Support

Saad Lahrichi – Research Support

Ray Zhu – Research Support

Project Expectations from Prof. Yulin Liu, Prof. Kartik Nayak (Computer Science), and Prof. Fan Zhang (Computer Science):

Prof. Yulin Liu (Economics):

Chain Key Technology and orthogonal persistence - Each team pick one and do research on this topic. Present it next week and be prepared to answer questions from the research side. From the engineering side, we don't have ICP cycle tokens. Since we are building applications on the test net, we have the user and product canister. Come up with a name for the product. Create a third canister called treasury that could mint ICP tokens and cycle tokens. There should be the treasury canister and there should be a mint and transfer function. If the treasury canister

mints 1000 ICP tokens and transfers the 1000 ICP tokens to the user, (in the future there may be many users, so users need to be pre-loaded with some tokens), then the user can use the product canister.

In summary, we already have a user and product canister and mint, transfer, and burn functions. For next week, we want a third canister call treasury which has the mint and transfer functions. We also want one more function, called **balance of**. We can check what is the balance of treasury after minting the 1000 ICP tokens. If I check the balance, it should show 1000 ICP. If I send 1000 ICP to users, the balance of treasury should show 0. If I check the balance of the user, it should show 1000 ICP tokens. This is the backend.

On the frontend, there is a default frontend. There is no need for decoration. Just provide the primitive frontend where users can interact with the backend by clicking treasury, I want to mint 1000 ICP tokens. I want to transfer these 1000 ICP tokens to the user and the user could transfer the tokens to the product canister and an individual could check the balance of the user whether he/she has received the atokens or not.

Prof. Kartik Nayak (Computer Science):

Not necessarily for next week, but study storage on Ethereum versus DFINITY. Do a study of what it would take to do the same thing on Ethereum and what the cost would be. For example, given a set of 10 frequently used applications on Ethereum, how would you want to implement them on DFINITY, differently and similarly?

Prof. Fan Zhang (Computer Science):

. Research solutions to attacks on the reverse gas model.

Prof. Luyao Zhang (Economics):

Development side:

Further polish software development plan with the additional canister.

Look at DeFi projects currently deployed on the Internet Computer provided on Google Doc

Research side:

Further polish research questions and come up with a methodology. For example, you could use different gas fee models. 1) user not pay at all or 2) user pays a lot

Consider 1) how inclusive of the value of the canister would be? 2) Elasticity or sensitivity to the user side to the transaction 3) Sensitivity of the developer

If switching to complete user payment or complete enterprise payment, how would the influence on cyber security change? And how would the influence on inclusiveness change? That can be a methodology.

Administration:

Before Thursday's meeting, students must pair up and meet to do peer evaluation and to respond to each other's evaluation. Then you present in the general meeting how your peers helped you develop a better product.

From now, all weekly milestones will be due Tuesday 11 PM EST for the students