



## Report September 2025

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**Role:** Facilitator of WIL students, Developer

**Group:** WIL students

**Number of students:** 4

**Date:** 28 September 2025

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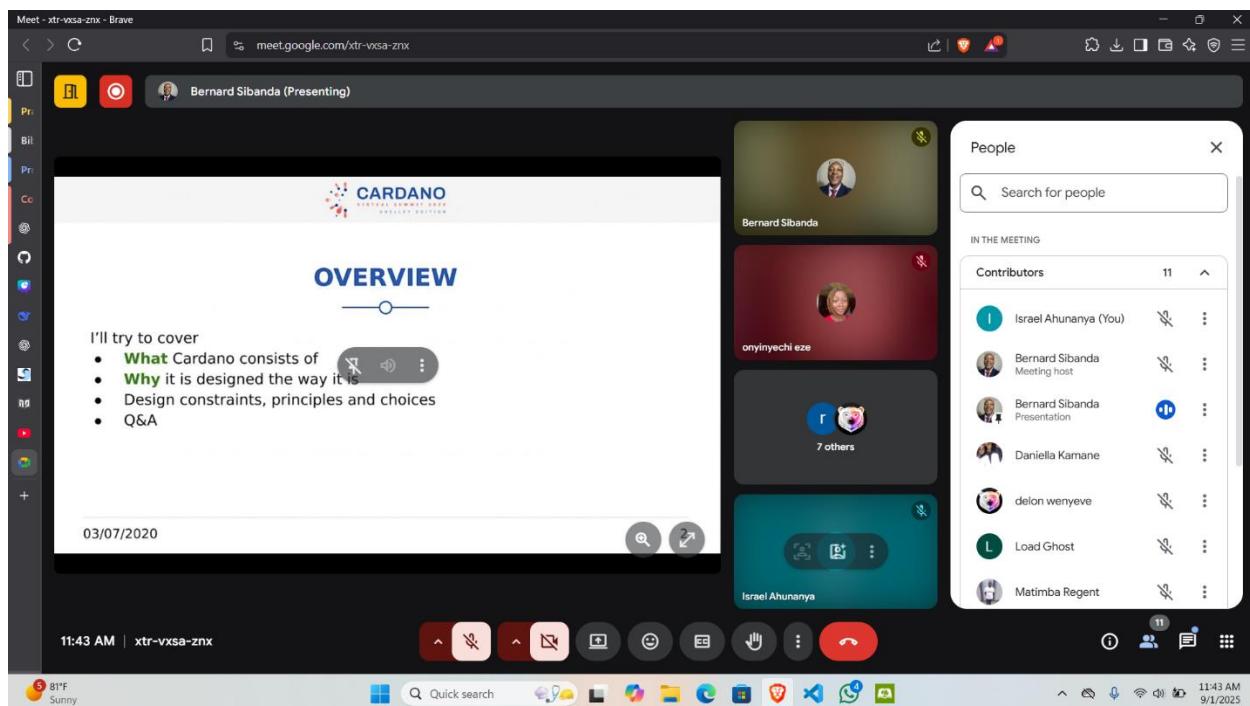
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# 1. Introduction

This report highlights the learning activities conducted with Richfield students as part of the Work Integrated Learning (WIL) program for September 2025. The focus this month was on advancing the students' understanding of Haskell and functional programming concepts, as well as exploring practical applications in blockchain development. Key topics covered included Monads, Exception Handling, File I/O, Lambda Expressions, and modular program design with Haskell. Through a mix of theoretical explanations, hands-on exercises, and guided projects, students were encouraged to apply these concepts to real-world programming challenges. This report provides an overview of the instructional approaches, the concepts explored, and the progress observed among the students throughout the month.

## 2. Meetings with Mr. Benard

### 2.1. Cardano Architecture and Semigroups

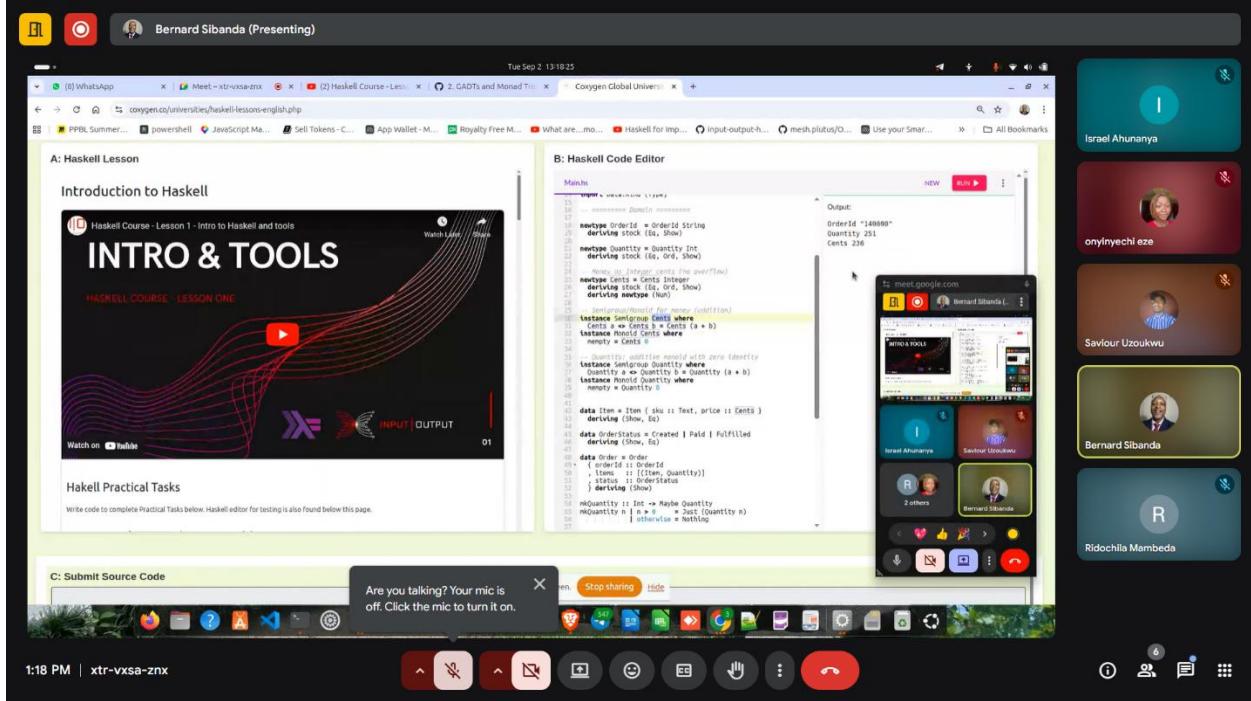


**Time:** 10:30

**Date:** 01/09/2025

**Summary:** On this day we dived into the Cardano architecture be saw the components of the cardano architecture. Not only that we also dived into creating a cart in haskell we tried at first to see how we can do it in javascript then we went to do it in haskell.

## 2.2. Using Semi-groups

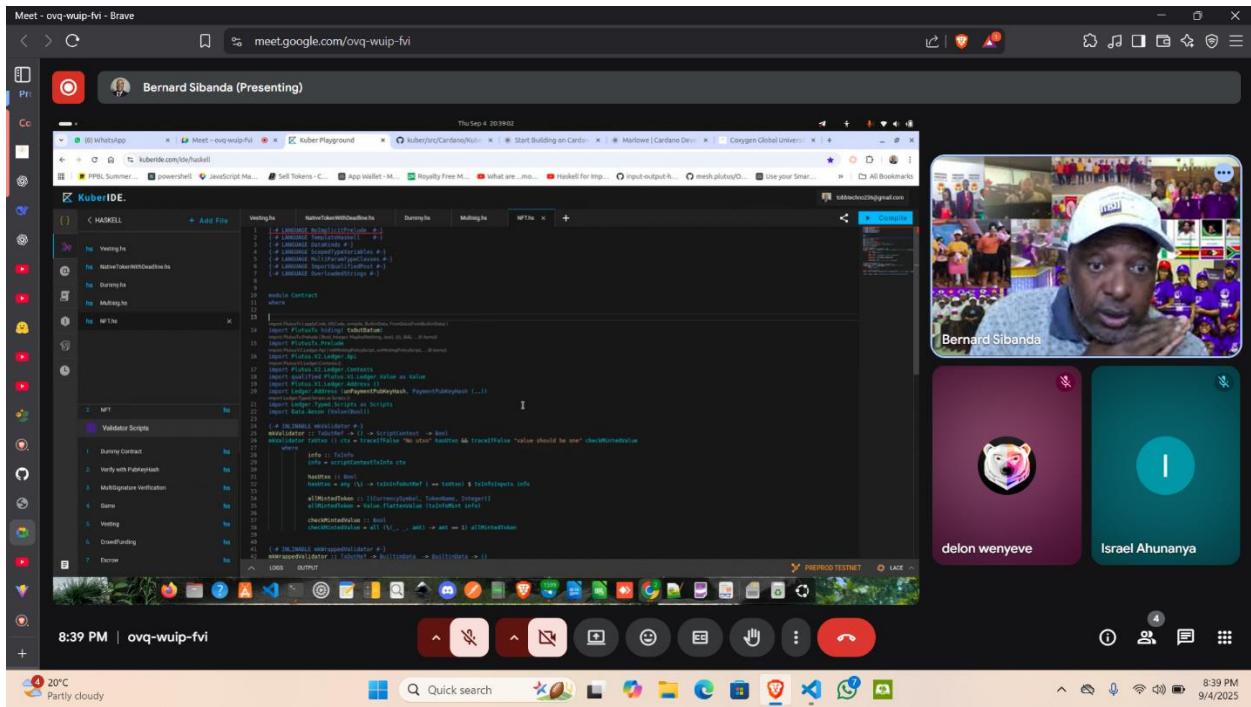


**Time:** 10:30

**Date:** 02/09/2025

**Summary:** On this day we dived into semigroups in Haskell and created instances of semigroups , in so doing we were able to implement semigroups on our cart data by combining data.

