NFT2.0 - Immutable Qualification

Australian National University TechLauncher Audit 3

24-S1-2-C Immutable Team

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Project Intro

The Design Problem – The User

- Physical credentials are **expensive to replace** / **easily get lost** / hard to keep track of
- Most credential managers won't let you store **microcredentials**, which may limit what is verifiable on your resume
- Some metadata can be used to **commit identity theft**.
  - Most credential managers store your information on a centralized databases, which is more vulnerable to data leaks.
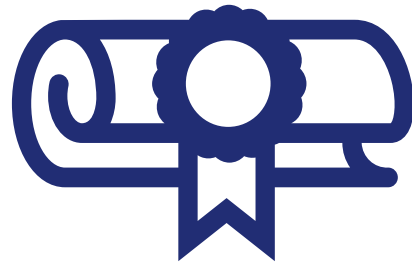
The Design Problem – The Employer and Institution

For the employer:
● Verifying a prospective employee's credentials can be time-consuming and costly.
● Investigating some claims may even require a middlemen, which adds to cost.

For the institution:
● Smaller institutions that offer **microcredentials** will not have their credentials indexable by checkers like the Australian Qualification Check

# The Design Solution – Immutable

- **Credentials are stored as NFT:**
  - Non-fungible by nature
  - Tamper-proof from third parties

- **Can store a wide range of credentials:**
  - AQF qualification (i.e., Certificates, diplomas and degrees, etc...)
  - Microcredentials (i.e., VET skill sets, units of competency, etc...)

- **Plans to store on a decentralized database:**
  - More secure from data leaks
  - Easily scalable
  - Less server down-time

Project Output (+ Demo)

Work Packages This Semester

Microcredential Framework Compliance
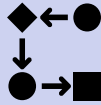
Application Process Uplift

Decentralised Hosting

Project Maintenance

Microcredential Framework Compliance

Application Process Uplift

Decentralised Hosting and Project Maintenance

Immutable NFT

System Architecture Document

Version 3.0

Contour group

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V3.0
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contour

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Andy Chih

You Haven't Set Up Your Profile, Go to Set It!

Minted Badges

contour

Pioneering the Future of Qualifications with Blockchain Technology: Explore the groundbreaking NFT 2.0 - Immutable and Non-transferable Qualifications.

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Products
Degree Verification
Institution Onboarding
Job Market Integration
Multichain Interoperability Service

Resources
Whitepaper
API Documentation
Institutional Guide
Blog/News
FAQ

Company
About Us
Contact
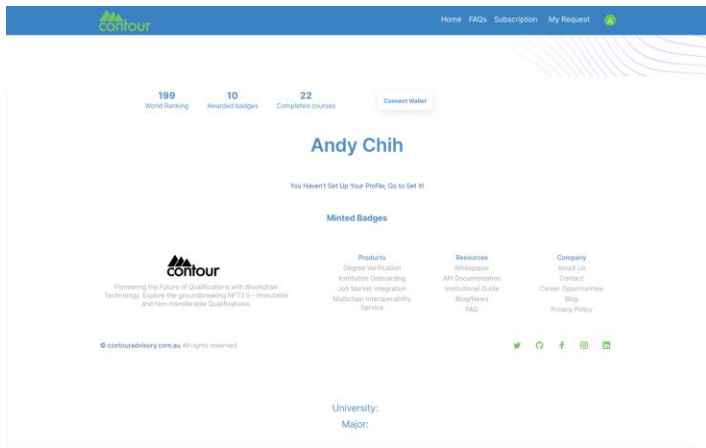Career Opportunities
Blog
Privacy Policy

University:
Major:

Outline

This is a research document outlining potential options for decentralized hosting of the Immutable platform.

For more information on what decentralized hosting is and how it works, here is an online research report for clarification.

Selection Criteria

- Need to have the capabilities of:
  - **Cloud Storage**: We require cloud storage to safeguard and manage our users' data, enabling us to perform various operations like data retrieval, backup, and updates
  - **Domain Name System (DNS)**: DNS is a must since we need it to do our order (connect, search, authenticate), however, how many queries we need should be dependent on our business volume.
  - **Content Delivery Network (CDN)**: CDN decides the float number of customers of a zone using our web. We need to decide how many gigabytes(GB) of data we are going to assign to each zone based on our customer volume in different areas.
  - **CPU**: requirements are to be determined after live testing
- Reasonable pricing plan
- Reliable reputation for hosting other websites
- Actively being maintained
- Active tech support

Options

Identify 8 different options for decentralized hosting, in no particular order.

