

lin

Reporting Period

Week : 12/03/2022 - 12/09/2022

High level project status:

Accomplished this week	<ul style="list-style-type: none">- Code repository cleanup for final delivery- Readme documentation- Technical documentation
Plan for the next week	<ul style="list-style-type: none">- Final deliverables submission- CMU canvas requirements

Individual status for the week:

Keshava Srinivas

What was planned ?	<ul style="list-style-type: none">- Git Repo cleanup and documentation.- Work on automation (stretch goal).
What was accomplished ?	<ul style="list-style-type: none">- Code repository cleanup- Readme documentation- Poster showcase presentation
Time spent (Hours)	24

Nithin Ram

What was planned ?	<ul style="list-style-type: none">- Clean up Github repository- Hand over codebase
What was accomplished ?	<ul style="list-style-type: none">- Code organization and cleanup- Final deliverables- Poster presentation
Time spent (Hours)	24

Noura Alfayez

What was planned ?	<ul style="list-style-type: none"> - Finalize the poster - Handover project to sponsor
What was accomplished ?	<ul style="list-style-type: none"> - Finalized project deliverables - Presented at the poster showcase
Time spent (Hours)	12

Prerit Pathak

What was planned ?	<ul style="list-style-type: none"> - Help in creating the final poster - Finalize the github repository
What was accomplished ?	<ul style="list-style-type: none"> - Presented the final poster - Cleaned up the repository and added READMEs
Time spent (Hours)	10

Vaanya Gupta

What was planned ?	<ul style="list-style-type: none"> - Finalize the documentation and the repository - Work on the pending assignments
What was accomplished ?	<ul style="list-style-type: none"> - Code cleanup and documentation - Poster presentation at showcase event
Time spent (Hours)	20

Pramod Illuri

What was planned ?	<ul style="list-style-type: none"> - Prepare for project closure - Followup and delegate tasks for final submissions from cmu and the sponsor. - Feedbacks, reflections, and retrospective activities in the team
What was accomplished ?	<ul style="list-style-type: none"> - Closure activities in progress - will be ready by final submission. - Cleanup and documentation in progress - Team feedback activity completed

Time spent (Hours)	12
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Blockers

- None

Plan for the next week

Keshava Srinivas	- CMU Canvas submissions
Nithin Ram	- CMU Canvas submissions
Noura Alfayez	- CMU Canvas submissions
Prerit Pathak	- CMU Canvas submissions
Vaanya Gupta	- CMU Canvas submissions
Pramod Illuri	<ul style="list-style-type: none"> - Project closure - Final deliverables - Reflection essay (CMU deliverable) - Follow up any pending action items promised to be delivered

Week : 11/26/2022 - 12/02/2022

High level project status:

Accomplished this week	<ul style="list-style-type: none">- Local integrations completed addressing pending issues- Prototype demonstrated to sponsor internally- Technical documentation presented for review
Plan for the next week	<ul style="list-style-type: none">- Automation scripts for easy deployment of the setup- Address review comments and come up with a final documentation- Prepare for final deliverables for sponsor and cmu

Individual status for the week:

Keshava Srinivas

What was planned ?	<ul style="list-style-type: none">- Git Repo cleanup and documentation.- Work on automation (stretch goal).
What was accomplished ?	<ul style="list-style-type: none">- Finished integration of protocol into chaincode and worked on presentation- Final Presentation in class
Time spent (Hours)	<ul style="list-style-type: none">- 24

Nithin Ram

What was planned ?	<ul style="list-style-type: none">- Clean up the integration for final demo- Work on automation scripts for easy deployment (Best effort)
What was accomplished ?	<ul style="list-style-type: none">- Finished the integration and prepared final demo- Presented in class about the project
Time spent (Hours)	23

Noura Alfayez

What was planned ?	<ul style="list-style-type: none">- Contribute to final deliverables (documentation, git
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	repo, presentation)
What was accomplished ?	<ul style="list-style-type: none"> - finalized the technical documentation - Updated the poster draft 2 - Delivered the final presentation
Time spent (Hours)	24

Prerit Pathak

What was planned ?	<ul style="list-style-type: none"> - Code cleanup, work on the README - Review and help with presentation slides & poster
What was accomplished ?	<ul style="list-style-type: none"> - Worked on the code cleanup and README - Helped with the poster and the presentation by providing inputs, making changes - Fixed an API issue with our smart contract
Time spent (Hours)	24

Vaanya Gupta

What was planned ?	<ul style="list-style-type: none"> - Work on the final presentation slides - Work on the poster draft #2 - Work on cleaning up the code and integration
What was accomplished ?	<ul style="list-style-type: none"> - Completed final presentation slides - Completed poster draft #2 - Worked on cleaning up the code and integration
Time spent (Hours)	23

Pramod Illuri

What was planned ?	<ul style="list-style-type: none"> - Planning the final deliverables - Preparation for internal and final prototype demonstration - Delegate tasks for cmu and non-cmu submissions
What was accomplished ?	<ul style="list-style-type: none"> - Final in-class presentation preparations

	<ul style="list-style-type: none"> - Internal demo to sponsor - Done - Delegated tasks for final deliverables
Time spent (Hours)	12

Blockers

- None

Plan for the next week

Keshava Srinivas	<ul style="list-style-type: none"> - Git Repo cleanup and documentation. - Work on automation (stretch goal).
Nithin Ram	<ul style="list-style-type: none"> - Clean up github repository - Hand over codebase
Noura Alfayez	<ul style="list-style-type: none"> - Finalize the poster - Handover project to sponsor
Prerit Pathak	<ul style="list-style-type: none"> - Finalize the github repository after cleanup and README - Wind up the project, and try to complete the automation scripts (stretch goal)
Vaanya Gupta	<ul style="list-style-type: none"> - Finalize the documentation and the repository - Work on the pending assignments
Pramod Illuri	<ul style="list-style-type: none"> - Prepare for project closure - Followup and delegate tasks for final submissions from cmu and the sponsor. - Feedbacks, reflections, and retrospective activities in the team

Week : 11/19/2022 - 11/25//2022

High level project status:

