DEVELOPMENT OF A SELF-LEARNING SYSTEM FOR WEB-BASED NODEJS PROGRAMMING WITH AN AUTOMATED ASSISTANCE MECHANISM

USER MANUAL

Arranged by:

Omar Abdul-Raoof Taha Ghaleb Al-Maktary **NIM. 1941720237**

INFORMATICS ENGINEERING STUDY PROGRAM

INFORMATION TECHNOLOGY DEPARTMENT

STATE POLYTECHNIC OF MALANG

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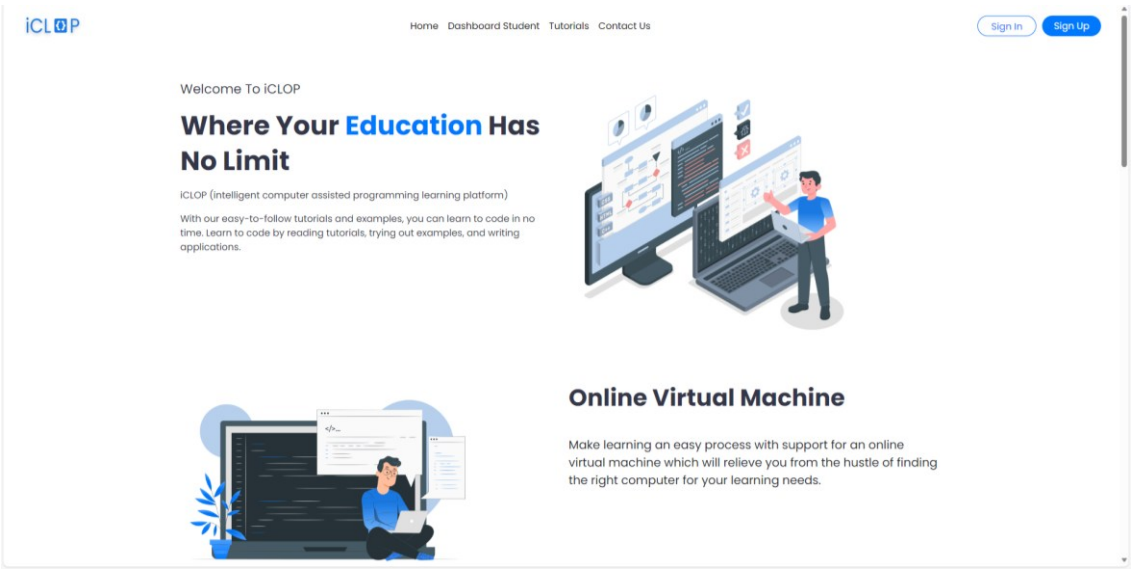
User Manual iCLOP: NodeJS Learning

Introduction

This document serves the purpose of providing a comprehensive guide to using the iCLOP NodeJS learning materials. This guide will explain the steps to access the learning materials and submit the projects to be verified by the system.

iCLOP: Home Page

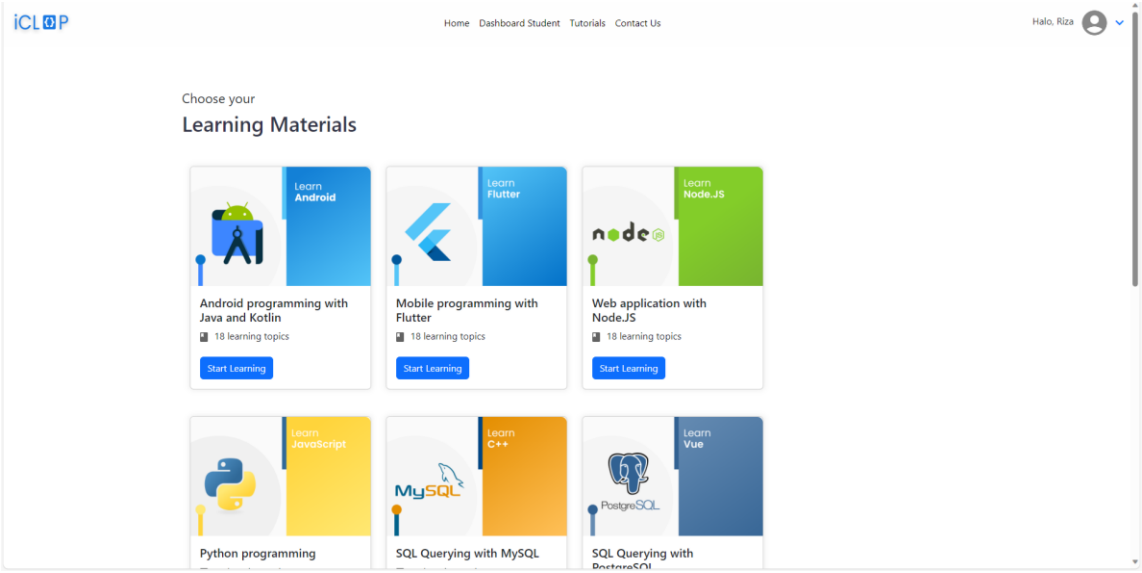
When accessing the platform, users will see the following page. This page shows information related to the platform and other learning materials.