Project Maintenance

Additional UI/UX Bug Fixes

Systems Architecture Document (SAD) Upkeep

Status Board and Task List

Video Demo of website

- https://youtu.be/2bXwaE7oj8c
- Web changing since last demo:
- Database
- Admin page
- Institution admin page
- Request page
- Home page

Addressing Stakeholder Feedback

Feedback from Audit 2

Issue: Task Completion Rate is Low // // What's Observed: From GitHub records, only 3 out of 27 tasks are marked as done, with little substantial progress week to week. // // Suggested Solution: Prioritize the task list and introduce weekly sprints. Ensure tasks are broken down into smaller, more manageable pieces and assign clear owners to each sprint task to improve completion rates.

Shadow

Presented the current deliverables aligned with the milestones and screeenshots as evidence of the output work. However, the "ticketing system" has not updated and align with the milestones, all the tasks that have been completed should show in the "ticketing system"

Shadow

The team is at a stage where everyone needs to prove their leadership and initiative. Look forward to seeing some fresh progress and a lot of well-organised and well-coordinated outputs.
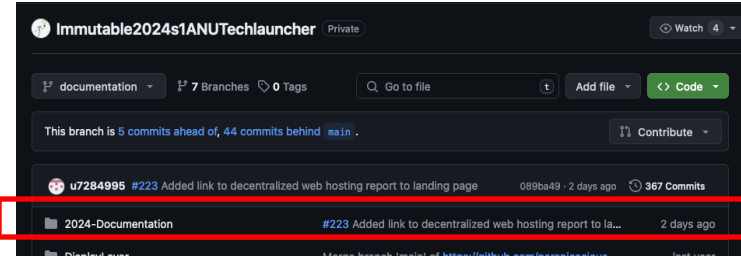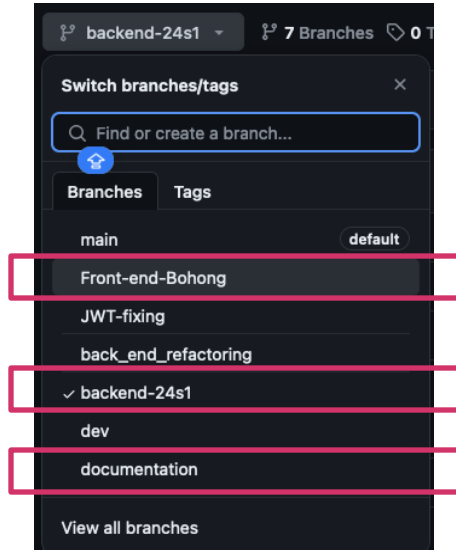
Tutor

decision making process can sometimes be a bit difficult with not everyone avaliable to respond in a timely mannor. However, decision making during in-person and video call meetings is good. There are also some issues with the team struggling to evaluate or understand the feedback from our tutor and examiner. It may be benifical if we use something like google docs to track meeting minutes (live edits), so everyone can properly understand the feedback from our tutor.

Self

While direct communication is vital, not having a record of these discussions can lead to information silos, where knowledge and decisions are not effectively shared across the team.Feedback: To enhance team communication, it's beneficial to establish norms around using digital communication tools where conversations are logged and accessible. Tools like Slack, Microsoft Teams, or even dedicated channels within project management software can serve this purpose. These platforms can support informal discussions, formal decision-making, and everything in between, ensuring that team members are informed and engaged. // // Promoting Teamwork Manifestation Observation: The inability to see the manifestation of teamwork could imply that the team lacks a defined strategy for collaborative work or fails to recognize and celebrate collective achievements. This situation can affect morale and diminish the value of team synergy in achieving project goals. // //

Shadow

The purpose of good decision-making is that challenges the teams confront and treated rationally and in a manner that can be referred to later. This system doesn't seem to be in place at the moment, an authentic mechanism to make decisions (that can also be referred to by any necessary stakeholders later) should be implemented. // //

Tutor

Team coordination in producing project outcomes is good when done in-person. However the team needs to improve working coherently online when using git issues with commits. It may be benifical to spend some time during team meetins enforcing good verson control habits to practice. We should aslo be assigning reviewers to issues to ensure project outputs are being checked by more than one person.