Accomplished this week	<ul style="list-style-type: none">- In Progress : Integration work for final prototype- Technical documentation draft done- CMU deliverable : Poster draft submission done
Plan for the next week	<ul style="list-style-type: none">- Internal demo to sponsor- Complete pending action items in final prototype- Complete Technical documentation- CMU submissions

Individual status for the week:

Keshava Srinivas

What was planned ?	<ul style="list-style-type: none">- Overcome the socket programming blocker- Finish integration of keymaker and keychecker into chaincode
What was accomplished ?	<ul style="list-style-type: none">- Successfully overcame the blocker and implemented socket programming for shard distribution- Integrated the entire protocol onto the chaincode and tested the complete flow of the PoC end-to-end.
Time spent (Hours)	<ul style="list-style-type: none">- 24

Nithin Ram

What was planned ?	<ul style="list-style-type: none">- Debug and solve pending issues in protocol- Work on integrating individual components together for internal demo
What was accomplished ?	<ul style="list-style-type: none">- Fixed all the issues in protocol implementation- Completed local integration setup for internal demo
Time spent (Hours)	24

Noura Alfayez

What was planned ?	<ul style="list-style-type: none">- create decentralized diagram- Finalize the technical report
What was accomplished ?	<ul style="list-style-type: none">- completed a decentralized system diagram- Updated documentation to reflect system changes
Time spent (Hours)	12

Prerit Pathak

What was planned ?	<ul style="list-style-type: none">- Write APIs for certain smart contract functions- Implement the local version of the project on AWS ec2
What was accomplished ?	<ul style="list-style-type: none">- Completed development and testing of APIs for smart contracts- Debugged and fixed go and fabric related challenges with respect to EC2 implementation
Time spent (Hours)	24

Vaanya Gupta

What was planned ?	<ul style="list-style-type: none">- Work on integration and cleaning up- Final presentation- Poster draft #2
What was accomplished ?	<ul style="list-style-type: none">- Completed the final presentation and poster draft #2- Integration and cleaning up completed
Time spent (Hours)	24

Pramod Illuri

What was planned ?	<ul style="list-style-type: none">- Team discussions to get prototype ready for internal demo- Finalize technical documentation and delegate the work- Project management activities
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What was accomplished ?	<ul style="list-style-type: none"> - CMU canvas submissions - Technical documentation initial draft done - Project management activities
Time spent (Hours)	12

Blockers

- None

Plan for the next week

Keshava Srinivas	<ul style="list-style-type: none"> - Git Repo cleanup and documentation. - Work on automation (stretch goal).
Nithin Ram	<ul style="list-style-type: none"> - Clean up the integration for final demo - Work on automation scripts for easy deployment (Best effort)
Noura Alfayez	<ul style="list-style-type: none"> - Contribute to final deliverables (documentation, git repo, presentation)
Prerit Pathak	<ul style="list-style-type: none"> - Git repository cleanup and documentation - Automation of smart contracts with cron job scripts
Vaanya Gupta	<ul style="list-style-type: none"> - Work on finalizing the git repo and documentation - Prepare for the final presentation
Pramod Illuri	<ul style="list-style-type: none"> - Planning the final deliverables - Preparation for internal and final prototype demonstration - Delegate tasks for cmu and non-cmu submission

Week : 11/12/2022 - 11/18/2022

High level project status:

Accomplished this week	<ul style="list-style-type: none">- Partially integrated keymaker protocol with chaincode- All smart contracts except verification are completed
Plan for the next week	<ul style="list-style-type: none">- Debug issue with socket programming- End to end integration of verification logic- HLD Document draft

Individual status for the week:

Keshava Srinivas

What was planned ?	<ul style="list-style-type: none">- Work on overcoming the blocker in order to complete the integration of keymaker protocol into the chaincode implementation
What was accomplished ?	<ul style="list-style-type: none">- Overcame the blocker- Partially integrated the the keymaker protocol into the chaincode - provisioning, sharding, encryption
Time spent (Hours)	24

Nithin Ram

What was planned ?	<ul style="list-style-type: none">- Complete integrating keymaker protocol on chaincode
What was accomplished ?	<ul style="list-style-type: none">- Partially integrated keymaker protocol on chaincode- Added functionality to provision ID to a peer- Faced issues sending shards through sockets
Time spent (Hours)	26

Noura Alfayez

What was planned ?	<ul style="list-style-type: none">- complete the technical documentation and checklists
What was accomplished ?	<ul style="list-style-type: none">- updated technical documentation and checklists- Tested blockchain locally
Time spent (Hours)	24

Prerit Pathak

What was planned ?	<ul style="list-style-type: none">- completed the integration of smart contracts to the blockchain- Created api's to call the smart contract
What was accomplished ?	<ul style="list-style-type: none">- api's created and tested for the smart contracts- created an application to be the interface between the user and the blockchain
Time spent (Hours)	25

Vaanya Gupta

What was planned ?	<ul style="list-style-type: none">- Integration of the blockchain and the smart contracts- Solve the blockers- Poster draft #1
What was accomplished ?	<ul style="list-style-type: none">- Blockers were resolved and integration was successful- Poster draft done
Time spent (Hours)	24

Pramod Illuri

What was planned ?	Project management action items Drive Documentation activities
What was accomplished ?	<ul style="list-style-type: none">- Documentation of initial drafts completed- Facilitated team collaboration and discussions
Time spent (Hours)	12

Blockers

- Logic for sending shards through socket runs locally, but fails to run when receiver is a different peer

Plan for the next week

Keshava Srinivas	<ul style="list-style-type: none">- Overcome the socket programming blocker- Finish integration of keymaker and keychecker into chaincode
Nithin Ram	<ul style="list-style-type: none">- Get over the current blocker- Work on writing smart contract for verification
Noura Alfayez	<ul style="list-style-type: none">- create decentralized diagram- Finalize the technical report
Prerit Pathak	<ul style="list-style-type: none">- improve the smart contract- Clean up the code
Vaanya Gupta	<ul style="list-style-type: none">- Clean up the blockchain code and integration- Poster draft #2
Pramod Illuri	<ul style="list-style-type: none">- Project management activities- Start getting deliverables together for final submissions

Week : 11/05/2022 - 11/11/2022

High level project status:

Accomplished this week	<ul style="list-style-type: none">- Deployed local hyperledger fabric with sample chaincode- Worked on integrating keymaker protocol implementation with chaincode- In progress : debugging issues while integration
Plan for the next week	<ul style="list-style-type: none">- Complete integration pieces and fix issues of deploying chain code on the network- MVP : Deliver basic functional prototype of the system end to end

Individual status for the week:

Keshava Srinivas

What was planned ?	<ul style="list-style-type: none">- Understand chaincode functionality- Finish integrating keymaker protocol into chaincode
What was accomplished ?	<ul style="list-style-type: none">- Understood the flow and functionality of chaincode implementation- Implemented sample chaincode on the locally deployed Hyperledger Fabric Network- Worked on the Keymaker protocol chaincode
Time spent (Hours)	<ul style="list-style-type: none">- 24

Nithin Ram

What was planned ?	<ul style="list-style-type: none">- Work on distribution of shards through chaincode- Complete integration of protocol with chaincode
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What was accomplished ?	<ul style="list-style-type: none"> - Deployed on-prem hyperledger fabric with sample chaincode - Worked on keymaker protocol chaincode
Time spent (Hours)	24

Noura Alfayez

What was planned ?	<ul style="list-style-type: none"> - Work on HLD documentation
What was accomplished ?	<p>completed draft of HLD documentation and checklist</p> <p>Implemented blockchain network locally to debug issues</p>
Time spent (Hours)	24

Prerit Pathak

What was planned ?	<ul style="list-style-type: none"> - Deploy fabric network using docker images - Integrate smart contracts
What was accomplished ?	<ul style="list-style-type: none"> - Fabric network was setup using 5 nodes and 5 couchdb instances - Smart contract integrated (sample)
Time spent (Hours)	-25

Vaanya Gupta

What was planned ?	<ul style="list-style-type: none"> - Work on network deployment - Work on integration
What was accomplished ?	<ul style="list-style-type: none"> - Network was setup - Integration of smart contract
Time spent (Hours)	24

Pramod Illuri

What was planned ?	<ul style="list-style-type: none"> - Project management and facilitation activities - Revised SOW - Participating in technical discussions to stay in context
What was accomplished ?	<ul style="list-style-type: none"> - Project management activities - SOW as-built submission - Team discussions
Time spent (Hours)	12

Blockers

- Chaincode containing keymaker protocol function runs, but produces no output or errors
- Debugging is an issue since no logs are being generated

Plan for the next week

Keshava Srinivas	<ul style="list-style-type: none"> - Work on overcoming the blocker in order to complete the integration of keymaker protocol into the chaincode implementation
Nithin Ram	<ul style="list-style-type: none"> - Complete integrating keymaker protocol on chaincode
Noura Alfayez	<ul style="list-style-type: none"> - Tackling chaincode output errors - Improve final technical report submission
Prerit Pathak	<ul style="list-style-type: none"> - Integrate keymaker with the setup network
Vaanya Gupta	<ul style="list-style-type: none"> - Integrate the network and the smart contracts - Work on poster and final architecture
Pramod Illuri	<ul style="list-style-type: none"> - Plan for final deliverable documentation - Technical and Non-technical - Project management and facilitation activities

Week : 10/29/2022 - 11/04/2022

High level project status:

Accomplished this week	<ul style="list-style-type: none">- Enhanced local implementation of key maker protocol- Started with shard encryption and API integration- Resolved a technical blocker with aws managed block chain by creating a hyperledger fabric network locally.- Created initial draft of high level design document
Plan for the next week	<ul style="list-style-type: none">- Chain code implementation- API integrations- Creating a basic working prototype integrating individual pieces together

Individual status for the week:

Keshava Srinivas

What was planned ?	<ul style="list-style-type: none">- Setup blockchain with resources as per what was planned in the system diagram- Finalize the keymaker protocol with necessary changes- Deploy the keymaker protocol as chaincode on the blockchain network
What was accomplished ?	<ul style="list-style-type: none">- Blockchain was setup according to our use-case, i.e, with 1 member/organization and 5 peer nodes- Verified the communication between the peer nodes to ensure shards can be transferred between the nodes- Started working on integrating the keymaker protocol onto the chaincode
Time spent (Hours)	<ul style="list-style-type: none">- 24

Nithin Ram

What was planned ?	<ul style="list-style-type: none">- Implement Lagrange's equation in Go- Deploy protocol as API endpoint
What was accomplished ?	<ul style="list-style-type: none">- Implemented Lagrange equation in Go- Completed protocol implementation with NaCl encryption- Started working on integration of protocol code and blockchain
Time spent (Hours)	22

Noura Alfayez

What was planned ?	<ul style="list-style-type: none">- Complete first draft of technical documentation- Setup the blockchain network
What was accomplished ?	<ul style="list-style-type: none">- completed first draft of technical documentation <p>Note: traveling attending a conference for the week</p>
Time spent (Hours)	6

Prerit Pathak

What was planned ?	<ul style="list-style-type: none">- Get the blockchain network setup- Installation of chaincode
What was accomplished ?	<ul style="list-style-type: none">- Faced and fixed blockers related to network setup- Setup docker containers for the fabric network- Started working on chaincode
Time spent (Hours)	24

Vaanya Gupta

What was planned ?	<ul style="list-style-type: none">- Finish the setup of blockchain- Chaincode installation done
What was accomplished ?	<ul style="list-style-type: none">- Tried different approaches of setting up the blockchain

	when there was a blocker <ul style="list-style-type: none"> - Approached different people with knowledge regarding hyperledger fabric regarding an issue we were facing - Started working on chaincode
Time spent (Hours)	24

Pramod Illuri

What was planned ?	<ul style="list-style-type: none"> - Facilitate team in implementation if required - Project management and facilitating team - Reports
What was accomplished ?	<ul style="list-style-type: none"> - Project management facilitation activities - Reports - Plan for documentations for the final submission
Time spent (Hours)	12

Blockers

- For now, there are no blockers identified.