## 2.3. Stake pool Operator & smart contracts

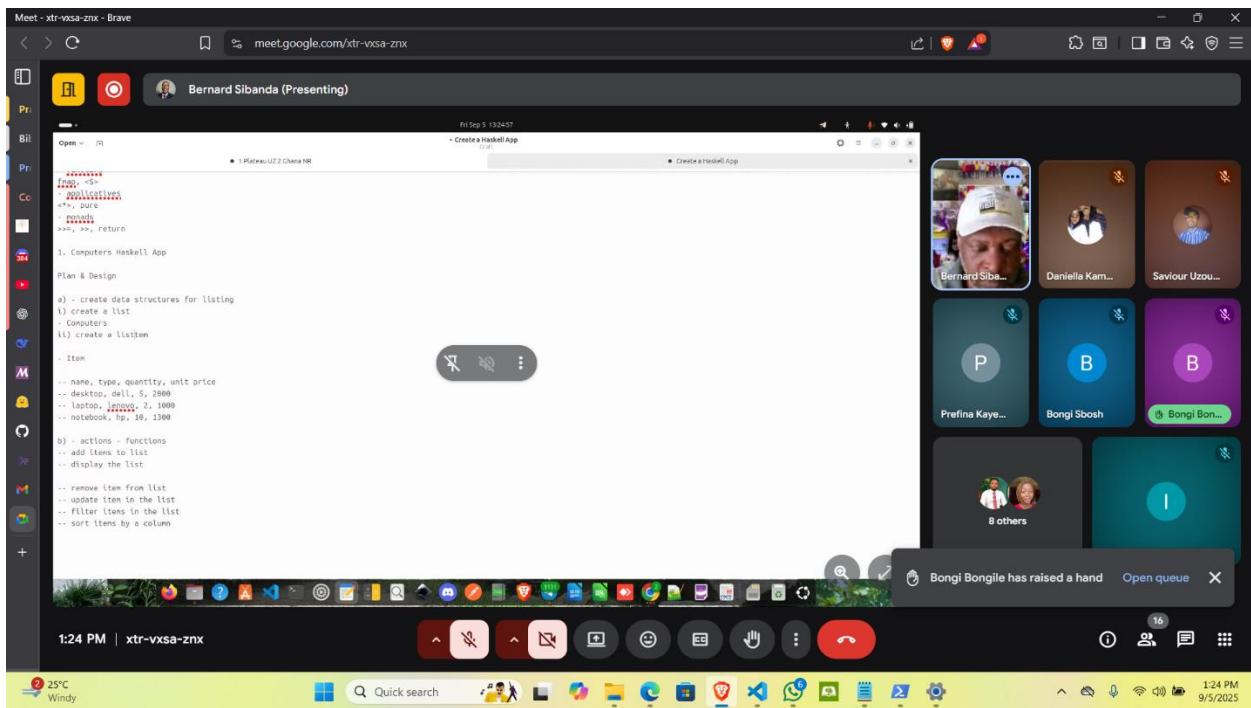


**Time:** 10:30

**Date:** 04/09/2025

**Summary:** On this day we dived in to what a stake pool is what a stake pool operator is and how it runs and we also went into working smart contracts in the kiber IDE web applications.

## 2.4. Design Planning in Haskell

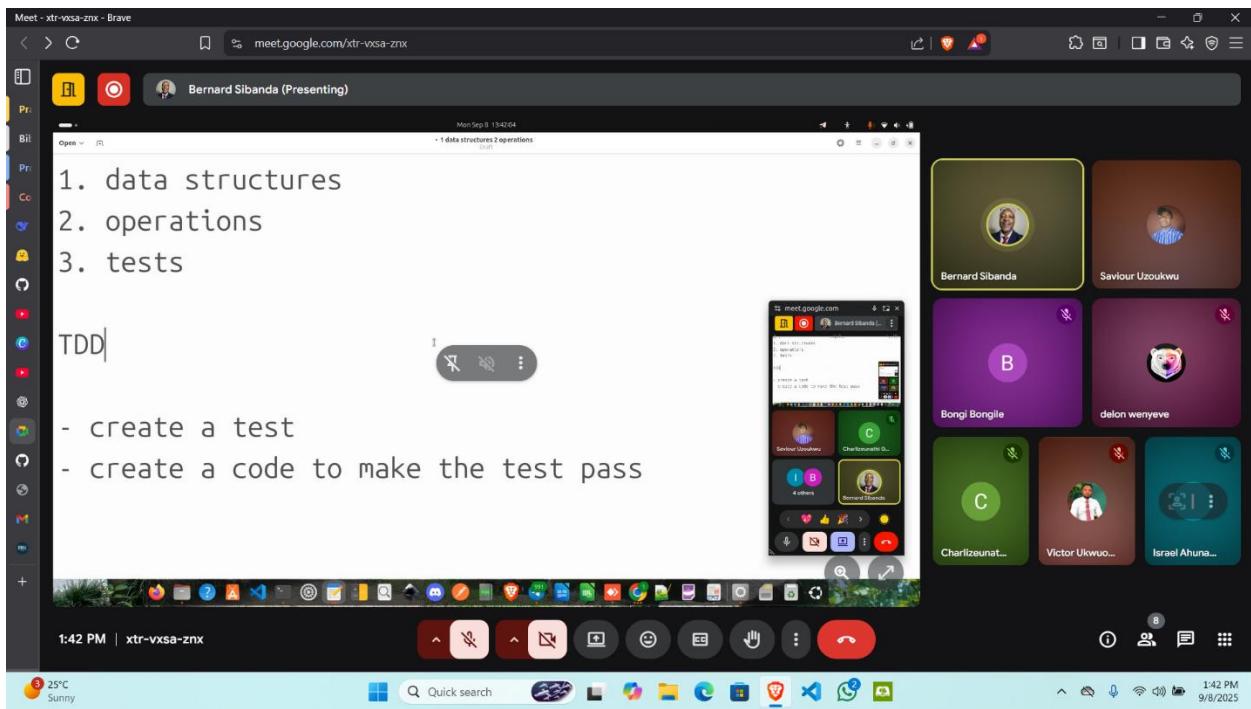


**Time:** 10:30

**Date:** 05/09/2025

**Summary:** On this Day Mr. Benard taught how we we should go about when we want to create a Haskell app from planning to designing the app and then developing the app .

## 2.5. Test Driven Development

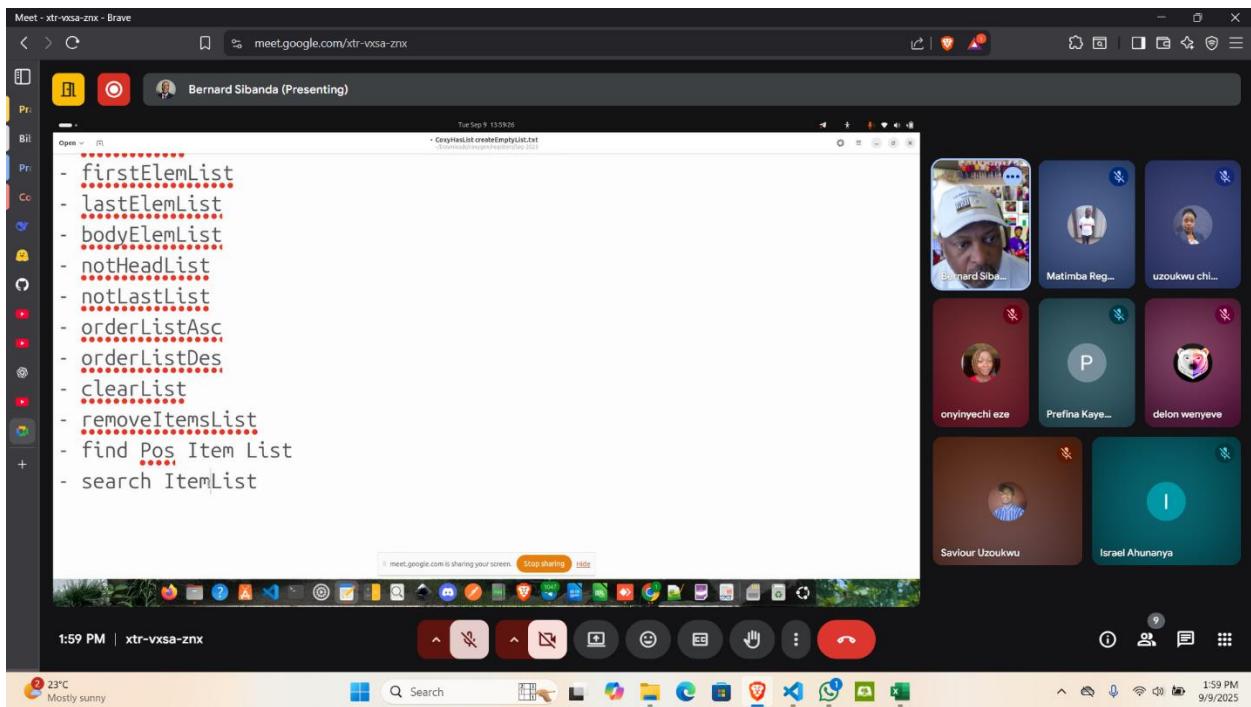


**Time:** 10:30

**Date:** 08/09/2025

**Summary:** Mr. Benard taught us what test driven development is and how to go about it. In doing so we created a function that checks if the result of a functions matched the expected result. If it does then it's a pass if doesn't then fail.

## 2.6. CoxyHasList

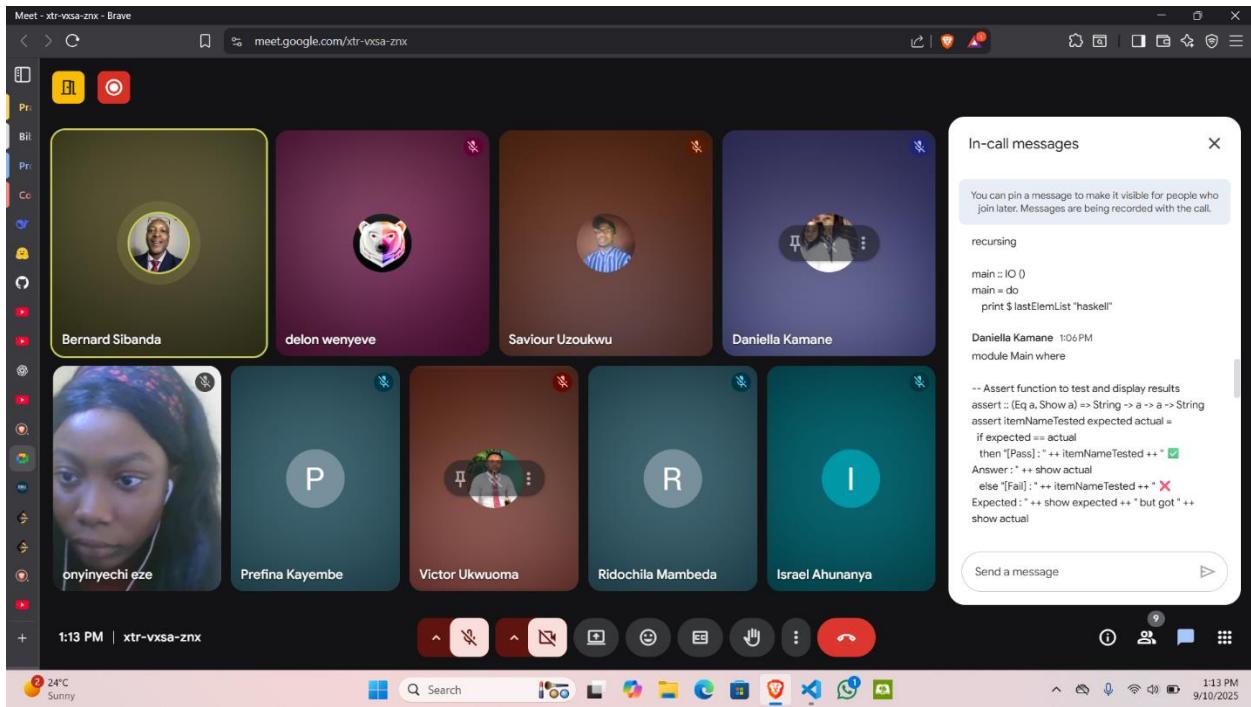


**Time:** 10:30

**Date:** 09/09/2025

**Summary:** On this day we created a CoxyHasList that has easy to use functions in other words help functions that allow for easy development of Haskell Apps.