Self

Corrective Actions of Feedback

Documentation Artifacts

A very quick overview...

Changes to Team Charter

Team Charter was changed to ensure all documentation artifacts were the responsibility of one person

- Far easier to manage for everyone
- Coding team could focus on work packages
- Consistent quality throughout documentation

Name	Teams Contact	Location	Role	Weekly Record
Nuoxi Qin	u7527676@anu.edu.au	on-campus	Project Manager, Frontend developer	Weekly Status Report (Code)
Linxi Li	U7095375@anu.edu.au	on-campus	UI designer, Full-stack Developer	
Mitchell Barker	u7284995@anu.edu.au	on-campus	Quality Assurance	Client Meeting Minutes, Tutorial Log, Team Meeting Minutes, Risk log, Client Meeting Agenda, Weekly tutorial agenda, Weekly Status Report (Documentation and Administration)
Bohong Sun	bohong.sun@anu.edu.au	on-campus	DevOps engineer, Database developer	
Songxuan Li	u7756861@anu.edu.au	on-campus	Front-end developer, Back-end developer	
Andy Chih	u7574003@anu.edu.au	on-campus	Full-stack developer	

Document Overhaul Work Package
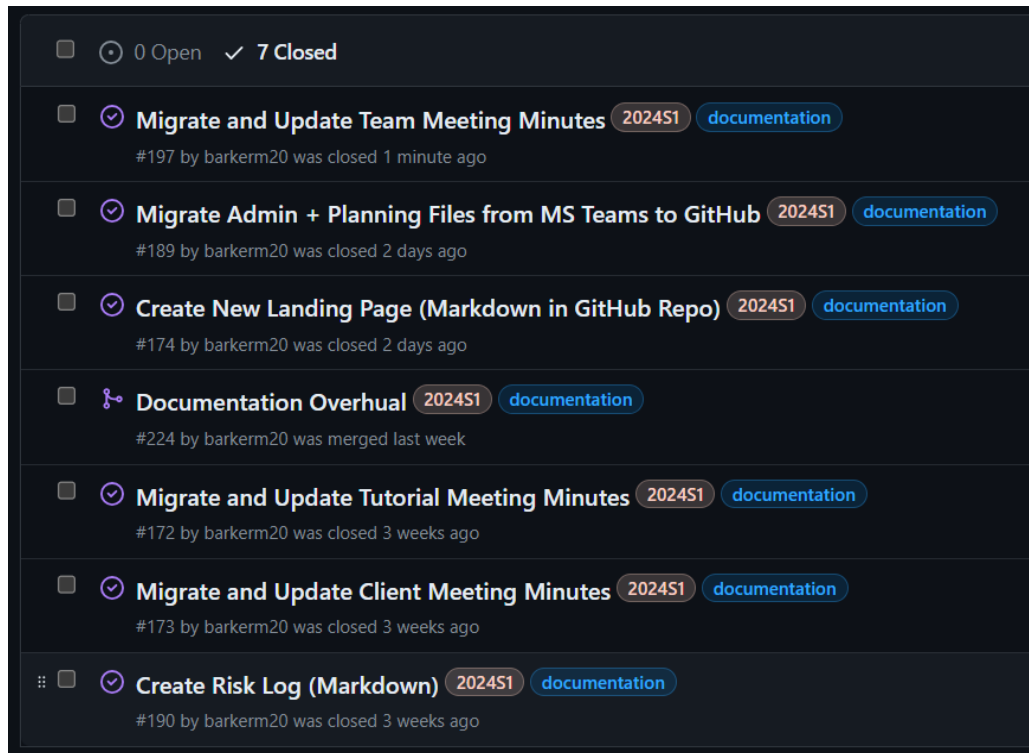
Designed to address feedback from key stakeholders after Audit 1 and 2.

- Migrating / rewriting all documentation artifacts

Overhauled Landing Page

Additional sections were added to landing page

- Address questions from stakeholders
- Markdown style is more flexible than MS SharePoint.

