COMP3122 Group Project

GitHub Classroom Management

User Manual

Student Name:

Law Nok Him 22110089D

Hung Wai Hin 21080217D

Wan Hoi Nam 23021285D

Ng Ming Hei 21075463D

Content of User Manual

1 Introduction

Thank you for using our prototype – GitHub Classroom Management. It is an application for managing the information provided from GitHub Classroom and evaluate the students' performance on a specific project. As assistance of application, it allows instructor to track the development progress of different groups and the collaboration between a group of students.

2 User Flow Diagram for Prototype
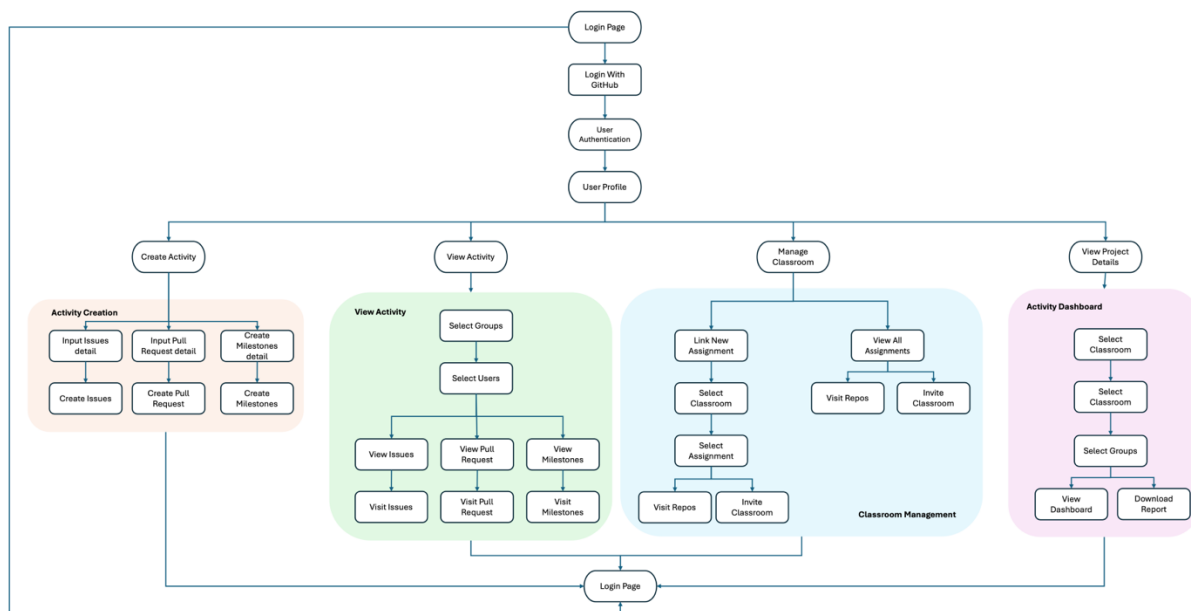
3 Environment Preparations

3.1. GitHub URL

The URL of repository for storing the source code of prototype is:
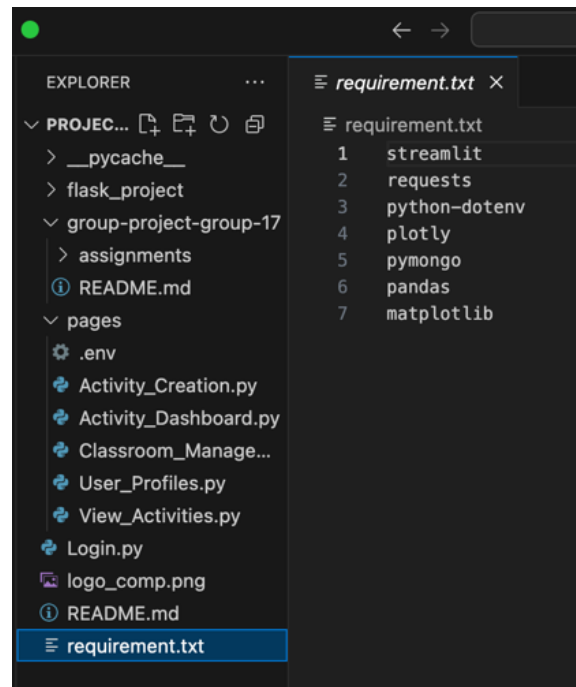https://github.com/philberthung/project

