PREREQUISITES

The system can be accessed at: localhost, Once on the website, MetaMask must be installed on the user's machine; the user must enable usage with test networks in order to use the Sepolia Test Network. To do so, the user can click on their MetaMask extension and click on the top-right drop down. Then the user must toggle "Show Test Networks" and click on Sepolia.

Once MetaMask has been chosen to run on the Sepolia Test Network, the system can be used. In order to properly use the system and carry out blockchain activities, the user must have some balance in their Sepolia Wallet which can be received from any Sepolia faucet or the user can import this wallet ID that has Sepolia Wallet balance to conduct UAT:

"8cadb1827a6dc51a9189c436712e499c8c433ceb2fb81c59f33acdc2b7712eda"

To do so, the user must click on MetaMask, go to the accounts at the very top and click "Add account or hardware wallet" then "Import Account:" and paste the private key.

The account tied to this blockchain ID/MetaMask wallet is an admin account. The credentials to log into the account tied with this blockchain ID are:

- Email: " admin_test@gmail.com "
- PW: " 12345678 "

Step-by-step Module Usage Guide

Description		
User Authentication Module		
Users can register a new account by entering their email, password and confirm password. They must also have MetaMask connected on the right blockchain network (Sepolia Test Network). The email and current MetaMask wallet/blockchain ID must not exist in the Firestore database beforehand. Guidance: 1. Click "Don't have an account?". 2. Input required data and click on the "Sign Up" button. Expected Result: An alert pops up "Successfully signed up. Please Login."		
Users can login by entering their email and password. They must also have the blockchain ID they registered with currently active and selected on MetaMask.		

Guidance:

1. Input email and password
2. Click on the “Login” button.

Expected Result:

Successful login and redirected to the home dashboard.

Users can use the password recovery mechanism to change their password.

Guidance:

1. Click on “Forgot Password?”
2. Enter a valid email
3. Head to email in box
4. Click on password recovery link
5. Change password

Expected Result:

Users receive a password recovery email with a link to password recovery.

Profile and Registration Module

Users can view their personal information at the Profile page.

Guidance:

1. Click on “Profile” at the dashboard or click on “Profile” at the top navbar or bottom footer.

Users are able to update their personal information such as Department, Level of Study, phone number and profile picture.

*For UAT purposes, it is recommended to choose “Computer System and Network” as the department and “Bachelor” as the Level of Study as courses related to this department’s level of study have already been pre-created.

Guidance:

1. At the “Profile” page.
2. Click on the “Edit” button.
3. If users click on “Choose file” they can select a valid image file and click “Upload” to save. Users must first click on “Upload” before saving to ensure that the image is set properly.
4. In order to edit their phone numbers users must input a valid 10 digit phone number before clicking save.
5. After making changes, the user should press save.

Expected Result:

1. For image uploads: “Picture saved successfully”.

2. Changes can be seen at their profile page.		
Users are able to register for courses. In order to do so, the user must fill in the Department and Level of Study fields. *For UAT purposes, it is recommended to choose “Computer System and Network” as the department and “Bachelor” as the Level of Study as courses related to this department’s level of study have already been pre-created. Guidance: 1. At the “Profile” page. 2. Click on “Course Registration” 3. Refer the list of courses 4. Click on “Select Courses” 5. Choose courses and click “Save” 6. At the popup, click on “Proceed” Expected Result: Users are redirected, at the Profile page users can see their Taken Courses		
<u>Attendance Module</u>		
Users can attend courses that they registered for. Guidance: 1. Click on “Attendance” at the dashboard or click on “Attendance” at the top navbar or bottom footer. 2. Users can see available classes and click on one that they wish to attend. 3. After confirming the details, scroll down and click on Attend. 4. Accept the MetaMask notification. To view past attendance, users can click on “Expand Past Classes”. In the case that two MetaMask notifications appear, users should only accept one.		
<u>Student Aide Module</u>		
Users can request for student aid. Guidance: 1. Click on “Student Aide” at the dashboard or click on “Student Aide” at the top navbar or bottom footer. 2. Users can see available aides and click on one that they wish to request. 3. After confirming the details, scroll down and click on Request Aide. 4. Accept the MetaMask notification. Users can then expect a reply via email. To view unavailable aides, click on “Expand Unavailable Aides”. These aides are either expired or full. In the case that two MetaMask notifications appear, users should only accept once.		

Library Module

Users can borrow books

Guidance:

1. Click on “Library” at the dashboard or click on “Library” at the top navbar or bottom footer.
2. Users can see available books and click on one that they wish to borrow.
3. After confirming the details, scroll down and click on Borrow Book.
4. Accept the MetaMask notification.
5. To view unavailable books, click on “Expand Unavailable Books”. These books are either being borrowed or unavailable and will be made available as soon as the admin marks them available.

History Module

Users can view their past transactions on the blockchain network.

Guidance:

1. Click on “History” at the dashboard or click on “History” at the top navbar or bottom footer.
2. Users can click on each individual transaction to view more information on Etherscan.

Expected Result:

Users are able to view their past transactions from newest to oldest.

FAQ Module

Users can view the FAQ page for guidance on the system

Guidance:

1. Click on “FAQ” at the dashboard or click on “FAQ” at the top navbar or bottom footer.

Admin Module

In order to use the Admin module, users must be made an admin, which is upon request and by another admin.