## 2.7. Description of Functions

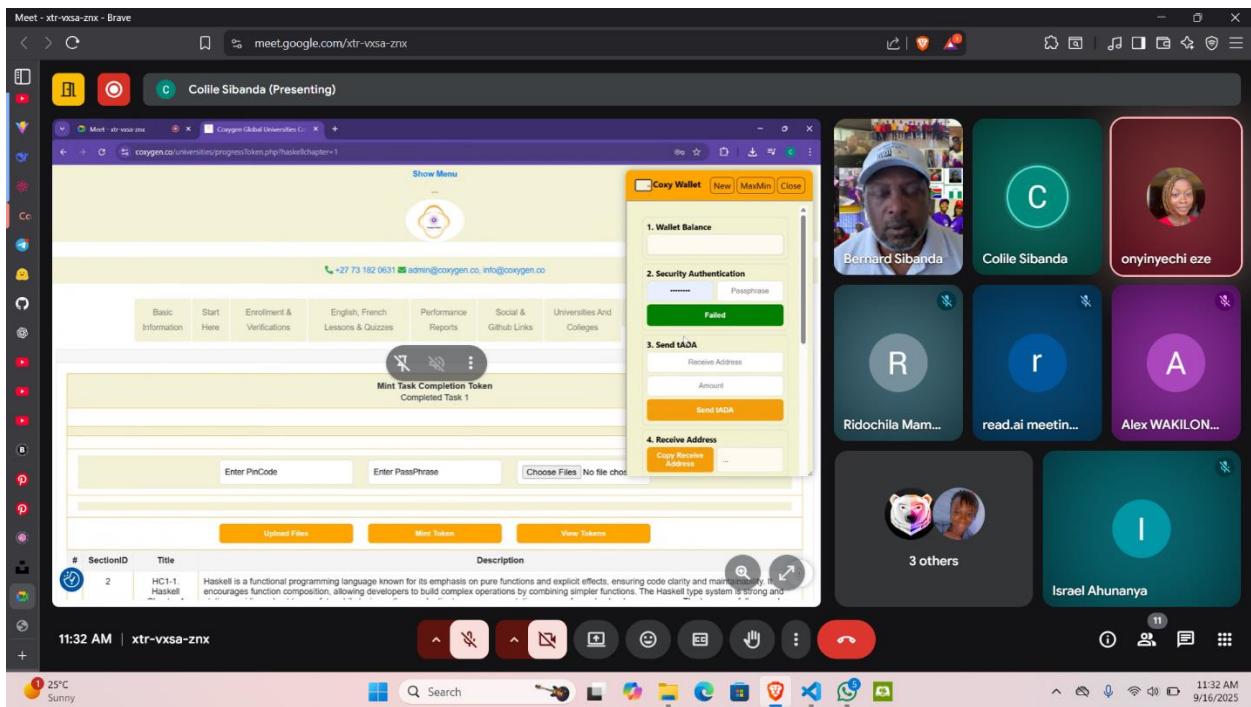


**Time:** 10:30

**Date:** 10/09/2025

**Summary:** we were given work to create functions for the CoxyHasList, and on this day we explained how the functions work.

## 2.8. Fixing A Bug

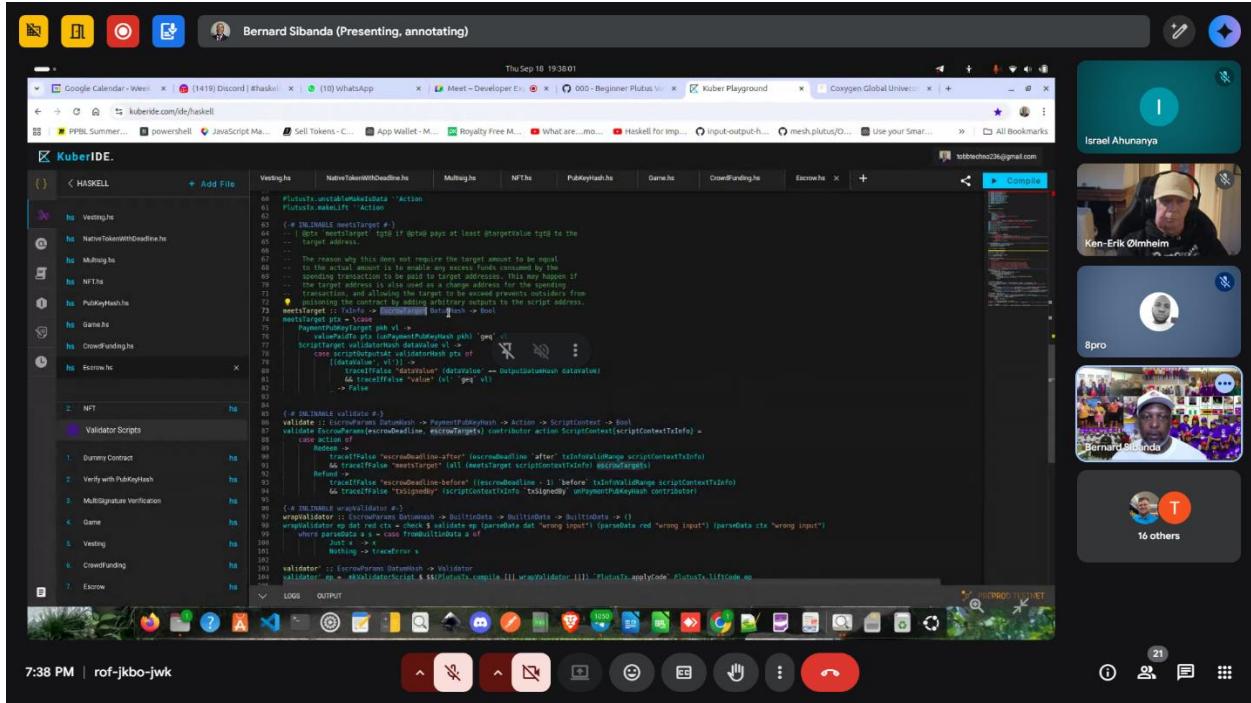


**Time:** 10:30

**Date:** 16/09/2025

**Summary:** On this Mr. Benard went about fixing a unique bug for Colile where he couldn't submit his work in the university app because of an incorrect format for his phone number even though he was already a registered student to the app.

## 2.9. Dev Ex WG

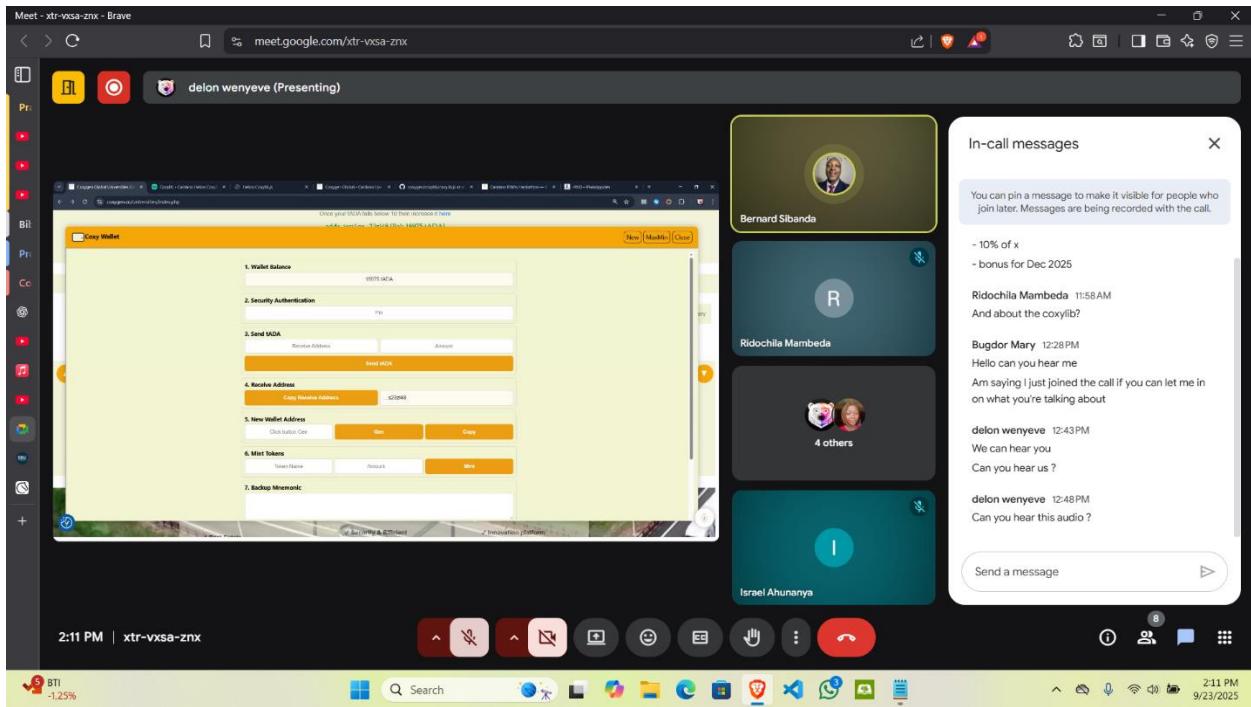


**Time:** 19:00 – 20:00

**Date:** 18/09/2025

**Summary:** On this day Mr. Benard went on to describe and explain the various haskell/plutus smart contracts that are in the KIBER IDE web application. Like he described what a validator is and the escrow smart contract is and how all the functions work.