Project Output

Project management is only conducted through GitHub

Milestones (GitHub)   Status Board (GitHub)   RoadMap (GitHub)
User Story Map (Excel)   Risks Assessment   Decentralized Hosting

Meeting Minutes

Decision log and reflection log is integrated into meeting minutes

Team Meeting Minutes   Client Meeting Minutes   Tutorial Meeting Minutes

Administrative

Contracts, roles, and responsibilities.

Statement of Work   Team Charter

Presentaiton

The poster and link to the promotional video.

Audit 1 Slides   Audit 2 Slides   Audit 3 Slides
2024-S1 Poster   2024-S1 Video

Changes to Meeting Minutes – Client / Tutor/ Team

Agenda

1. Brief update on each individual progress - All Members
2. Update and important information from tutor meeting - Mitchell
3. Discussing elevator pitch for the platform (for a user / market) - Mitchell
4. More on WP3 research task (specifications and acceptance criteria) - Mitchell
5. Video assignment client acceptance criteria (the do's and don'ts in video) - Mitchell
6. Finishing thoughts and questions - All Members

Synopsis

- Progress Update:
  - Logo on the platform has been changed from Meikei to contour advisory
  - Function for accessing the requests from one institution is finished
  - There are hints that WP2 may need to be extended due bugs, not confirmed yet
- Quin recommends referring to previous semester's video for guidance, otherwise no other conditions
- WP3 and WP2 will be worked on concurrently when the documentation overhaul is finished
- During tutorial meetings, everyone will need to showcase what they have done to assert they are working on features that can run

Feedback

Send revised elevator pitch to Elena	Mitchell	26/04/2024
Submit WPP draft for Elena to review	All Members	26/04/2024
Send Elena video draft before week 9 submission	Mitchell	01/05/2024
Tell Quin to give Elena, Liang, and Shadow team access to our GitHub Project	Mitchell	19/04/2024

General Notes

- Elena says that every meeting with any group of people, so long as its public, should be documented
- When the examiner is marking the video, they will go through each of these points and mark on whether the video is conveying those points
- make sure spreadsheet for landing page is updated, managed by convener, that is what they must open during audit week to mark
- If we intend on working over the winter break (after a semester 1), we can use our work in audit 1, unless we are employed by the client company for money. should be discussed with the convener, elena can vouch for us as well
- in the elevator pitch, should ask an individual question to capture someone's interest, so they listen to our elevator pitch
- Must rewrite your selection criteria from scratch, turn-it in will detect it, CV can be referenced,
- Elena says we should reference our mistakes, challenges, and things that have gone wrong in our selection criteria. These can describe how we tackle problems and how we corrected it which can be more informative to an employer. give a story rather than a qualification
- Put updates on peoples work in their git issues, such as show to client, LGTM (Looks good to me) comments in issues.

Added Risk Log

Risk Log

This is a developing list of major risks which have been identified over the course of this semester as they relate to our projects success.

Risk Outline	Mitigation Strategy	Responsible Party
Web 3.0 is a payed service that may be dependent for running the platform locally, has fees attached is user goes over data limits	Ask client for company Web 3.0 account for testing purposes, review code unintentional repetition of requests	All Members
No CI/CD pipelines installed or built on project repo, may lead to issues testing work / proving features are functional to stakeholders	ask each stakeholder for preference of demonstrating project outputs, possibly implement basic CI in the form of test cases	Mitchell
Stakeholders have limited / no access to teams project outputs (GitHub) or project management tools (MS Teams / GitHub)	Send email to every stakeholder ensuring access to key resources prior to audit weeks	Mitchell, Nuoxi
Weekly documentation is not being done correctly / on time	to ensure consistent quality of documentation, all artifacts are now being done by one person, who is solely responsible for all artifacts	Mitchell

Outlining some risks identified in our project.