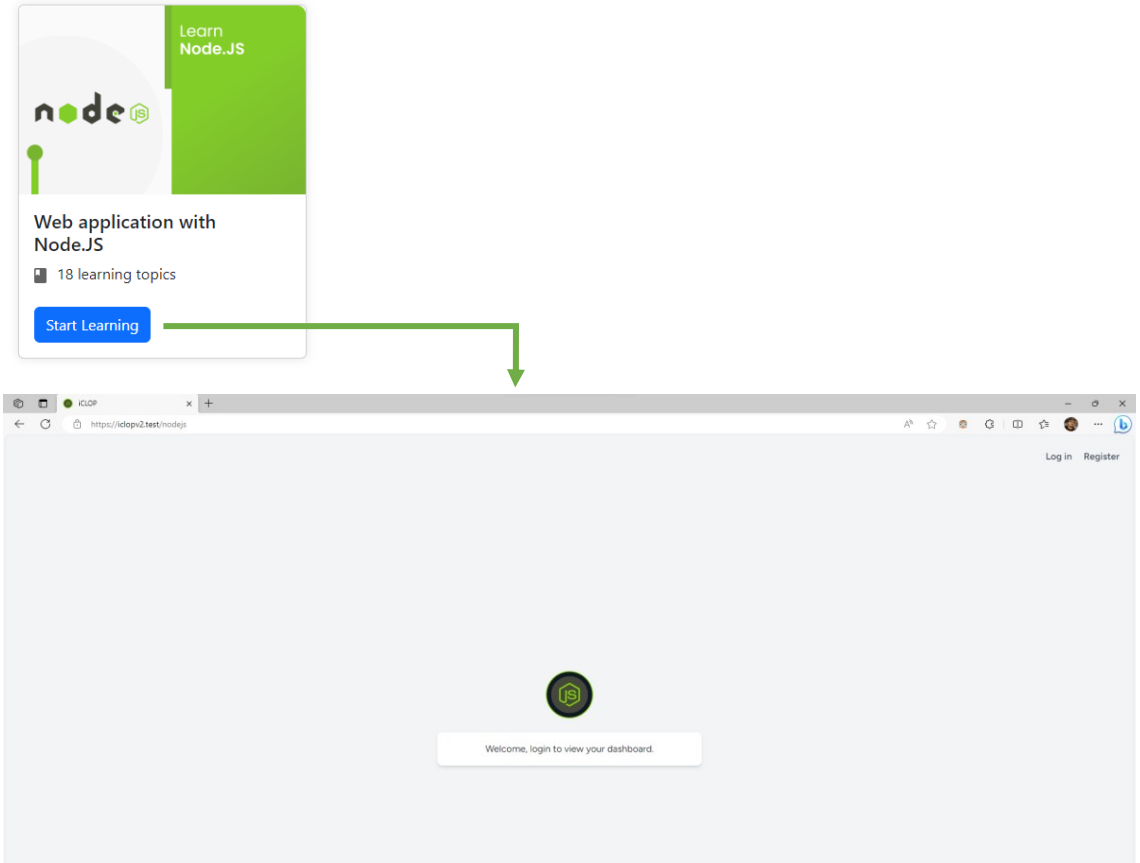
iCLOP: Student Dashboard Student

After the students logged in to their accounts, they will be directed to the dashboard where they can enroll and access learning materials.

By clicking on the start learning button, students will be redirected to the application corresponding with the learning material.

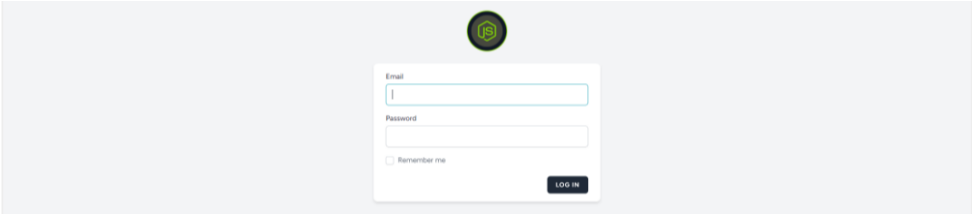


Select the “Web application with Node.JS” option which will direct the student to the NodeJS portal.