## 2.10. Testimonial Discussion

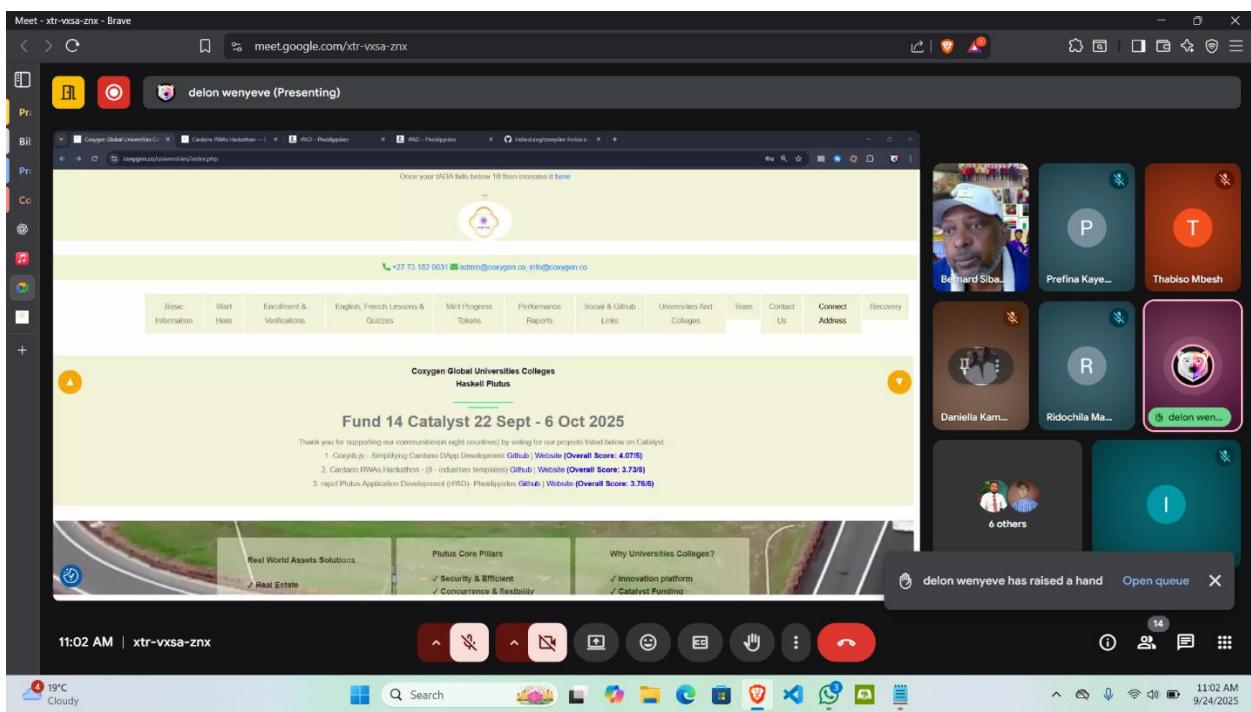


Time: 10:30

Date: 23/09/2025

**Summary:** On this day, we had a discussion on testimonials that need to be done for Coxygen on how far we have come since we have been in a Coxygen. Also he gave us work to go about coming up with a presentation for Fund 14 which was for the coxylib.js, the Cardano RWAs hackathon and the rapid Plutus Application Development.

## 2.11. Testimonial Readiness

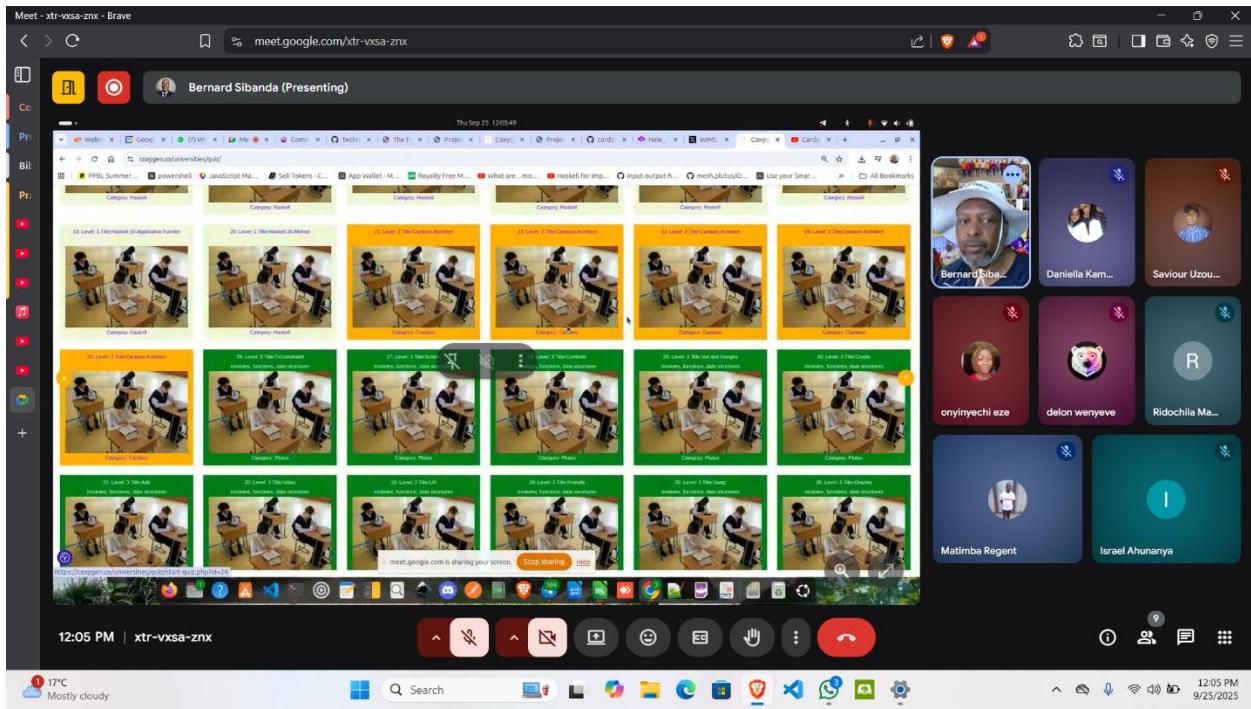


**Time:** 10:30

**Date:** 24/09/2025

**Summary:** We just went finding out if we were ready for the rehearsal that we were going to do on a Coalition Assembly Town Hall for the Asia-Africa Cardano Coalition (AACC)

## 2.12. Haskell/Plutus

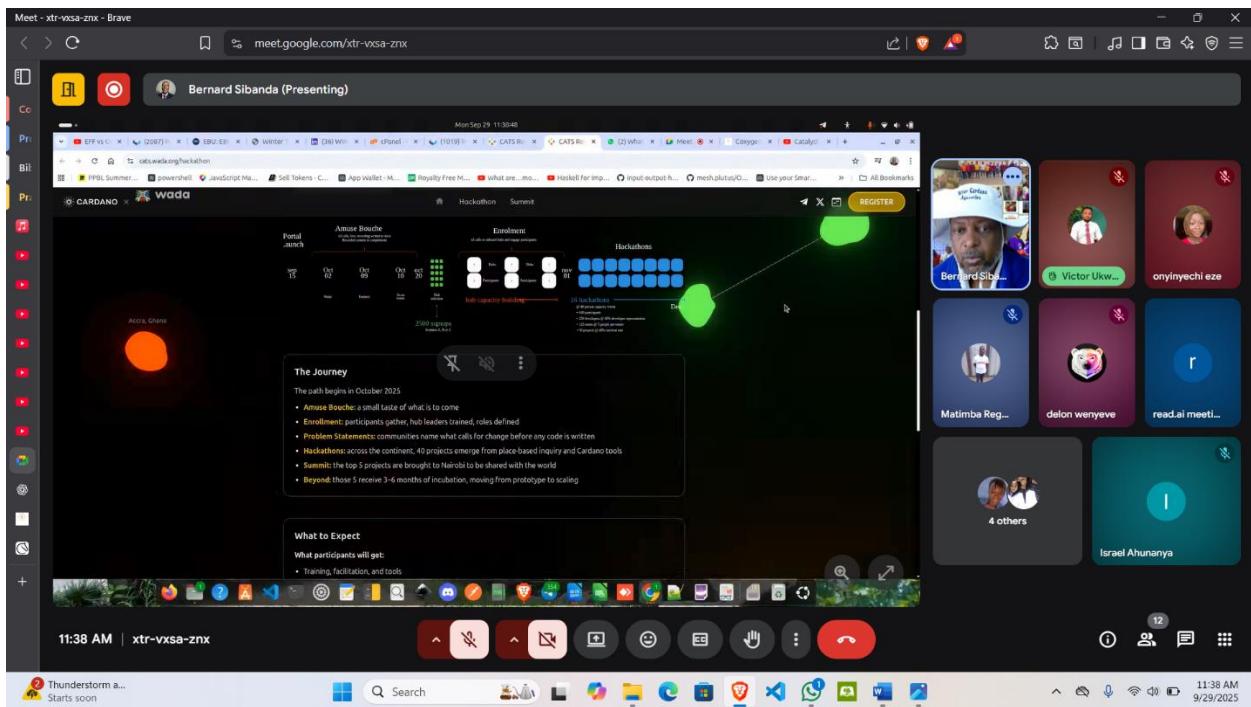


**Time:** 10:30

**Date:** 25/09/2025

**Summary:** We started off by first displaying the testimonial videos that was sent to Mr. Benard. Then Mr. Benard went about explaining the Plutus Context and the use of validator hash.

## 2.13. Social Presence and Cardano Africa Tech Summit



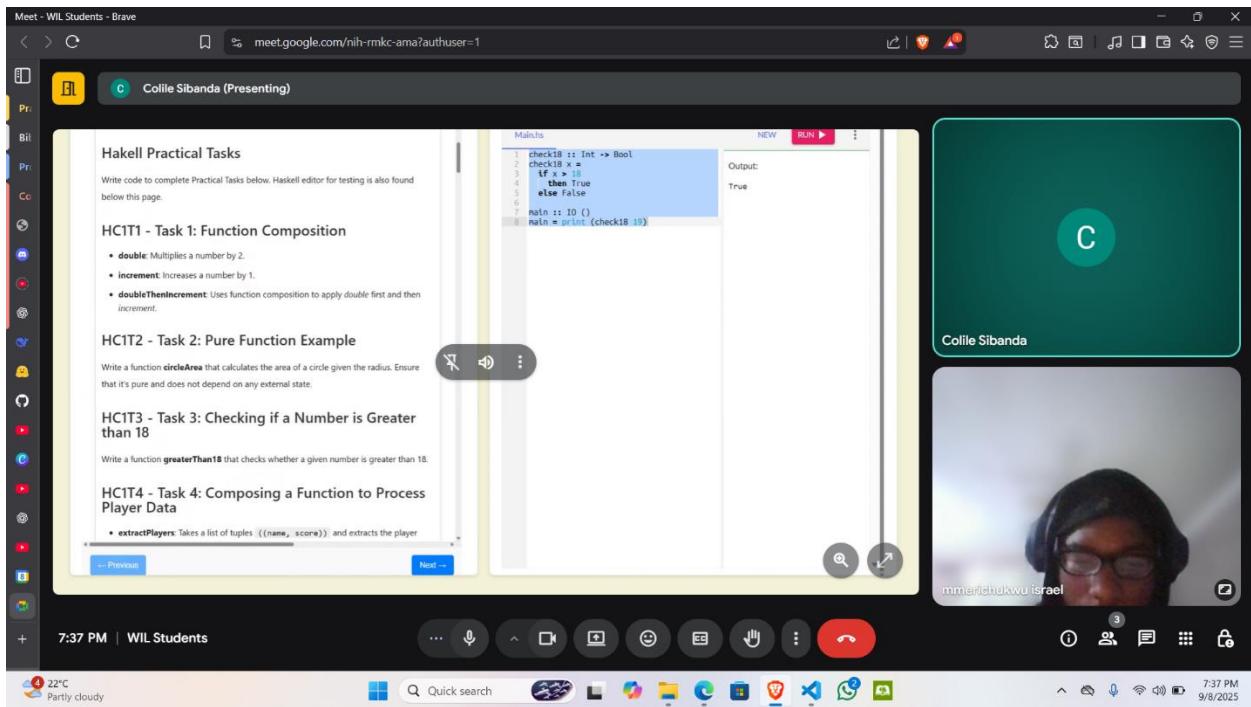
**Time:** 10:30

**Date:** 29/09/2025

**Summary:** We first went on to talk about the lack of presence we have in social media and how we can go about it then we discussed the Cardano Africa Tech Summit, we talked about its hackathon, what it will take to join and how of an opportunity it is.