3.2. Download Microsoft Visual Studio Code

For running the program, you are strongly recommended to use Microsoft Visual Studio Code. If you don't have one, you can download it on their official website
https://code.visualstudio.com/

3.3. Libraries for prototype operation

In order to run the program successfully, you are required to download all of the items mentioned in the "requirement.txt". The requirement for a system:

- **streamlit:** For creating the Streamlit application.
- **requests:** For making HTTP requests for getting the information from REST API
- **python-dotenv:** For loading environment variables as GitHub access token from a .env file.

- <u>Plotly and matplotlib</u>: For creating plots and charts on dashboard
- <u>pymongo</u>: For connecting to and interacting with a MongoDB database.
- <u>pandas</u>: For data manipulation as DataFrames and perform data analysis
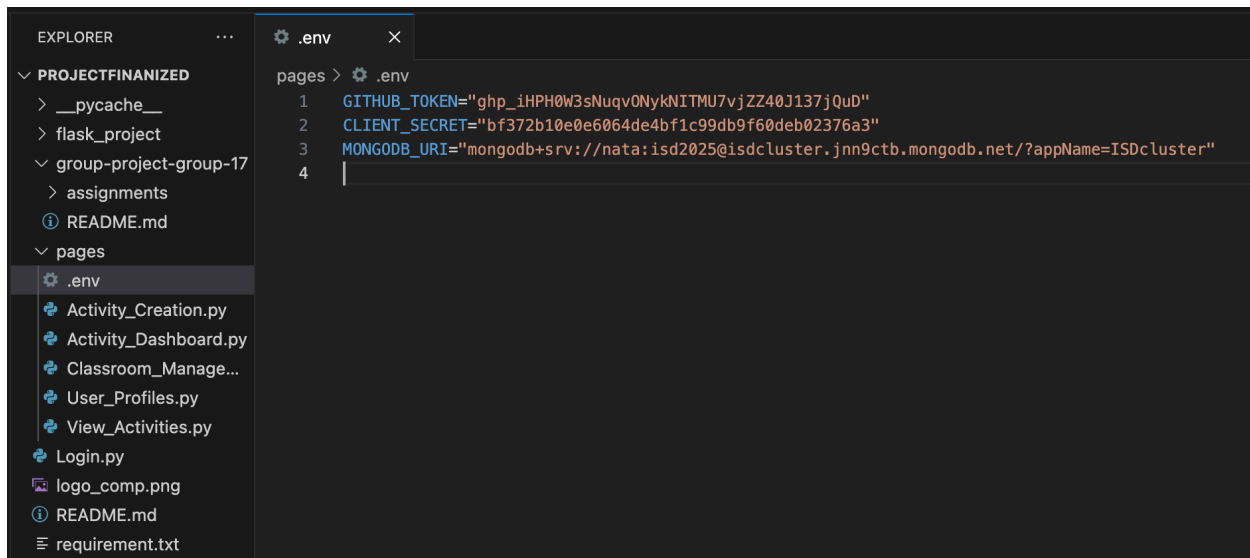
```
● (base) Winstons–MacBook-Air:projectFinanized winstonng$ pip install –r requirement.txt
Requirement already satisfied: streamlit in /opt/anaconda3/lib/python3.12/site-packages (from –r requireme
nt.txt (line 1)) (1.44.0)
Requirement already satisfied: requests in /opt/anaconda3/lib/python3.12/site-packages (from –r requiremen
t.txt (line 2)) (2.32.2)
Requirement already satisfied: python–dotenv in /opt/anaconda3/lib/python3.12/site-packages (from –r requi
```

To download all the items listed in the "requirement.txt", you may enter the command "pip install -r requirement.txt" in the terminal.