Plan for the next week

Keshava Srinivas	<ul style="list-style-type: none"> - Understand chaincode functionality - Finish integrating keymaker protocol into chaincode
Nithin Ram	<ul style="list-style-type: none"> - Work on distribution of shards through chaincode - Complete integration of protocol with chaincode
Noura Alfayez	<ul style="list-style-type: none"> - Work on HLD documentation
Prerit Pathak	<ul style="list-style-type: none"> - Deploy chaincode on the fabric network
Vaanya Gupta	<ul style="list-style-type: none"> - Integration of chaincode and the blockchain - Finish deploying chaincode
Pramod Illuri	<ul style="list-style-type: none"> - Review technical documentations (HLD and SOW - Revised submission) - Project management and facilitation activities

Week : 10/22/2022 - 10/28/2022

High level project status:

Accomplished this week	<ul style="list-style-type: none">- Participated in CyLab Partners Conference with a poster- Implemented key maker protocol locally- Implemented Sample Blockchain Network
Plan for the next week	<ul style="list-style-type: none">- Optimize protocol implementation and convert to Go Lang- Setup blockchain network- Work towards producing a working prototype of MVP (As planned for milestone - 2)- High level design document

Individual status for the week:

Keshava Srinivas

What was planned ?	<ul style="list-style-type: none">- Work on setting up and deploying the hyperledger blockchain architecture on the cloud- Start working on getting the protocol implemented on the blockchain.
What was accomplished ?	<ul style="list-style-type: none">- Worked with the team on creating and deploying a blockchain network with 5 peer nodes- Worked on improving the keymaker protocol implementation- Researched more into how chaincode is deployed in hyperledger fabric network
Time spent (Hours)	<ul style="list-style-type: none">- 24 hrs

Nithin Ram

What was planned ?	<ul style="list-style-type: none">- Complete local implementation of keymaker protocol- Optimize code for protocol- Learn hyperledger fabric with resources and implement on AWS
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What was accomplished ?	<ul style="list-style-type: none"> - Went through github repo to setup blockchain network on AWS - Went through sample chaincode - Completed local implementation of keymaker protocol in Go - Came up with a different approach for verification to optimize protocol
Time spent (Hours)	22

Noura Alfayez

What was planned ?	<ul style="list-style-type: none"> - Continue to work on block chain setup - Write High level design document covering research and diagrams explanations
What was accomplished ?	<ul style="list-style-type: none"> - Represented team at Cylab conference - Understood blockchain setup of sample network - Engaged with team on protocol implementation - Started drafting technical documentation
Time spent (Hours)	24

Prerit Pathak

What was planned ?	<ul style="list-style-type: none"> - Setup a sample hyperledger network on AWS - Analyse the chaincode - Wind up protocol development - Deliver the MinimumViable Product
What was accomplished ?	<ul style="list-style-type: none"> - successfully setup the sample network - Downloaded and analyzed sample chaincode - Completed protocol work with team members
Time spent (Hours)	20

Vaanya Gupta

What was planned ?	<ul style="list-style-type: none"> - Work on setting up a asample hyperledger fabric network on aws - Analyze the chaincode
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	<ul style="list-style-type: none"> - Understand how the protocol has been set up - Work towards delivering the Deliver the MinimumViable Product
What was accomplished ?	<ul style="list-style-type: none"> - Setup of hyperledger fabric on AWS doen successfully - Analysis of chaincode - Understood the protocol
Time spent (Hours)	22

Pramod Illuri

What was planned ?	<ul style="list-style-type: none"> - Improve upon task management on Trello - Project Report (Continue) - Project management and facilitation
What was accomplished ?	<ul style="list-style-type: none"> - Task management board - Done - Learning from technical discussions as implementation work is in progress - Project management and facilitation
Time spent (Hours)	12

Blockers

- For now, there are no blockers identified.

Plan for the next week

Keshava Srinivas	<ul style="list-style-type: none"> - Setup blockchain with resources as per what was planned in the system diagram - Finalize the keymaker protocol with necessary changes - Deploy the keymaker protocol as chaincode on the blockchain network
Nithin Ram	<ul style="list-style-type: none"> - Implement Lagrange's equation in Go - Deploy protocol as API endpoint - Contribute to chaincode
Noura Alfayez	<ul style="list-style-type: none"> - Complete first draft of technical documentation - Setup the blockchain network
Prerit Pathak	<ul style="list-style-type: none"> - Setup a blockchain network that is relevant to our use case

	<ul style="list-style-type: none"> - Work on the chaincode - Work on the API endpoint
Vaanya Gupta	<ul style="list-style-type: none"> - Contribute to protocol development and technical documentation - Setup the blockchain network
Pramod Illuri	<ul style="list-style-type: none"> - Project Report (Cont) - Project management and facilitation - Docs review (HLD)

Week: 10/15/2022 To 10/21/2022 - Mid semester Break

Week : 10/08/2022 - 10/14/2022

High level project status:

Accomplished this week	<ul style="list-style-type: none">- Key-maker protocol local implementation- Work in progress on block chain setup
Plan for the next week	<ul style="list-style-type: none">- Continue to work on block chain setup- Fix issues in key maker protocol implementation in Golang (To support hyperledger fabric)- Proper High level design document (Based on the research so far)

Individual status for the week:

Keshava Srinivas

What was planned ?	<ul style="list-style-type: none">- Work on the implementation of the keymaker protocol and the verification algorithm using python- Work on setting up and deploying the hyperledger blockchain architecture on the cloud- Collaborate and finalize the midterm presentation
What was accomplished ?	<ul style="list-style-type: none">- Implemented the keymaker protocol - identity provisioning and verification. This was done locally using Python- Worked with the team on finalizing the midterm presentation and presented on Thursday.
Time spent (Hours)	<ul style="list-style-type: none">- 24

Nithin Ram

What was planned ?	<ul style="list-style-type: none"> - Independently and locally implement identity provisioning, sharding and verification part of the protocol in Go - Work on the project mid-term presentation - Go through reference material and learn from teammates on how to implement hyperledger fabric on AWS
What was accomplished ?	<ul style="list-style-type: none"> - Worked with the team to prepare and present mid-term presentation - Implemented provisioning and sharding part of keymaker protocol in Go
Time spent (Hours)	24