### 3. WIL student Meetings

#### 3.1. Conditional Statement



**Time:** 19:00 – 20:00

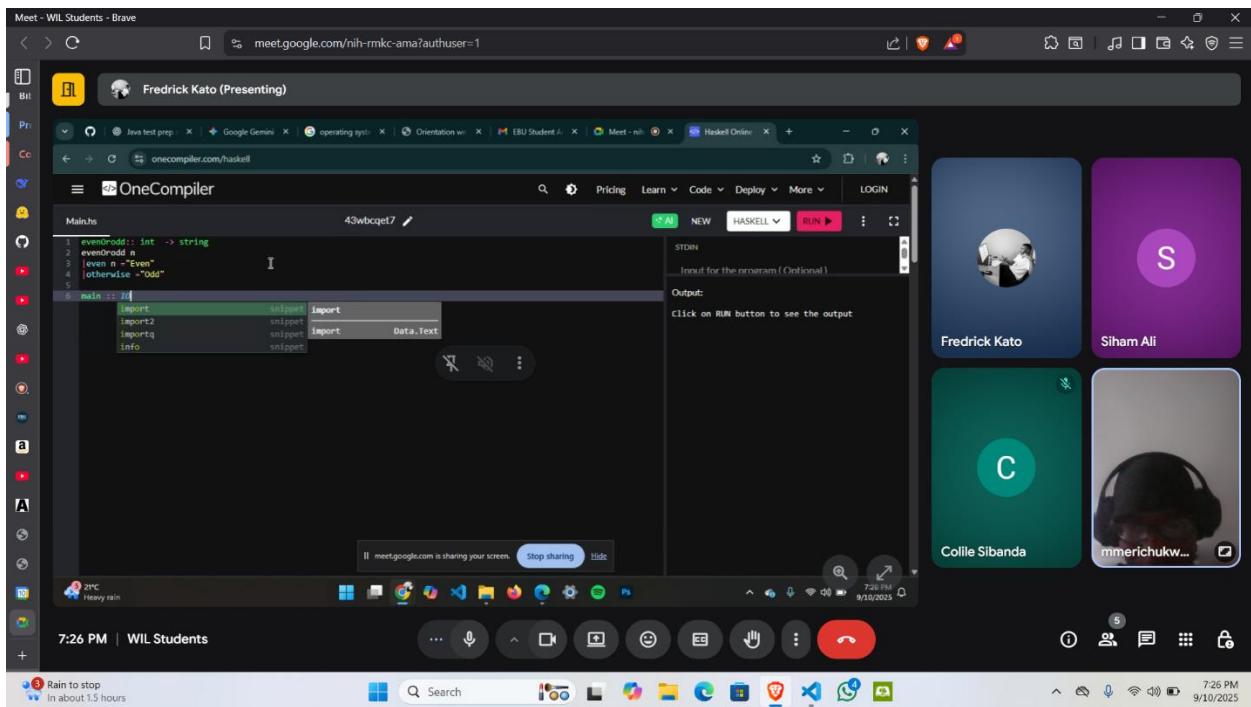
**Date:** 08-09-2025

**Attendance:** 1

**Expected Attendance:** 4

**Summary:** Had a discussion first on function signature how functions are created in Haskell and then we went on to talk about conditional statement in Haskell and we went on to a practical on conditional statement in Haskell.

### 3.2. Guards in Haskell



**Time:** 19:00-20:00

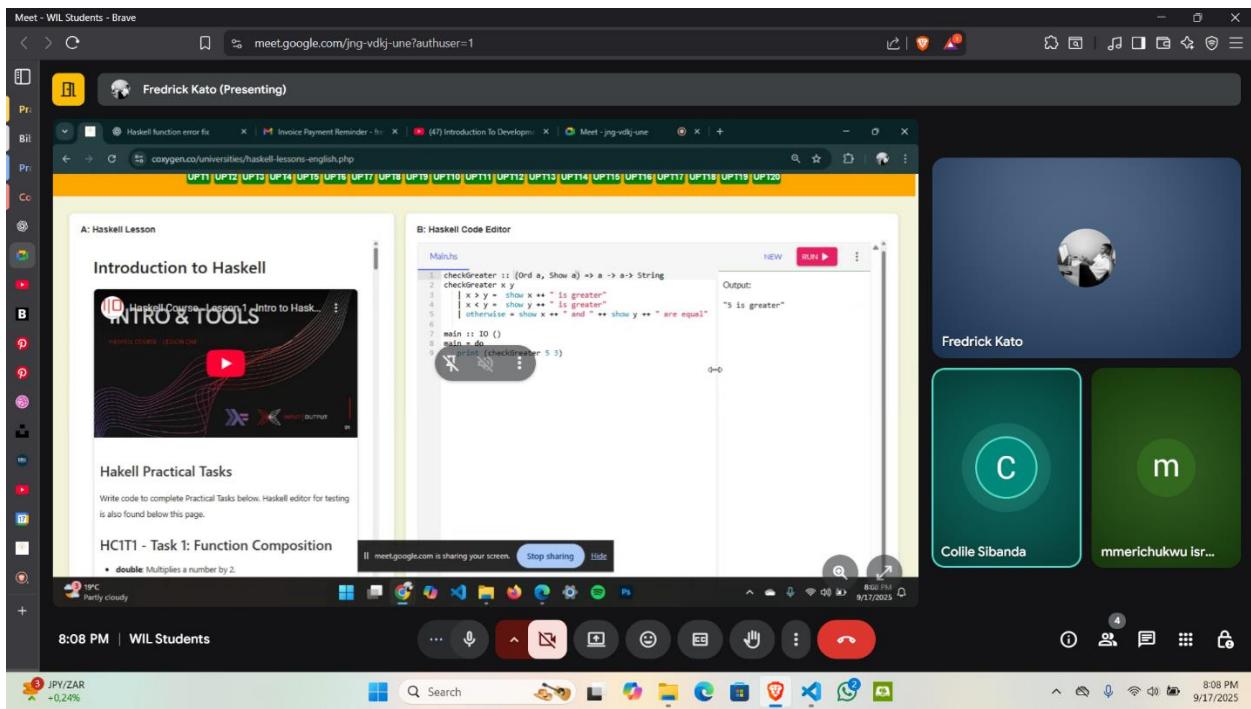
**Date:** 10/09/2025

**Attendance:** 3

**Expected Attendance:** 4

**Summary:** We went to discuss what guards are and then we went to do practical on how to use them in Haskell in this case the student are answering questions based on guards so they may know how to use them.

### 3.3. Type Classes in Haskell



**Time:** 19:00-20:00

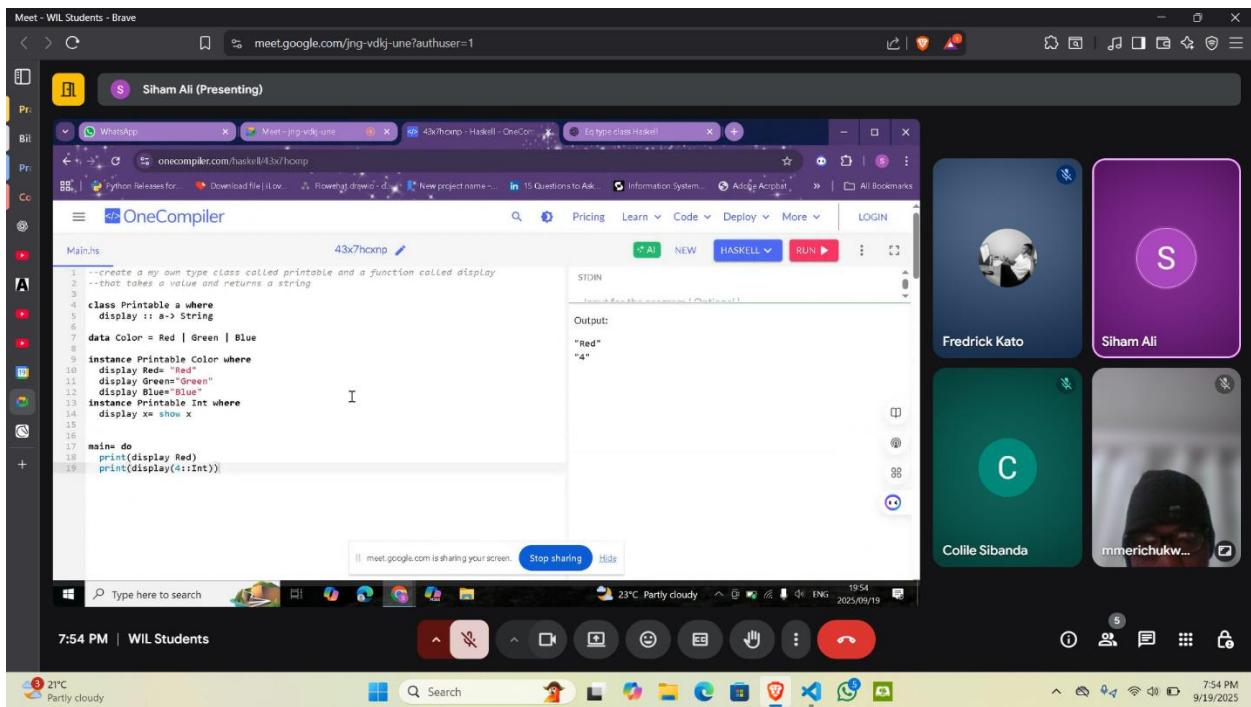
**Date:** 17/09/2025

**Attendance:** 2

**Expected Attendance:** 4

**Summary:** On this day, we talked about type classes in Haskell, which where the common type classes that are inbuilt in Haskell such as Ord, Eq and Num in Haskell. In learning I gave the students questions based on type classes to do, and we did it on this day.