3.4. Input the environment variable in file ".env"

```
EXPLORER                          ⚙ .env        ✕
∨ PROJECTFINANIZED                pages > ⚙ .env
  > __pycache__                    1  GITHUB_TOKEN="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"
  > flask_project                  2  CLIENT_SECRET="bf372b10e0e6064de4bf1c99db9f60deb02376a3"
  ∨ group-project-group-17         3  MONGODB_URI="mongodb+srv://nata:isd2025@isdcluster.jnn9ctb.mongodb.net/?appName=ISDcluster"
    > assignments                  4  |
    ⓘ README.md
  ∨ pages
    ⚙ .env
    🐍 Activity_Creation.py
    🐍 Activity_Dashboard.py
    🐍 Classroom_Manage...
    🐍 User_Profiles.py
    🐍 View_Activities.py
  🐍 Login.py
  🖼 logo_comp.png
  ⓘ README.md
  ≡ requirement.txt
```

Please click the file ".env" under folder "pages" and then input the following data.

- GITHUB_TOKEN="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"
- CLIENT_SECRET="bf372b10e0e6064de4bf1c99db9f60deb02376a3"

If the env. file is not workable, it can use the command as export GITHUB_TOKEN="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" in terminal in MacOS or Command Prompt in Window

## 3.5. Connection on MongoDB server
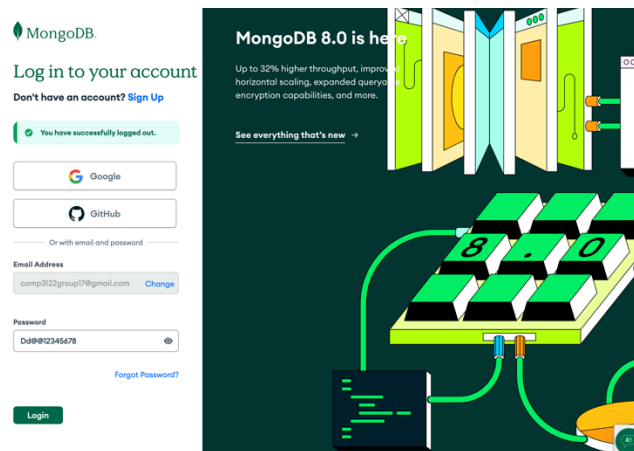
A MongoDB database should be opened for user authentication. Please go to the website https://account.mongodb.com/account/login and then sign in the system. Please use " comp3122group17@gmail.com" as the login email and "Dd@@12345678" as the password. (Since MongoDB platform requires Multi-Factor Authentication (MFA), please contact our team members for assistance in email 21075463D@connect.polyu.hk [NG Ming Hei], 22110089D@connect.polyu.hk [LAW Nok Him], 23021285d@connect.polyu.hk [WAN Hoi Nam], or 21080217d@connect.polyu.hk [HUNG Wai Hin].
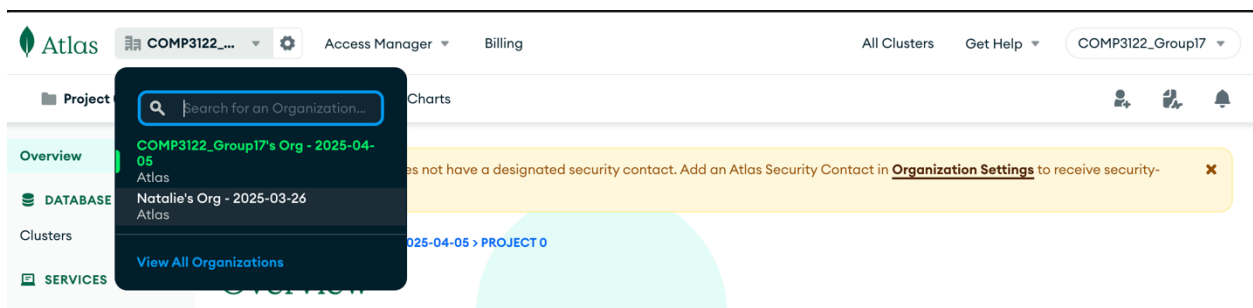
After logging in the system, please click the button "COMP3122_..." and choose "Natalie's Org - 2025-03-26 Atlas" option.
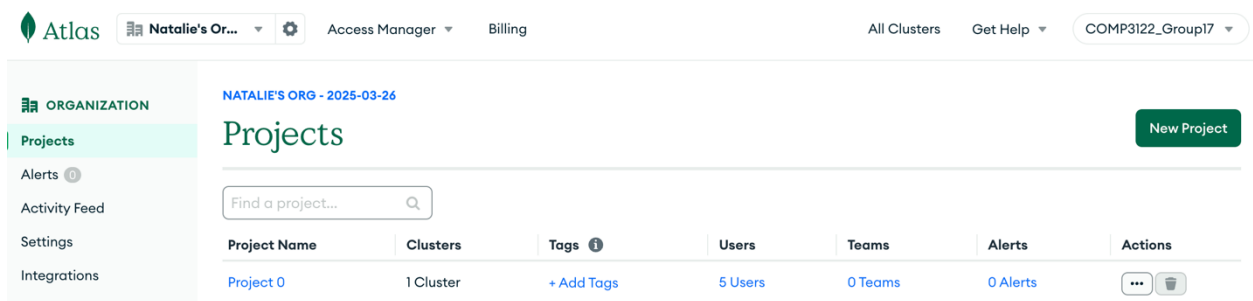
Then choose the project "Project 0".
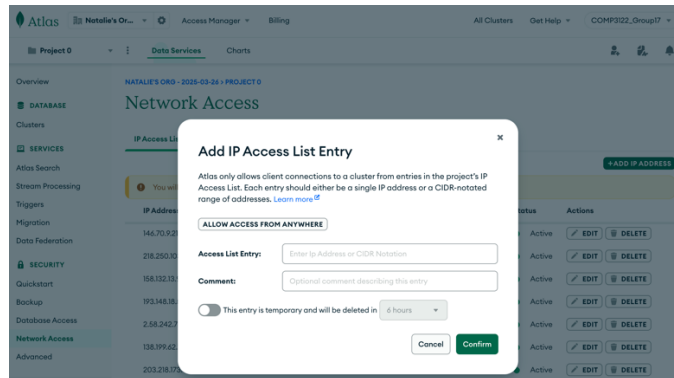
Click the button "Network Access" on the left side. Then, click the green button "+ADD IP ADDRESS" on the right corner. Refer to the screenshot, a button "ALLOW ACCESS FROM ANYWHERE" should be clicked and confirm the access by clicking the "Confirm" button. Now, an IP address is shown on the page.