Noura Alfayez

What was planned ?	<ul style="list-style-type: none"> - work on the midterm presentation - Independently implement the sharding and verification functions locally to compare with team members
What was accomplished ?	<ul style="list-style-type: none"> - Contributed to the midterm presentation - Attempted implementation of protocol locally - Completed 1-to-1 feedback sessions with team members
Time spent (Hours)	24

Prerit Pathak

What was planned ?	<ul style="list-style-type: none"> - Try to implement the algorithm locally using python - Make program on blockchain setup
What was accomplished ?	<ul style="list-style-type: none"> - Completed 50% of the coding aspect using python - Faced VPC issues, communicated them to the sponsor - Edited setup scripts to bypass issues
Time spent (Hours)	24

Vaanya Gupta

What was planned ?	<ul style="list-style-type: none"> - Try to independently implement identity provisioning, sharding and verification part of the protocol
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	<ul style="list-style-type: none"> - Work on setting up and deploying the hyperledger blockchain architecture on the AWS - Finalize midterm presentation
What was accomplished ?	<ul style="list-style-type: none"> - Had some roadblocks deploying the network but making progress - Read and understood the identity provisioning, sharding and verification part of the protocol deployed by Nithin and Keshav - Worked with the team to finalize the midterm presentation
Time spent (Hours)	24

Pramod Illuri

What was planned ?	<ul style="list-style-type: none"> - Team feedback activity - Meeting notes and decisions documentation initiated - Project management and facilitation activities - III CMU course requirement
What was accomplished ?	<ul style="list-style-type: none"> - Conducted 1:1 sessions for peer feedback - CMU course requirements for the week - Project management and facilitation activities
Time spent (Hours)	12

Blockers

- For now, there are no blockers identified.

Plan for the next week

Keshava Srinivas	<ul style="list-style-type: none"> - Work on setting up and deploying the hyperledger blockchain architecture on the cloud - Start working on getting the protocol implemented on the blockchain.
Nithin Ram	<ul style="list-style-type: none"> - Complete local implementation of keymaker protocol - Optimize code for protocol - Learn hyperledger fabric with resources and implement on AWS
Noura Alfayez	<ul style="list-style-type: none"> - Continue to work on block chain setup

	<ul style="list-style-type: none"> - Write High level design document covering research and diagrams explanations
Prerit Pathak	<ul style="list-style-type: none"> - Fix setup scripts to bypass vpc issues and setup the blockchain with 4 members - setup ini aws account for testing and perform the same setup - start writing the chaincode
Vaanya Gupta	<ul style="list-style-type: none"> - Complete the deployment of Hyperledger fabric network on AWS - Study and research about integration
Pramod Illuri	<ul style="list-style-type: none"> - Improve upon task management on Trello - Project Report (Continue) - Project management and facilitation

Week : 10/01/2022 - 10/07/2022

High level project status:

Accomplished this week	<ul style="list-style-type: none">- Version 1 of reference architecture and system diagram were developed- Technical review with project sponsor- Setup of development platform
Plan for the next week	<ul style="list-style-type: none">- Develop TrustDER initial authentication and sharding protocol- Capture and reflect improvements on the reference architecture and system diagram- Summarize in High level design document- Mid term presentation

Individual status for the week:

Keshava Srinivas

What was planned ?	<ul style="list-style-type: none">- Research gossip protocol and its implementation- Work on the reference architecture and system diagram with the team- Get more experience with Hyperledger Fabric on the cloud
What was accomplished ?	<ul style="list-style-type: none">- Worked with the team on finalizing the reference architecture and project flow- Collaborated on the first version of the system diagram- Read into gossip protocols and their implementation- Worked on the network design of the system
Time spent (Hours)	24

Nithin Ram

What was planned ?	<ul style="list-style-type: none">- Understand how Hyperledger fabric is deployed on AWS to contribute to the blockchain codebase- Research a gossip-based approach to securely distribute shards to different nodes on the network- Work on the identity provisioning and sharding part of the reference architecture- Come up with and finalize the reference architecture diagram
What was accomplished ?	<ul style="list-style-type: none">- Worked on sharding phase of reference architecture- Finalized the reference architecture- Collaborated with the team to come up with draft system diagram, based on which implementation is to begin
Time spent (Hours)	24

Noura Alfayez

What was planned ?	<ul style="list-style-type: none">- Improve System architecture- Decide on the blockchain and the architecture (what are the device requirements? are they gonna be virtual (ec2 instances) or raspberry pi?- consider algorithmic security risks, commercialization risks, ... etc and document it
What was accomplished ?	<ul style="list-style-type: none">- participated in reference architecture and system diagram development meetups- Reviewed blockchain developers guide and identified relevant design proposals that were shared with project sponsor
Time spent (Hours)	24

Prerit Pathak

What was planned ?	<ul style="list-style-type: none">- Understand the sharding algorithm and the verification process- Finalize the system workflow- Support reference diagram and system diagram creation
What was accomplished ?	<ul style="list-style-type: none">- Clarified requirements and questions with the sponsor

	<ul style="list-style-type: none"> - Collaborated with the team to create a system diagram and reference architecture - Finalized the workflow of the project including protocol, cloud, and blockchain components
Time spent (Hours)	24

Vaanya Gupta

What was planned ?	<ul style="list-style-type: none"> - Research and understand the identity provisioning and sharding algorithm - Finalize system workflow - Design and complete the system architecture
What was accomplished ?	<ul style="list-style-type: none"> - Finalized the workflow - Designed and completed the system architecture - Clarified doubts and questions with the sponsor - Understood the final workflow and the implementation of all the components
Time spent (Hours)	24

Pramod Illuri

What was planned ?	<ul style="list-style-type: none"> - Project Report - Continue - Consolidate minutes of meetings - weekly and daily standups - Team feedback activity
What was accomplished ?	<ul style="list-style-type: none"> - Team feedback activity - Meeting notes and decisions documentation initiated - Project management and facilitation activities - III CMU course requirement
Time spent (Hours)	12

Blockers

- For now, there are no blockers identified.