### 3.4. Custom Type Classes and Instances



**Time:** 19:00-20:00

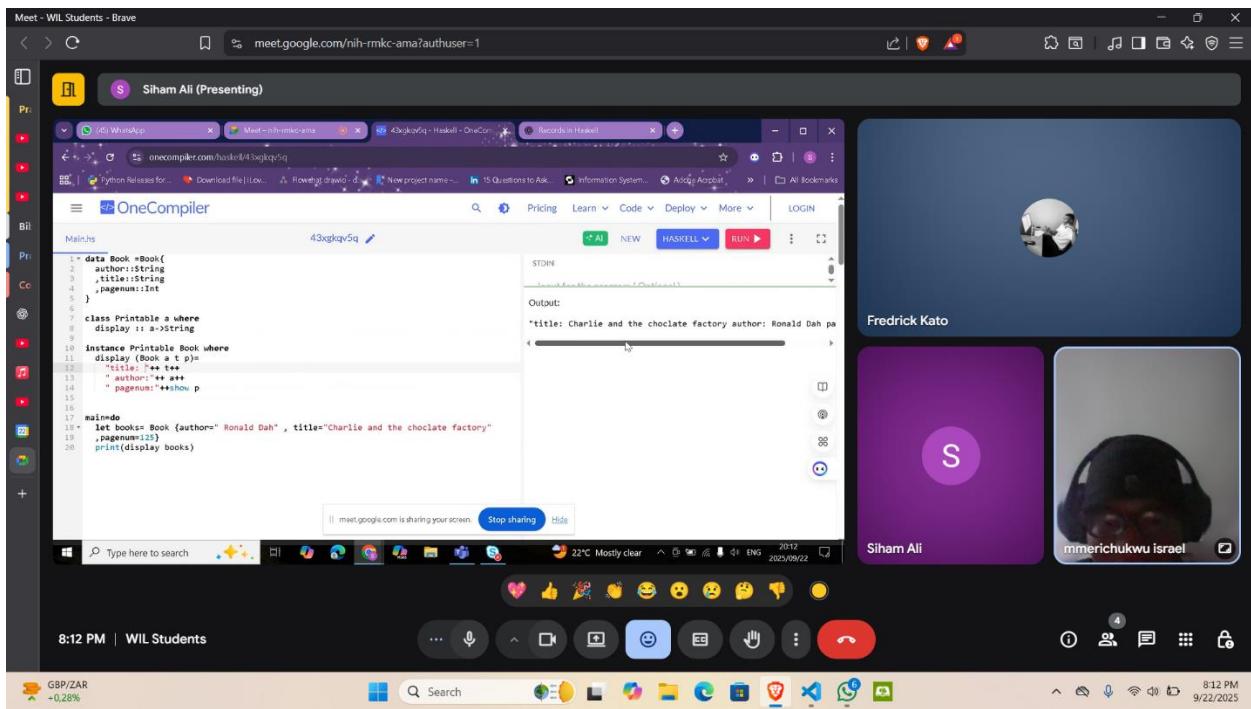
**Date:** 19/09/2025

**Attendance:** 3

**Expected Attendance:** 4

**Summary:** Upon learning what the common type classes are and how to use them we dived into creating our own type classes and creating instances for that type class. So on this day I gave them questions to solve use their own custom type of class Printable and how to use it with data types that where created.

### 3.5. Custom Type Class with Records



**Time:** 19:00 – 20:00

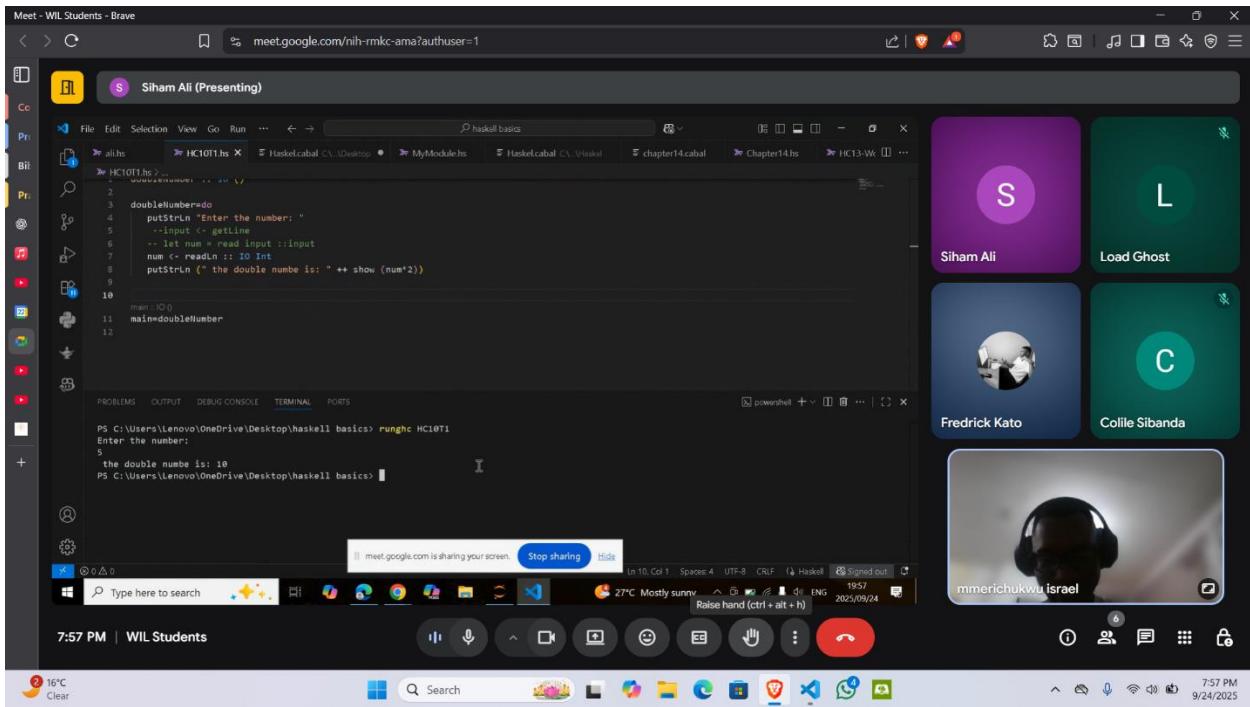
**Date:** 22/09/2025

**Attendance:** 2

**Expected Attendance:** 4

**Summary:** We continued Custom type classes and instances but this time we were about doing questions that have to do with records. I gave the students questions such that they will be able to print information of a record using custom type classes and instances to do them.

### 3.6. IO in Haskell



**Time:** 19:00 -20:00

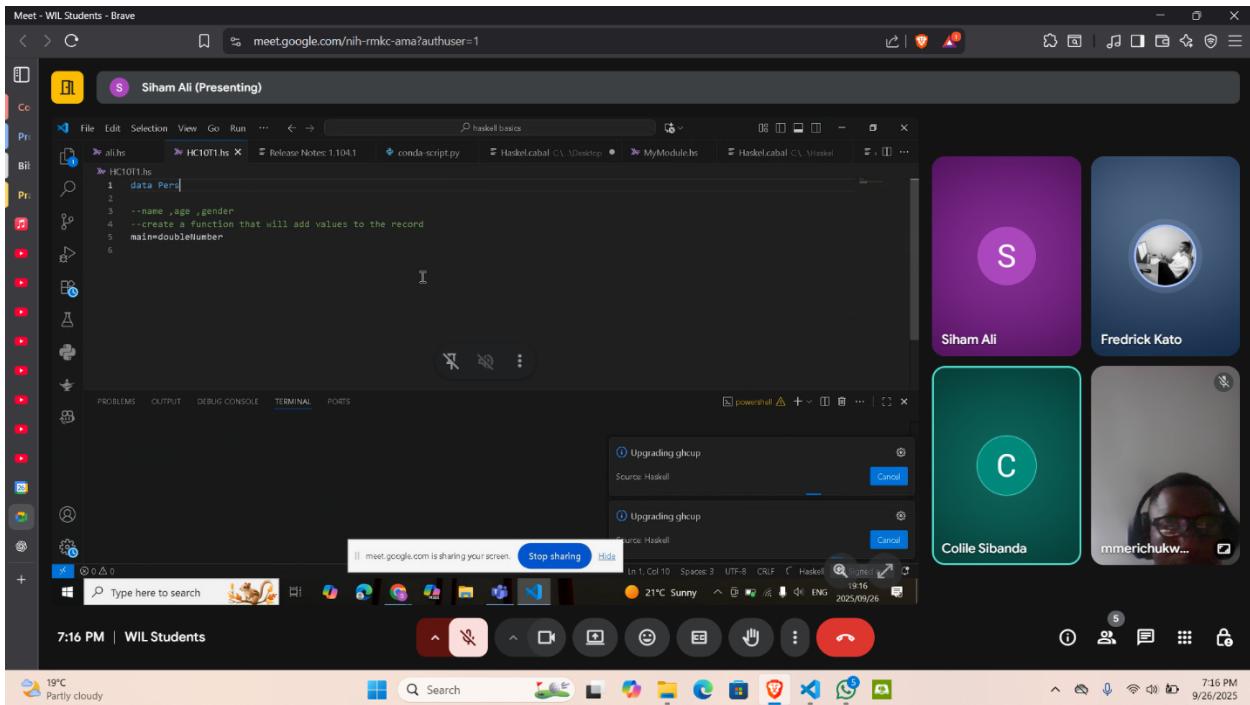
**Date:** 24/09/2025

**Attendance:** 4

**Expected Attendance:** 4

**Summary:** On this day we went on to talk about IO in Haskell how to get user input from a user and use the user the users input data. For example we worked on getting user input from a user which is a number than we user that number and doubled it.

### 3.7. IO Continued



**Time:** 19:00 -20:00

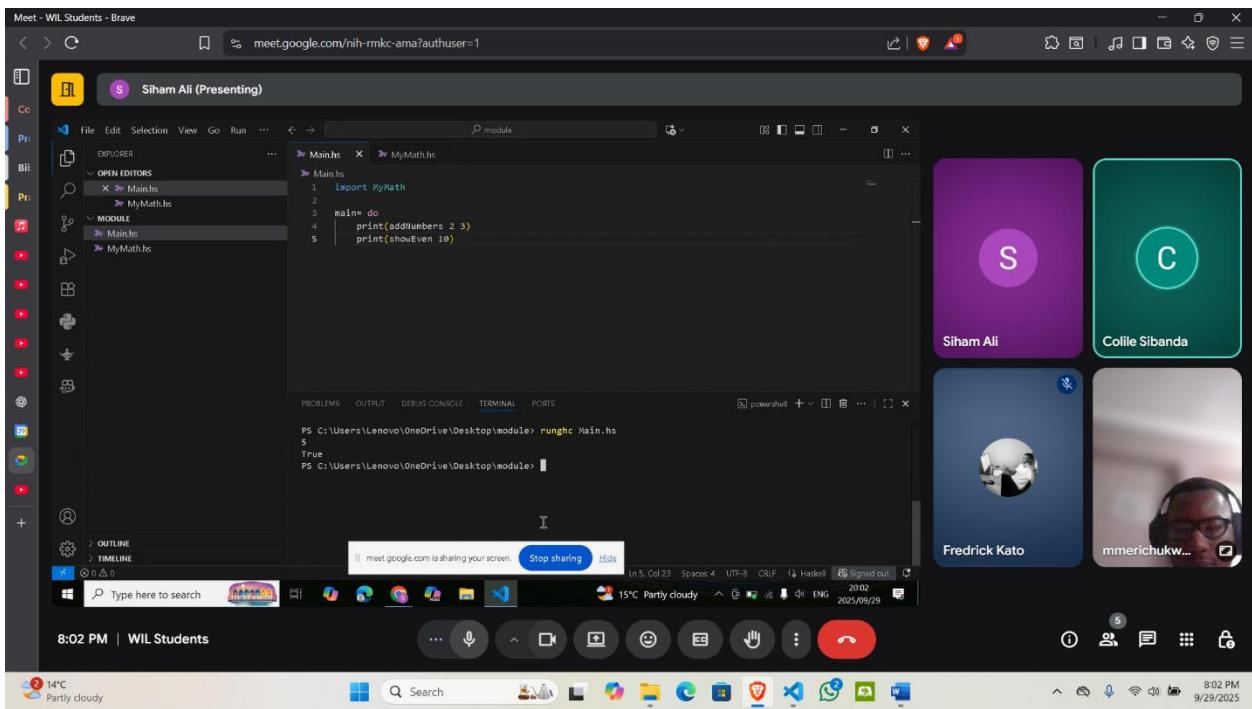
**Attendance:** 3

**Expected Attendance:** 4

**Date:** 26/09/2025

**Summary:** We continued with IO action in Haskell but this time I gave them questions that have to do with adding user input with records.