Please do not close this page while running the program. A connection error might exist if you close this page.

4 Login the system

GitHub Classroom Management

Connect Github account

Login with GitHub

After downloaded all required items, it can enter the command "streamlit run login.py" in the terminal. The web application will be redirected by the Visual Studio Code to any

browser. It will redirect the Login Page of our application. The buttons as "Connect GitHub account" and "Login with GitHub" will be shown on the Login Page.

GitHub Classroom Management

Connect Github account

Login with GitHub

GitHub Login successful!

Click the button "Login with GitHub" and then it will redirect to the OAuth app from GitHub. It will be required to login your GitHub account. Please enter username and password according to the instructions. The buttons as "GitHub Login successful!" will be shown on the Login Page.

GitHub Classroom Management

Login the System

Username (NetID)

21000000D

Password

password1

Login

The username and password should be entered in the text field. Take an illustration, enter "21000000D" as userID and "password1" as password. Click the "Login" button after it.

5   User Profile

User Profiles

Mercedes Tyler

NetID: 21000000D

Role: teacher

Email: mercedes_tyler@connect.polyu.hk

After logging in the system, it should be redirected to the User Profiles page. A user profile will be shown with the username, profile photo, NetID, role and email address.

6   Activity Creation

In Activity Creation Page, it can create an issue, pull request, milestone through our application. Information will be collected from API and connected to the GitHub account.

6.1.   Create a Milestone

System	GitHub

For creating a milestone, it can choose "Create Milestone" as the pull-down list of "Select Activity Type". Then type the Milestone Title, Milestone Description, Due Date and Select Repository in the text field. For example, a milestone is created by typing "Perform User testing" on the milestone title, set the due date as "May 9, 2025" and choose "Team 1" as the repository.

6.2.   Create an Issue

System	GitHub

An issues can also be created by our application. It can choose "Create Issue" as the pull-down list of "Select Activity Type". Then type the issue title, issue body, and select the

repository. For example, an issue is created by typing "Testing121" on the issues title, "Testing" and choose "Team 1" as the repository.

6.3.   Create a Pull Request

System	GitHub

In addition, a pull request can also be created by our application. It can choose "Create a Pull Request" as the pull-down list of "Select Activity Type". Then type the Pull Request Title, body, Source Branch (head), Target Branch (base) and choose "Repository". After typed information, click the button "Create Pull Request". The information will be sent to the repository from GitHub Classroom.