Plan for the next week

Keshava Srinivas	<ul style="list-style-type: none"> - Work on the implementation of the keymaker protocol and the verification algorithm using python - Work on setting up and deploying the hyperledger blockchain architecture on the cloud - Collaborate and finalize the midterm presentation
Nithin Ram	<ul style="list-style-type: none"> - Independently and locally implement identity provisioning, sharding and verification part of the protocol in Go - Work on the project mid-term presentation - Go through reference material and learn from teammates on how to implement hyperledger fabric on AWS
Noura Alfayez	<ul style="list-style-type: none"> - work on the midterm presentation - Independently implement the sharding and verification functions locally to compare with team members
Prerit Pathak	<ul style="list-style-type: none"> - Contribute to the mid term presentation - Set up a hyperledger fabric network on AWS - Attempt to implement the sharding and verification algorithm using Python
Vaanya Gupta	<ul style="list-style-type: none"> - Work on the midterm presentation - Deploy hyperledger fabric network on AWS - Work on implementing the sharding process and the verification functions using Python
Pramod Illuri	<ul style="list-style-type: none"> - Project Report - Continue - Mid term presentation (support ini team) - SOW revision as we reached milestone-1 - Update changes based on the learning and clarity we got so far - Expect minimal to zero changes from here on.

Week : 09/24/2022 - 09/30/2022

High level project status:

Accomplished this week	<ul style="list-style-type: none">- Finished individual tasks to get hands on experience with key concepts of blockchain (details below)- Initial version of reference architecture- Revised statement of work
Plan for the next week	<ul style="list-style-type: none">- Reference architecture- Detailed system diagram- Quick POCs and explorations required in the process of working towards system diagram

Individual status for the week:

Keshava Srinivas

What was planned ?	<ul style="list-style-type: none">- Complete the tasks assigned by Mayank in order to get a hands-on experience of how blockchain works. The tasks include:-<ul style="list-style-type: none">- Performing and viewing transactions on a test network using Ethereum- Build a two node network on hyperledger fabric in AWS- Start working with the team on getting the reference architecture in place.- Get some familiarity with smart contracts using the truffle suite.
What was accomplished ?	<ul style="list-style-type: none">- Completed the tasks assigned by Mayank and gained hands-on experience in locally deploying a HyperLedger Fabric network.

	<ul style="list-style-type: none"> - Also collaborated with the team on deploying a test network on AWS using hyperledger fabric. - Worked with the team on creating a basic reference architecture in order to understand the flow of the project. - Did research on gossip protocols and their implementation
Time spent (Hours)	24

Nithin Ram

What was planned ?	<ul style="list-style-type: none"> - Collaborate with the team to identify the different parts of the desired system. - Research on coming up with a gossip-based approach for inter-node communication. - Gain knowledge about real world blockchain transactions by performing transactions on ethereum test networks. - Gain knowledge about blockchain mining by farming chia and creating proofs on a hard drive.
What was accomplished ?	<ul style="list-style-type: none"> - Used Metamask to perform Ethereum transactions on the Ropsten test network. - Researched about Chia and experimented on farming Chia plots to evaluate it as an option for the project's blockchain - Read about basic gossip protocols - Collaborated with the team and came up with a rough flow diagram of the project, identifying different components involved
Time spent (Hours)	24

Noura Alfayez

What was planned ?	<ul style="list-style-type: none"> - Complete the assignment tasks from the sponsor to get hands-on experience with key blockchain concepts - Work on reference architecture and system diagram (identify initial components and prepare for the development workshop next week)
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What was accomplished ?	- Worked on understanding the basics about hyperledger fabric and ethereum.
Time spent (Hours)	24

Prerit Pathak

What was planned ?	<ul style="list-style-type: none"> - Research hyperledger fabric architecture and how it can fit our project requirements. - Install Metamask and perform multiple transactions on Ethereum (Robsten). - Deploy a 2-node hyperledger fabric network on AWS. - Research about gossip protocols. - Contribute to the reference architecture.
What was accomplished ?	<ul style="list-style-type: none"> - Learned in-depth about hyperledger fabric, it's components and architecture - Tried multiple attempts to use AWS managed blockchain using hyperledger but faced permission issues - Researched about gossip protocols - Contributed to the reference architecture from the blockchain perspective
Time spent (Hours)	- 23 ~ 25 hours

Vaanya Gupta

What was planned ?	<ul style="list-style-type: none"> - Research hyperledger fabric architecture and how it can fit our project requirements. - Install Metamask and perform multiple transactions on Ethereum (Robsten). - Deploy a 2-node hyperledger fabric network on AWS. - Research about gossip protocols. - Contribute to the reference architecture.
What was accomplished ?	<ul style="list-style-type: none"> - Research about the hyperledger fabric architecture and how it can fit our project requirements and came up with a rough flow of the implementation. - Installed Metamask and performed multiple transactions on Ethereum (Robsten). - Tries deploying 2-node hyperledger fabric network on AWS but ran into some permission errors. - Researched about the gossip protocols.

Time spent (Hours)	- 23 ~ 25 hours
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Pramod Illuri

What was planned ?	<ul style="list-style-type: none"> - Start writing overall report that captures project management information, high level technical discussions, key decisions taken, etc (Consolidated) - Statement of work - Refine and incorporate feedback from stakeholders - Project management and facilitation activities
What was accomplished ?	<ul style="list-style-type: none"> - Project report - In progress - Revised statement of work - Project management and facilitation activities
Time spent (Hours)	- 8 hours

Blockers

- For now, there are no blockers identified.