## 3.8. Modules



**Time:** 19:00-20:00

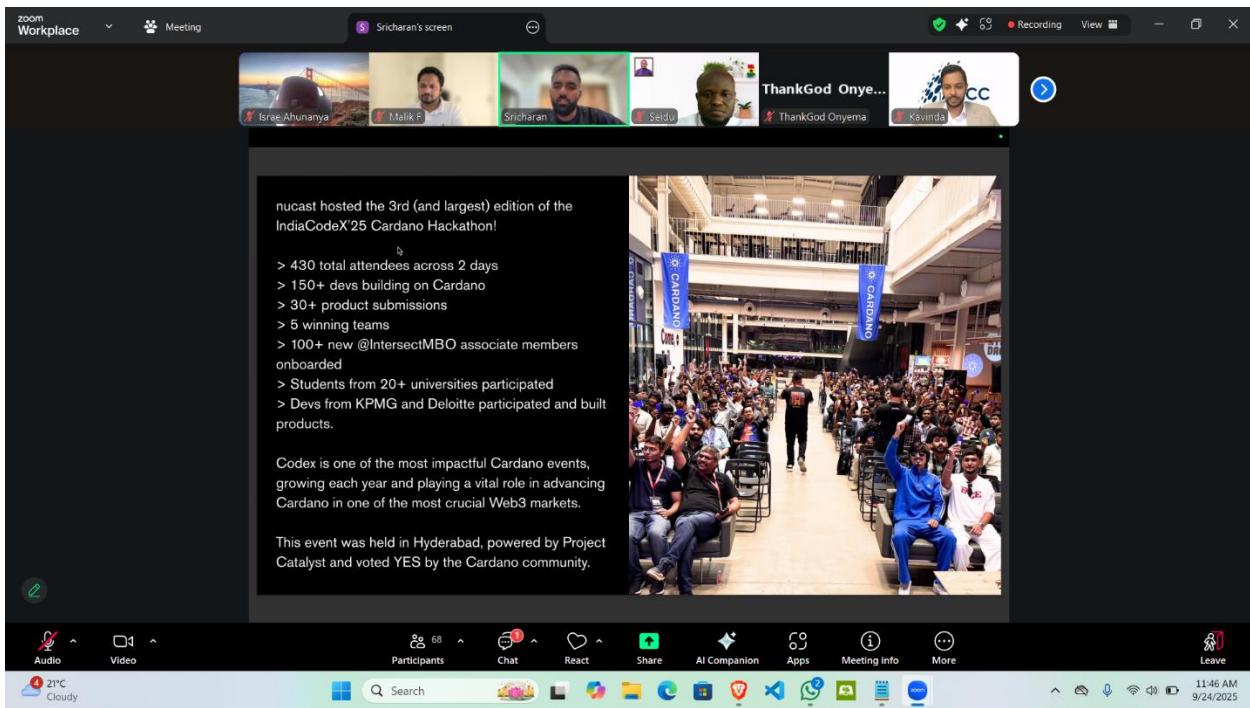
**Attendance:** 3

**Expected Attendance:** 4

**Date:** 29/09/2025

**Summary:** On this day we worked on modules. We learnt how to create modules and why we need them. Then we followed up with answering questions that will help us understand even more.

#### 4. Asia-Africa Cardano Coalition



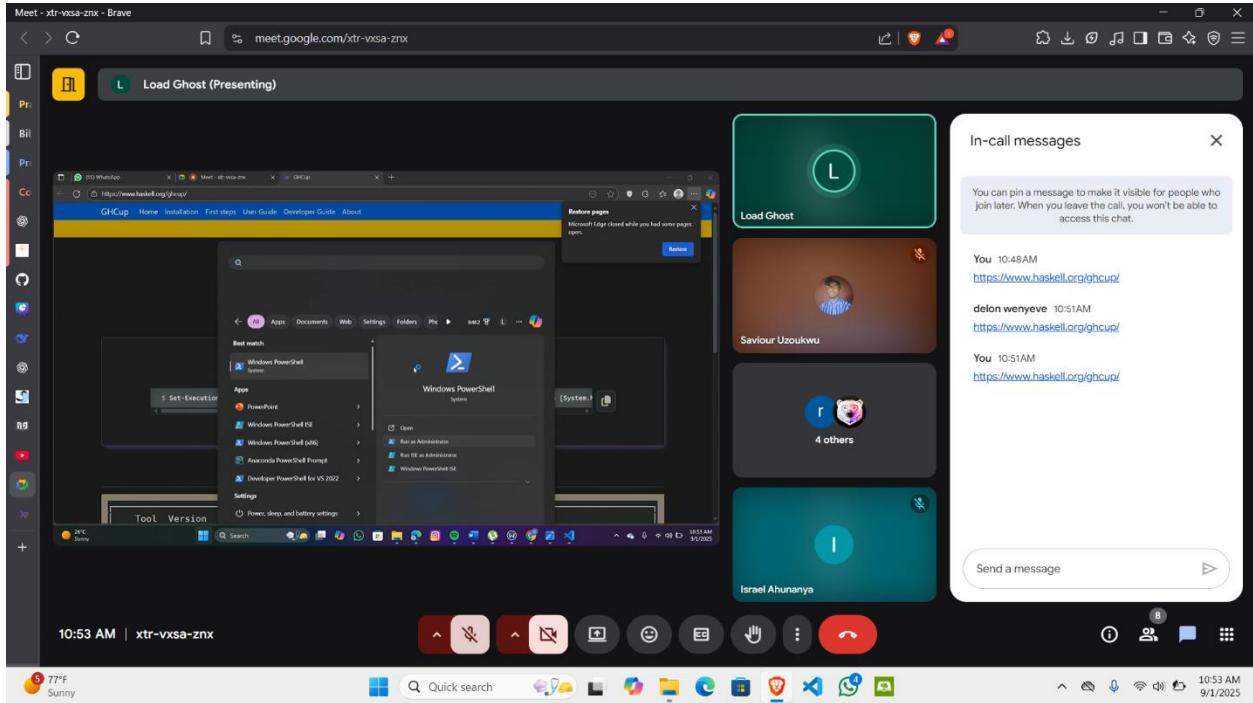
**Time:** 09:30

**Date:** 24/09/2025

**Summary:** Got a great opportunity to be in a meeting men and woman who are doing great things in the Cardano ecosystem. We got the opportunity to hear what they are doing in various representatives in places in Africa and Asia. Also has an opportunity to talk and to introduce my self and create awareness to invite universities to Coxygen.