7 View Activity

7.1. View Pull Requests

System	GitHub
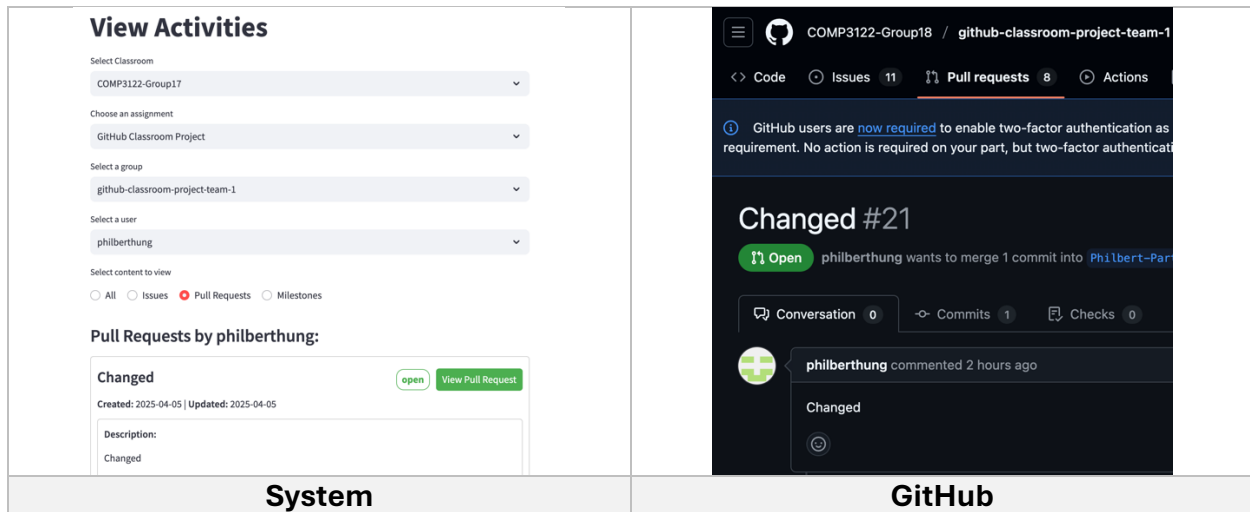
By clicking "View Activities", it is required to select a classroom, assignment and teams. Then, select a specific user with desirable activity (Issues, Pull Requests, Milestones). To take an illustration, view the content of Pull Requests processed by the student philberthung from group 1. Select philberthung as user and select the content as Pull request. If user want to view more information on pull request, a green "View Pull Request" button can be clicked to redirect to the GitHub website to view the detail of pull request.

7.2. View Issues

System	GitHub
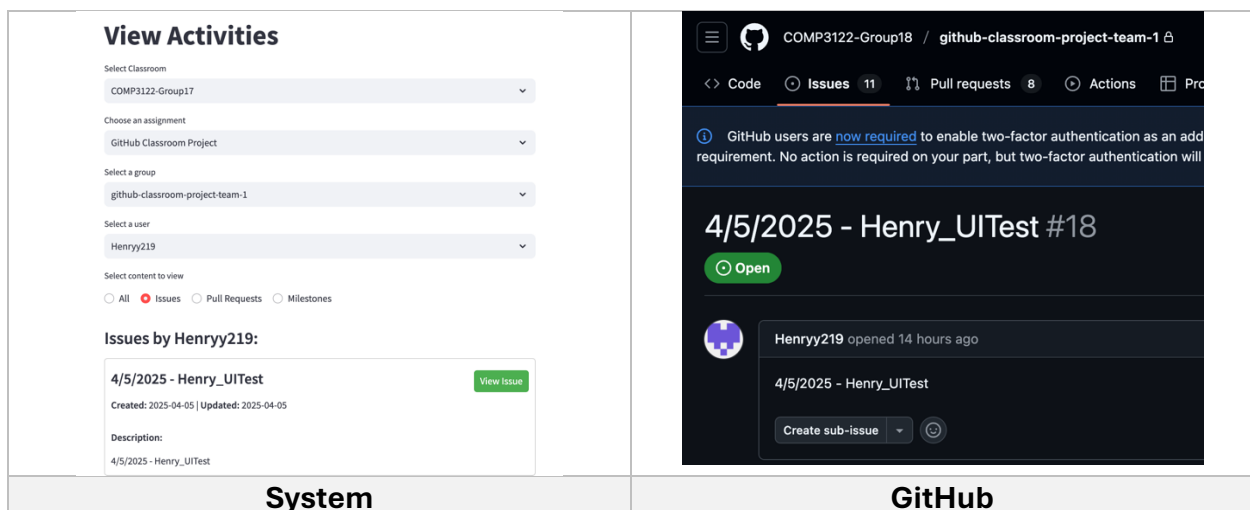
To view the content of Issues processed by the student Henryy219 from group 1. Select Henryy219 as user and select the content as Issues. An issue created by 2025-04-05 is shown as title "4/5/2025 - Henry_UlTest" and updated date is displayed. The description is shown as "4/5/2025 - Henry_UITest". If user want to view more information on issue, a green "View Issue" button can be clicked to redirect to the GitHub website to view the detail of Issue.