Plan for the next week

Keshava Srinivas	<ul style="list-style-type: none"> - Research more into the gossip protocols and come up with a suitable idea for the project. - Work with the team on finalizing the flow of the project and the reference architecture. - Research more about AWS hyperledger fabric and collaborate with the team to deploy a test network.
Nithin Ram	<ul style="list-style-type: none"> - Understand how Hyperledger fabric is deployed on AWS to contribute to the blockchain codebase - Research a gossip-based approach to securely distribute shards to different nodes on the network - Work on the identity provisioning and sharding part of the reference architecture - Come up with and finalize the reference architecture diagram
Noura Alfayez	<ul style="list-style-type: none"> - Improve System architecture

	<ul style="list-style-type: none"> - Decide on the blockchain and the architecture (what are the device requirements? are they gonna be virtual (ec2 instances) or raspberry pi?) - consider algorithmic security risks, commercialization risks, ... etc and document it
Prerit Pathak	<ul style="list-style-type: none"> - Finalize the role of each node and how the blockchain will work exactly - Look into On-premise vs Cloud-based hyperledger fabric setup - Deploy the hyperledger fabric network - Finalize the reference architecture diagram - Research about sharding and shamir secret sharing
Vaanya Gupta	<ul style="list-style-type: none"> - Think about the distribution of nodes and their roles for our project's scope. - Research about the hardware requirements for hyperledger fabric - Come up with a flow diagram and reference architecture diagram - Research about gossip protocol and sharding - Finish deploying the hyperledger fabric network
Pramod Illuri	<ul style="list-style-type: none"> - Project Report - Continue - Consolidate minutes of meetings - weekly and daily standups - Team feedback activity

Week #3 : 09/17/2022 - 09/23/2022

High level Project Status:

Accomplished this week :

1. As a team we decided to do some research on various blockchain technologies in order to figure out which could be a best-fit for this project and its use cases.
2. We collectively came to a conclusion that Hyperledger Fabric is the best technology for this project as it not only has a relatively high transaction speed but is also very convenient to deploy as it has great AWS integration.

Plan for the next week :

1. Set of individual action items to get real time hands-on experience with key block chain concepts
2. First cut of Reference architecture

What was planned for this reporting period

Keshava Srinivas:

- Identify key functions of the project and figure out how the keymaker protocol can be implemented using a blockchain network.
- Read up on various gossip protocols in order to identify the best method of distributing the shards amongst the nodes in the network
- Read up on the various blockchain technologies
- Contribute to the reference architecture development

Nithin Ram:

- Propose a technical development strategy
- Develop the initial reference architecture for the project
- Research on how sharding works and how it should be implemented in the project

Prerit Pathak:

- Finalize the blockchain technology after discussion with team members
- Start working on an initial smart contract

Vaanya Gupta:

- Complete a comparison of blockchain (Algorand, Ethereum and Hyperledger) according to the project technical requirements
- Contribute to the reference architecture development

Noura Alfayez:

- Finalize the blockchain technology selection and deployment strategy
- Develop the initial reference architecture for the project

Pramod Illuri:

- Work towards statement of work document for stakeholders signoff
- Create overall project management report/record document
- Project management and facilitation activities

What was done during this reporting period

Keshava Srinivas:

- Went through and compared the various blockchain technologies in order to collectively determine the suitable technology for this project.
- Went through the resources related to secret sharing so as to get a better understanding of the protocol and how it can be incorporated onto a blockchain architecture
- Read up on gossip protocols and its different types.

Nithin Ram:

- Read up on various available resources to understand Shamir Secret Sharing.
- Researched on different blockchain technologies available and collaborated with the team to take a final decision on which blockchain technology to use.
- Researched on different API gateways provided by AWS and the differences between each of them.

Prerit Pathak:

- Researched on and compared different blockchain technologies (Ethereum, Algorand and Hyperledger Fabric) to determine suitability with our use case.

Vaanya Gupta:

- Researched and collected information to compare the various blockchain technologies (Ethereum, Algorand, Hyperledger Fabric) in order to determine the suitable blockchain technology for our project.
- Researched about secret sharing and different gossip protocols.

Noura Alfayez:

- Collected information on different blockchain technologies to decide on the blockchain to be used in the project

Pramod Illuri:

- Statement of work initial version
- Project management and facilitation activities

Blockers

For now, there are no blockers identified.

What is planned for the next reporting period

Keshava Srinivas:

- Complete the tasks assigned by Mayank in order to get a hands-on experience of how blockchain works. The tasks include:-
 - Performing and viewing transactions on a test network using Ethereum
 - Build a two node network on hyperledger fabric in AWS
- Start working with the team on getting the reference architecture in place.
- Get some familiarity with smart contracts using the truffle suite.

Nithin Ram:

- Collaborate with the team to identify the different parts of the desired system.
- Research on coming up with a gossip-based approach for inter-node communication.
- Gain knowledge about real world blockchain transactions by performing transactions on [ethereum test networks](#).
- Gain knowledge about blockchain mining by farming [chia](#) and creating proofs on a hard drive.

Prerit Pathak:

- Complete the assigned tasks - transact on Ethereum test network Rapsin and build the Hyperledger Fabric network on AWS.
- Understand more about gossip protocols.

- Work on reference architecture with the team

Vaanya Gupta:

- Complete the tasks assigned by the sponsor in order to get familiarized with the working of blockchain. These tasks include interacting and performing multiple transactions with Ethereum; and building hyperledger fabric - 2-node network on AWS.
- Research on various gossip protocols and get an understanding of the truffle suite.
- Work on the reference architecture with the team.

Noura Alfayez:

- Complete the assignment tasks from the sponsor to get hands-on experience with key blockchain concepts
- Work on reference architecture and system diagram (identify initial components and prepare for the development workshop next week)

Pramod Illuri:

- Start writing overall report that captures project management information, high level technical discussions, key decisions taken, etc (Consolidated)
 - Statement of work - Refine and incorporate feedback from stakeholders
 - Project management and facilitation activities
-

Week #2 : 09/10/2022 - 09/16/2022

High level Project Status:

Accomplished this week :

1. Broken down the exploration tasks into smaller areas and each of the team members explored one area each
2. Met sponsor at SLAC clarifications and understanding the project scope better
3. Development Plan
4. Roles and responsibilities defined for each member of the team
5. Agile and lean Practices defined for the team put into action

Plan for the next week :

1. Work towards reference architecture
2. Work towards system architecture diagram
3. Statement of work
4. Project management record document

What was planned for this reporting period

Keshava Srinivas:

- Gain more insight into the project and its intricacies
- Meet with Arjun to understand more about blockchain technologies
- Plan on deciding role within project

Nithin Ram:

- Decide what role to play in the project
- Meet with researcher from Cylab to learn more about blockchain
- Get access to additional resources provided by the sponsor

Prerit Pathak:

- Discuss my role with the team based on my experiences and expertise
- Work with Arjun to finalize the blockchain technology (Ethereum/Hyperledger/something else)

Vaanya Gupta:

- Learn blockchain from the meeting with the Cylab researcher, Arjun
- Finalize my role in the project