- Financial risks
- Process management risks
- Deliverable risks

Project Management

GitHub Branches
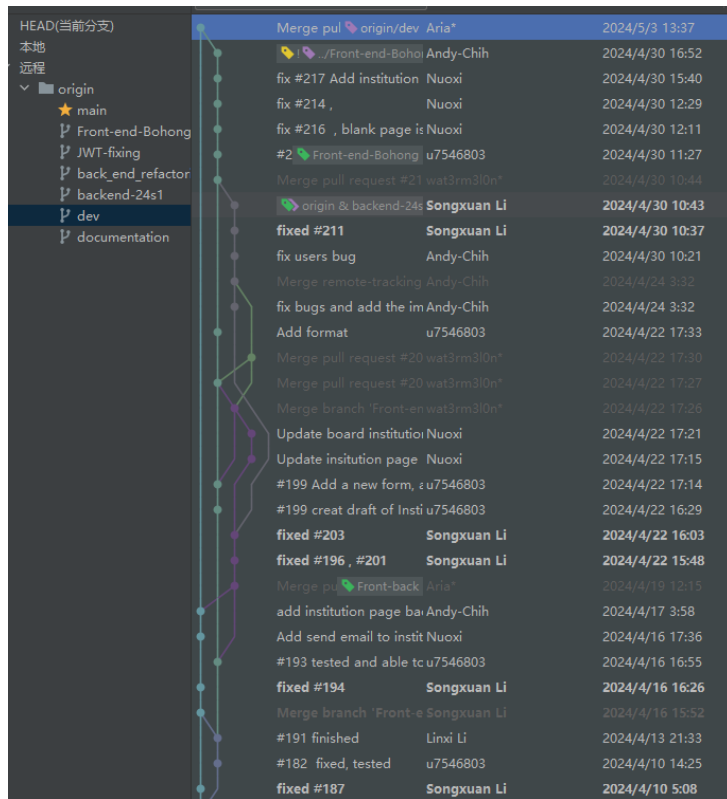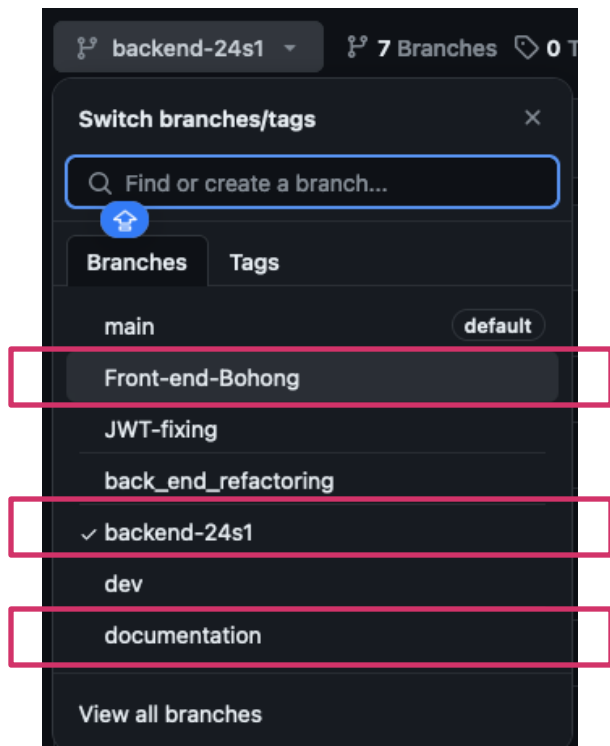
Workflow

Meeting Decisions   ->   Action Items -> GitHub Issues -> Code Development

Agenda

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- Quin recommends referring to previous semester's video for guidance, otherwise no other conditions
- WP3 and WP2 will be worked on concurrently when the documentation overhaul is finished
- During tutorial meetings, everyone will need to showcase what they have done to assert they are working on features that can run

Feedback

- Quin is happy with the progress of WP2, with WP3 starting next week as well we should be able to finish all work packages on time.

Decisions

- Video can be submitted on the same day, Quin is not too concerned with checking video before submitting

Action Items

Action Item	Responsible Party	Due Date
Create an account for email.js and send it to us for implementation	Quin	24/04/2024
Send elevator pitch to Quin	Mitchell	22/04/2024
Request field edit in institution request admin page	Linxi	24/04/2024
Build inital frontend of instituiton 'admin' page	Andy, Bohong	24/04/2024
Enable backend to return request information classified by institution	Songxuan	24/04/2024
Configure email information of backend	Nuoxi	24/04/2024

Add "institution admin board component" in header
Institution Verification Process Uplift
#217 by arianxq was closed 2 days ago

bug "blank page"
Institution Verification Process Uplift
#216 by arianxq was closed 2 days ago