7.3. View Milestones

System	GitHub

To view the content of milestones processed by the student Henryy219 from group 1. Select Henryy219 as user and select the content as milestones. A milestone created by 2025-04-05 is shown as title "4/3/2025 – Team 1 and its description as "4/5/2025 - Team 1". If user want to view more information on issue, a green "View Milestones" button can be clicked to redirect to the GitHub website to view the detail of milestones.
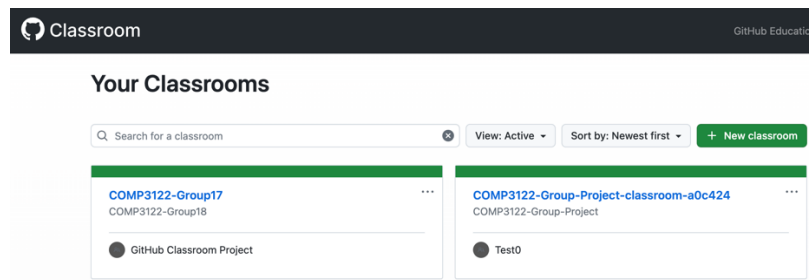
8 Classroom Management

Click the sidebar "Classroom Management" and two buttons are shown as "View Assignment" and "View All Assignments".

8.1. View Assignment

Before linking up the assignment, it should visit GitHub Classroom
https://classroom.github.com/classrooms to create an assignment first.

Then, go to our application and link up new assignment to the system. To click the "Link New Assignment" and "Search Classrooms" button. A pull – down list is shown for choosing a classroom. If an assignment exists in the classroom, a message as "Found 1 assignments!" should be displayed with green background. Then, some assignments can choose, the assignments information will be shown at the bottom. For each assignment, a

green and blue buttons is displayed for redirecting the classroom repository and invitation link respectively.

8.2. View Classrooms

In addition, it can view all the classrooms in users GitHub. By clicking the button "View Classrooms" and a list of assignment will be shown on the page. By clicking the expander, the information of each assignment in a specific classroom will be shown. Same as the View assignment session, a green and blue buttons is displayed on the assignments for redirecting the classroom repository and invitation link respectively.

9   Project Activity Dashboard

By clicking the button "Activity Dashboard", a Project Activity Dashboard page is shown for viewing the performance for different groups. There are two buttons at the front, which are "Dashboard" and "Download Report".