Guidance:

1. Head to the dashboard
2. Click on “Switch to Admin View”

*Subsequent modules from this point require admin rights, if normal users try to access these modules, they will be redirected and logged out.

<u>Admin Library Module</u>

Admins can create books.

Guidance:

1. At the admin dashboard click on “Create Book”.
2. Admins must then fill in the required fields.
3. For image uploads, users need to click on “Choose file” and they can then select a valid image file and click “Upload” to save. Users must first click on “Upload” before saving to ensure that the image is set properly.
4. Click on “Create Book”.
5. Accept the MetaMask request. In the case that two MetaMask notifications appear, the admin should only accept one.

Expected Result:

The admin can see created books by heading to the “Library Management” tab and then Expanding Available Books.

Admins can mark books unavailable.

Guidance:

1. Head to the “Library Management” tab.
2. Click on “Expand Available Books”.
3. Click on the book to be made unavailable.
4. Click on “Mark book unavailable”.
5. Accept the MetaMask request. In the case that two MetaMask notifications appear, the admin should only accept one.

Admins can mark books as returned.

Guidance:

1. Head to the “Library Management” tab.
2. Click on the book to be marked as returned.
3. Click on “Book returned”.
4. Accept the MetaMask request. In the case that two MetaMask notifications appear, the admin should only accept one.

<u>Admin Attendance Module</u>

Admins can create classes. Guidance: 1. At the admin dashboard click on “Create Attendance”. 2. Admins must then fill in the required fields. 3. For image uploads, the admin needs to click on “Choose file” and they can then select a valid image file and click “Upload” to save. The admin must first click on “Upload” before saving to ensure that the image is set properly. 4. Click on “Create Attendance”. 5. Accept the MetaMask request. In the case that two MetaMask notifications appear, the admin should only accept one. Expected Result: The admin can see created classes by heading to the “Course Management” tab under the Open Classes.		
Admins can close class sessions. Guidance: 1. Head to the “Course Management” tab. 2. Click on the class to close. 3. Click on “Close”. 4. Accept the MetaMask request. In the case that two MetaMask notifications appear, the admin should only accept one. Expected Result: The admin will no longer see that class session under the open classes. If the admin clicks on “Expand closed classes”, they can see the closed class. *It is important to note that classes are differentiated by their names and weeks.		
Admins can retrieve the email addresses of attendees for closed classes. Guidance: 1. Head to the “Course Management” tab. 2. Click on the class that the admin wants email addresses for. 3. Click on “Copy to Clipboard”. Expected Result: A pop up will appear that notifies the admin “Emails copied to clipboard!”		
<u>Admin Student Aide Module</u>		

<table>
<tr><td>Admins can create student aides.

Guidance:
1. At the admin dashboard click on “Create Aide”.
2. Admins must then fill in the required fields.
3. For image uploads, the admin needs to click on “Choose file” and they can then select a valid image file and click “Upload” to save. The admin must first click on “Upload” before saving to ensure that the image is set properly.
4. Click on “Create Aide”.
5. Accept the MetaMask request. In the case that two MetaMask notifications appear, the admin should only accept one.

Expected Result:

The admin can see created classes by heading to the “Aide Management” tab and expanding Available Aides.</td><td></td><td></td></tr>
<tr><td>Admins can close student aides.

Guidance:
1. Head to the “Aide Management” tab.
2. Click on “Expand Available Aides”
3. Click on the aide to close.
4. Click on “Close This Aide”.
5. Accept the MetaMask request. In the case that two MetaMask notifications appear, the admin should only accept one.

Expected Result:

The admin will no longer see that Aide under the available aides. The Aide will now appear under Aides to Approve.

*It is important to note that aides must be manually closed by admins on the date of expiry.</td><td></td><td></td></tr>
<tr><td>Admins can retrieve the email addresses of requesters for closed aides.

Guidance:
1. Head to the “Aide Management” tab.
2. Click on the student aide that the admin wants email addresses for.
3. Click on “Email Users”.</td><td></td><td></td></tr>
<tr><td colspan="3"><u>Admin History Module</u></td></tr>
<tr><td>Admins can view attendance, aide, library and individual user history.

Guidance:</td><td></td><td></td></tr>
</table>

1. At the admin dashboard click on “Module History” or click on “History” either at the top navbar or bottom footer.
2. Admins can click on the respective history to view.
3. At the respective history page, admins can see the past transactions related to the module’s contract from newest to oldest.
4. For individual user history, an admin can key in a blockchain ID associated with a certain user to view all their activities on the network.

Account Creation Module

Admins can create a user or admin account.

Guidance:

1. At the admin dashboard click on either “Create Admin Account” or “Create User Account”
2. Admins can then fill in the details of the accounts that they would like to create. The blockchain ID and email has to be unique and not an existing one in the Firestore database.
3. Then the admin can click on the “Create Account” button.
4. A popup will appear and after confirmation, click on “Proceed”.

*It is important to note that admins will be logged out after creating an account.

Query User Module

Admins can get more information regarding the user of a certain blockchain ID.

Guidance:

1. Admins should click on “Query User” at either the admin dashboard or the top navbar or bottom footer.
2. Admins can then input the blockchain ID that they would like to get more info on.
3. Press “Query User”.
4. If the blockchain ID exists in the database, then the associated user information will be displayed.