Noura Alfayez

- Meet with researcher from Cylab to learn more about blockchain
- Complete initial evaluation of blockchain technologies that can be used for the project

Pramod Illuri

- Communicate with the team about the logistics that were agreed upon
- Clearly define roles and responsibilities for each of us
- Understand the project in little bit more depth
- Start working on statement of work
- Facilitate team with access to SLAC resources from the sponsor

What was done during this reporting period

Keshava Srinivas:

- Finalized role in the project and communicated plan with the sponsor.
- Attended the blockchain mentorship session with CyLab researcher Arjun.
- Evaluated cloud functionalities for the project and prepared relevant questions for the technical discussion with the sponsor.
- Attended in person meeting with the project sponsor at SLAC & clarified project plan

Nithin Ram:

- Assumed the role of technical lead for the project
- Attended the blockchain mentorship session with CyLab researcher Arjun.
- Evaluated ‘sharding readup’, a critical technical aspect of the authentication protocol, and prepared relevant questions for the technical discussion with the sponsor
- Attended the technical planning session with the project sponsor and agreed upon plan and future logistics

Prerit Pathak:

- Attended the blockchain mentorship session with CyLab researcher Arjun
- Finalized after discussions with the team to own the blockchain engineering portion
- Researched on blockchain technologies such as Ethereum, Hyperledger and Algorand
- Got doubts cleared in the first SLAC meeting
- Onboarded and setup my tasks on the trello board

Vaanya Gupta:

- Attended the blockchain mentorship session with CyLab researcher Arjun
- Completed initial evaluation of blockchain technologies
- Evaluated blockchain and Raspberry Pi integration and prepared relevant questions for the technical discussion with the sponsor
- Attended sponsor meeting and engaged in technical discussions and planning

Noura Alfayez:

- Attended the blockchain mentorship session with CyLab researcher Arjun.
- Researched blockchain technologies and identified key differences and relevant areas of concern to the project
- Evaluated TrustDER applications and prepared questions for the project technical discussion with the sponsor
- Had technical discussion with the project sponsor and clarified the implementation strategy and project requirements

Pramod Illuri:

- Team practices adopted - Task management, standups, weekly meetings
- Statement of work draft
- Project management tools setup
- Coordinated first team meeting with sponsor at SLAC
- Project management and facilitation activities

Blockers

For now, there are no blockers identified.

What is planned for the next reporting period

Keshava Srinivas:

- Identify key functions for the project system diagram
- Contribute to the reference architecture development

Nithin Ram:

- Propose a technical development strategy
- Develop the initial reference architecture for the project

Prerit Pathak:

- Finalize the blockchain technology after discussion with team members
- Start working on an initial smart contract

Vaanya Gupta:

- Complete a comparison of blockchain (Algorand and Hyperledger) according to the project technical requirements
- Contribute to the reference architecture development

Noura Alfayez:

- Finalize the blockchain technology selection and deployment strategy
- Develop the initial reference architecture for the project

Pramod Illuri:

- Work towards statement of work document for stakeholders signoff
 - Create overall project management report/record document
 - Project management and facilitation activities
-

Week #1 : 09/05/2022 - 09/09/2022

High level Project Status:

Accomplished this week :

1. As a team, we had the project kickoff meeting this monday to introduce ourselves and discuss the logistics, collaboration channels, weekly cadence, project at a high level, and resources to get started.
2. Agreeing upon team logistics and roles.
3. Gained initial understanding of the project through additional resources shared by the sponsor. Completed problem definition and initial scoping of the project.
4. Team doesn't have much experience working with blockchain networks. Hence, we were exploring the topic and searched for learning resources.
5. Scheduled a mentorship session with Arjun Brar to benefit from his expertise as a Cylab Blockchain researcher.

Plan for the next week :

1. Attend the mentorship session on blockchain and decide on the technology to be used in this project.
2. Figure out next steps for the team from now and share our plan during the next sync-up meeting with the sponsor on Thursday.
3. Continue learning about the project topic identity authentication in a decentralized distributed environment.

What was planned for this reporting period

NA

What was done during this reporting period

Keshava Srinivas:

- Met with the team and sponsor and worked on planning the logistics for the project.
- Went over the reading material provided by the sponsor.
- Worked with the team on scoping out the project.

Nithin Ram:

- Met the sponsor and worked out the logistics part of the project
- Went through the resources provided by the sponsor
- Scoped out the project

Prerit Pathak:

- Met with the sponsor and asked relevant questions related to the project which helped in understanding the scope of the project
- Covered the reading and visual material provided by the sponsor
- Read about writing smart contracts using Ethereum and Hyperledger fabric

Vaanya Gupta:

- Attended the sponsor meeting and contributed to the logistical planning
- Read the research work sent by the sponsor

Noura Alfayez:

- Met with sponsor and agreed upon initial logistics plan
- Set Up a team meeting with blockchain researcher for mentorship and guidance

Pramod Illuri:

- Project kickoff meeting
- Gone through the resources shared by the sponsor to understand the problem
- Completed Project Pre-mortem, risk analysis and org chart
- Setting up project management tools - In progress

Blockers

For now, there are no blockers identified.

What is planned for the next reporting period

Keshava Srinivas:

- Gain more insight into the project and its intricacies.
- Meet with Arjun to understand more about blockchain technologies
- Plan on deciding role within project

Nithin Ram:

- Decide what role to play in the project
- Meet with researcher from Cylab to learn more about blockchain
- Get access to additional resources provided by the sponsor

Prerit Pathak:

- Discuss my role with the team based on my experiences and expertise
- Work with Arjun to finalize the blockchain technology (Ethereum/Hyperledger/something else)

Vaanya Gupta:

- Learn blockchain from the meeting with the Cylab researcher, Arjun
- Finalize my role in the project

Noura Alfayez:

- Meet with researcher from Cylab to learn more about blockchain
- Complete initial evaluation of blockchain technologies that can be used for the project

Pramod Illuri

- Communicate with the team about the logistics that were agreed upon
- Clearly define roles and responsibilities for each of us
- Understand the project in depth
- Start working on statement of work
- Facilitate team with access to SLAC resources from the sponsor