9.1.   Dashboard

It is required to choose the classroom, assignment, and group on each of pull – down list.
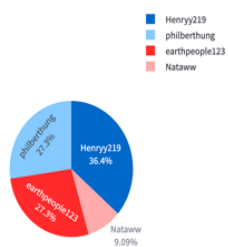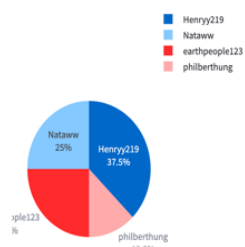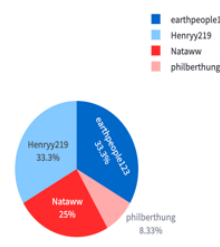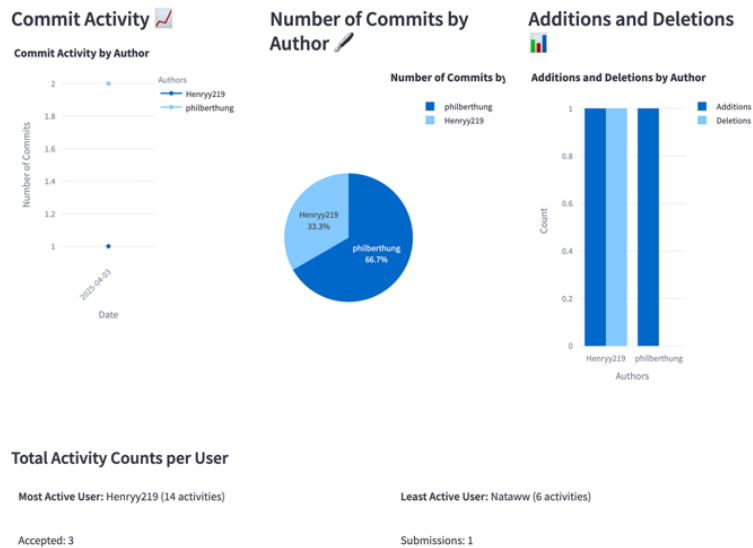
Now, the page displays the records of issues, pull requests, milestones for each group and its members. In addition, the group's performance metrics is shown which including the commit activity, total commits, and code additions / deletions by members. At the bottom of the page, a count on students' activities is shown which shows the activity log of student (e.g. most and least active in the class). In addition, a count of accepted assignment and submissions completion of students is displayed.

9.2. Download Report
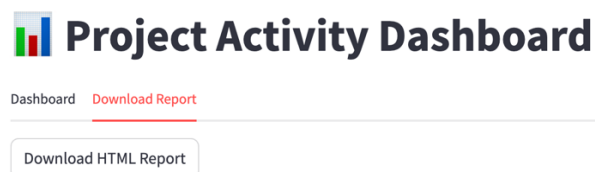
When clicking the button "Download Report", a button "Download HTML Report" is displayed.
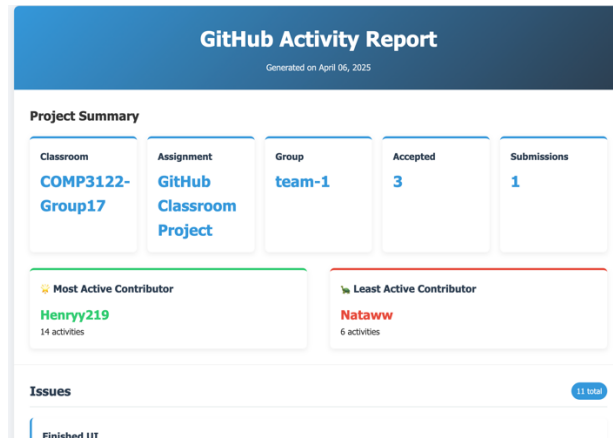
After clicking the download button, a html file is going to download about the report of the GitHub Activity which named as "activity_report.html". In the report, a Project Summary can be found with the records of Issues, Milestones, commits and existed data in Dashboard.

10 Exit the System
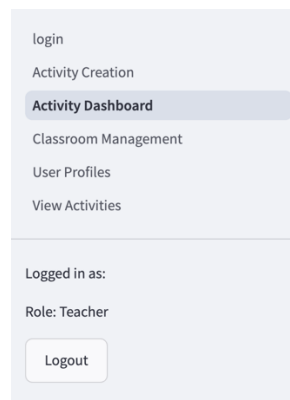
To exit the system, please select the "Logout" button on the sidebar of the left side of the application.

11 Appendix

11.1. Work Allocation:

Tasks	Name
Front-End	Hoi Nam WAN, Nok Him LAW
Back-End	Ming Hei NG, Wai Hin HUNG, Nok Him LAW
User Manual	Ming Hei NG, Wai Hin HUNG
PowerPoint	Hoi Nam WAN, Nok Him LAW

11.2. AI Declaration of the Group Project:

It declares that Generative AI tools have been used to prepare the submitted work. The Generative AI tools used and the way they were used are as follows: The AI tool was utilized to assist in formulating ideas, providing suggestions, debugging our coding in our group project.