## 5. Facilitator Meetings

### 5.1. Assisting to Install Haskell

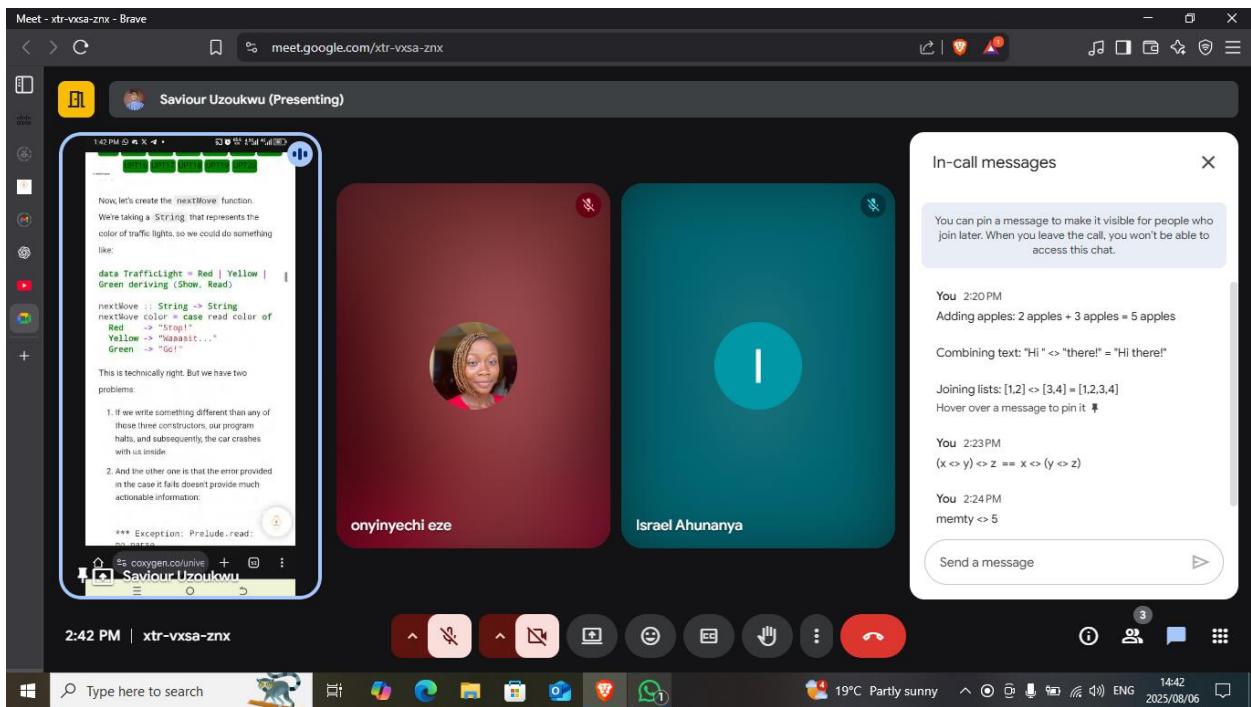


**Time:** 10:30

**Date:** 01/09/2025

**Summary:** We assisted Khaya a WIL student to install Haskell on his laptop and on VS Code

## 5.2. Todo-List and Vote Register



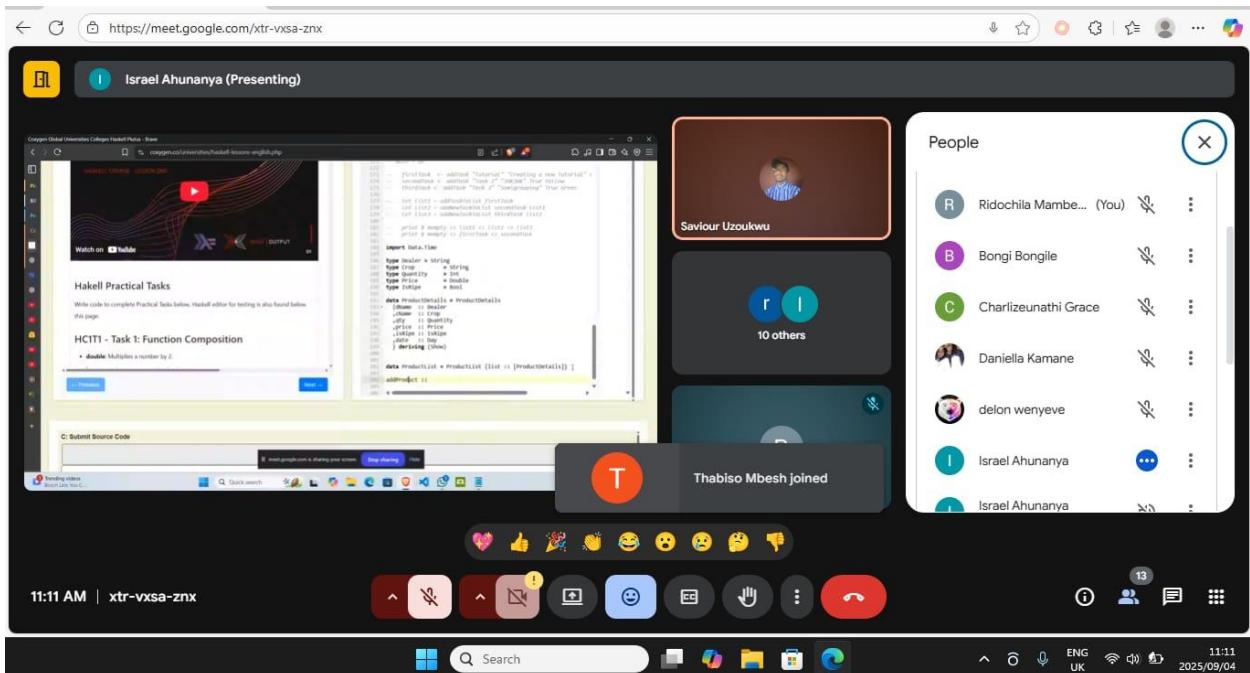
Time: 10:30

Date: 03/09/2025

**Summary:** we were given a task to do which was to build apps in Haskell and on this day we built a Todo list and a Vote Register

**Source Code:** <https://github.com/ahunanyalsrael/Todo-List-App.git>,  
<https://github.com/ahunanyalsrael/Voters-Register.git>

### 5.3. Farm Harvester



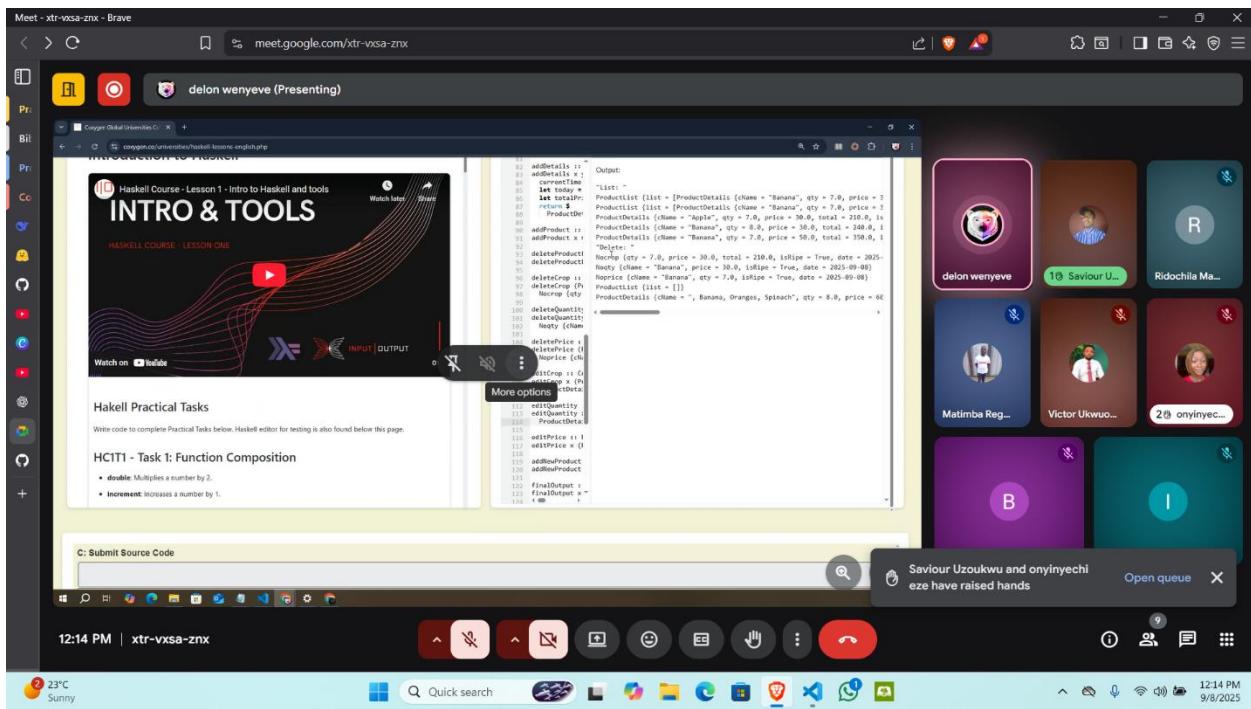
**Time:** 10:30

**Date:** 04/09/2025

**Summary:** We Created a Farm Harvester application in Haskell.

**Source Code:** <https://github.com/ahunanyalsrael/Farm-havester.git>

## 5.4. Saviour Code



Time: 10:30

Date: 08/09/2025

**Summary:** On this day, we went through savior code as he explained the changes that he made to the farm harvester app that would allow you to delete and edit crops.

## 5.5. Monads

The screenshot shows a Haskell development environment with the following details:

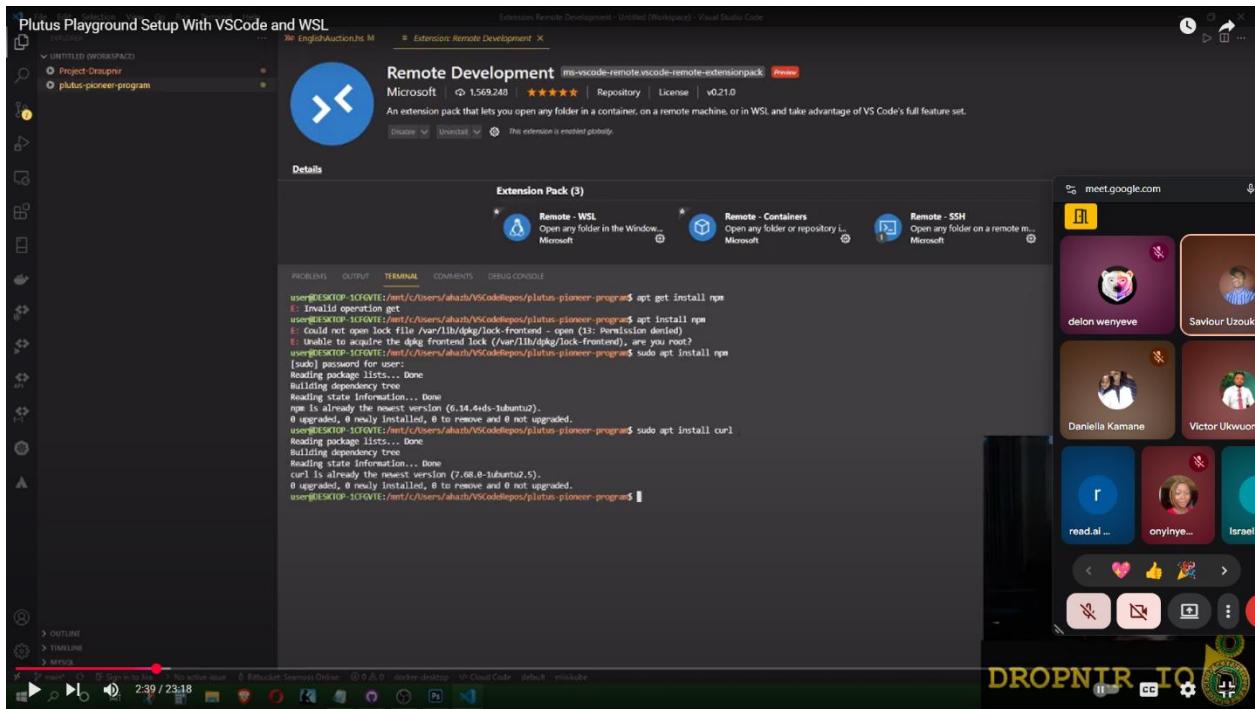
- File Explorer:** Shows a folder named "MONADS" containing "monads.hs".
- Code Editor:** Displays the contents of "monads.hs". The code defines a function "example3" that prompts for an age and prints a message. It uses the "Control.Monad.RWS.CPS" module for state manipulation.
- Terminal:** Shows the command `runghc monads.hs` being run, followed by the output: "Enter your name: Israel Ahunanya" and "Hello, Israel Ahunanya".
- OS Status Bar:** Shows the date and time as 9/15/2025, 12:21 PM.
- Background:** A Google Meet window is visible, showing multiple participants including "Israel Ahunanya".

**Time:** 10:30

**Date:** 15/09/2025

**Summary:** On this day we went through monads. We tried to figure out what monads are and how we can use them in our code

## 5.6. WSL



**Time:** 10:30

**Date:** 19/09/2025

**Summary:** We helped Daniella to install WSL in her computer.

## **6. Conclusion**

September 2025 was a highly productive period marked by continued technical growth and increased student engagement. Students demonstrated a deeper understanding of Haskell's advanced features, including IO, modules, and Type Classes, and applied these skills in practical exercises. The structured approach combining theory and hands-on practice enabled students to strengthen their problem-solving abilities and programming proficiency. While attendance at some sessions varied, the quality of participation and learning outcomes remained strong. Overall, the month reflects a positive trajectory in both technical skill development and readiness for more complex programming challenges in Haskell and blockchain applications.