Fix bug "cannot link the institution admin board to modal2 page"
Institution Verification Process Uplift
#215 by arianxq was closed last week

Fix bug cannot show the institution admin page
Institution Verification Process Uplift
#214 by arianxq was closed 2 days ago

Making showcase video
2024S1
#213 by arianxq was closed 2 days ago

Fix bug: Institution account can not login
Institution Verification Process Uplift
#211 by arianxq was closed 2 days ago

Complete the institution service/controllers and so on in backend
Institution Verification Process Uplift
#210 by arianxq was closed last week

Complete the back-end implementation for edit metadata function
Institution Verification Process Uplift
#209 by arianxq was closed last week

Commits on Apr 30, 2024

Institution dashboard update~
Andy-Chih committed last week   7452c70

#207 Added recommended video clip descriptions for each section of narration
u7284995 committed last week   88f4100

fix #217 Add institution board component in header
arianxq committed last week   039e79d

#207 Created inital storyboard for video
u7284995 committed last week   46b0ccf

fix #214 ,
arianxq committed last week   782b102

fix #216 , blank page issue
arianxq committed last week   a0004fc

#215 #214 add model2, nagivation and profile to show the specific page for instution user.
wat3r-m3lon committed last week   6bef2dd

Merge pull request #212 from perspicacious-slinki/backend-24s1   Verified
wat3r-m3lon committed last week   4024451

fixed #209
lisongxuan committed last week   4cb06c9

fixed #211
lisongxuan committed last week   db7ad55

fix users bug
Andy-Chih committed last week   0441bc8

Task Tracking

GitHub Issues   ->   GitHub Task List
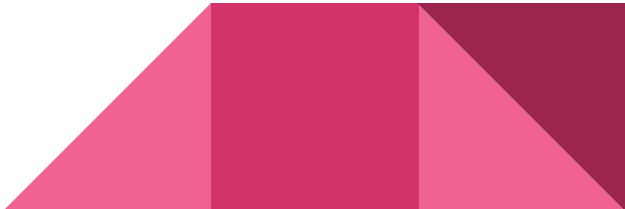
GitHub Status Board & Roadmap

Going Forward (Next Semester)

Decentralized Hosting Research & Implementation

Research Continuation:
- Further investigate the top 4 decentralized hosting options from WP3.
- Analyze performance, scalability, and cost-effectiveness.

Implementation Plan:
- Client selects a hosting platform.
- Conduct performance tests, unit tests, traffic load tests.
- Launch secure, decentralized hosting platform.

New Member Onboarding for next semester
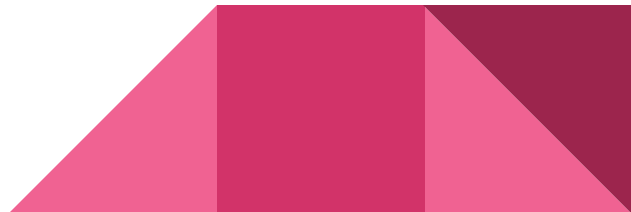
Install Sessions:
- Ensure all new members can run the platform on their machines.

Mentorship and Peer Review:
- Existing members mentor new members.
- Consistent code quality via peer review.

Commit Policy Training:
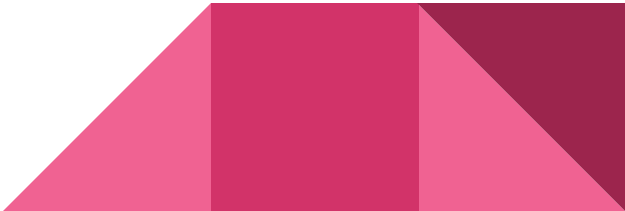- Git commit policy with issue numbers.

Workflow Handover

Project Management Workflow:
- Meeting decisions
- Action items
- GitHub issues
- Code development

Task Tracking and Roadmap:
- GitHub task list
- Roadmap system

Measuring Success in the Next Semester

- Performance and load testing of decentralized hosting

- Maintain high code quality through peer reviews and automated testing

- Track project progress via GitHub issues and status board

- Obtain client feedback on decentralized hosting implementation

Thanks For Listening!

Questions & Answers