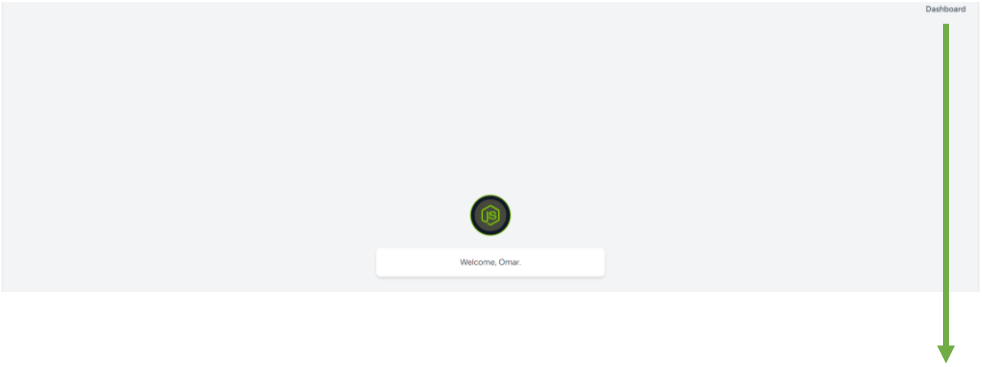


Login

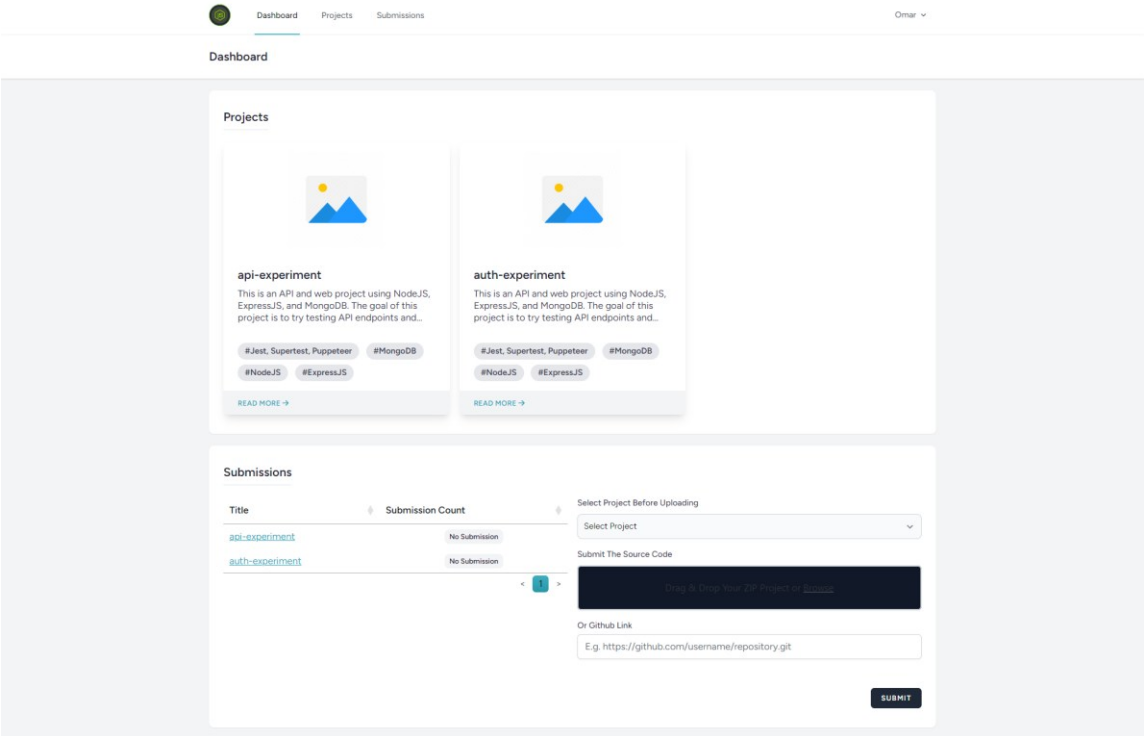
Students should login using their credentials and then they will be able to access the NodeJS learning materials



The students will be welcomed and a button named “Dashboard” will appear. By clicking on that button students will be directed to the NodeJS dashboard containing information about the projects that can be learned and submission section for code verification.



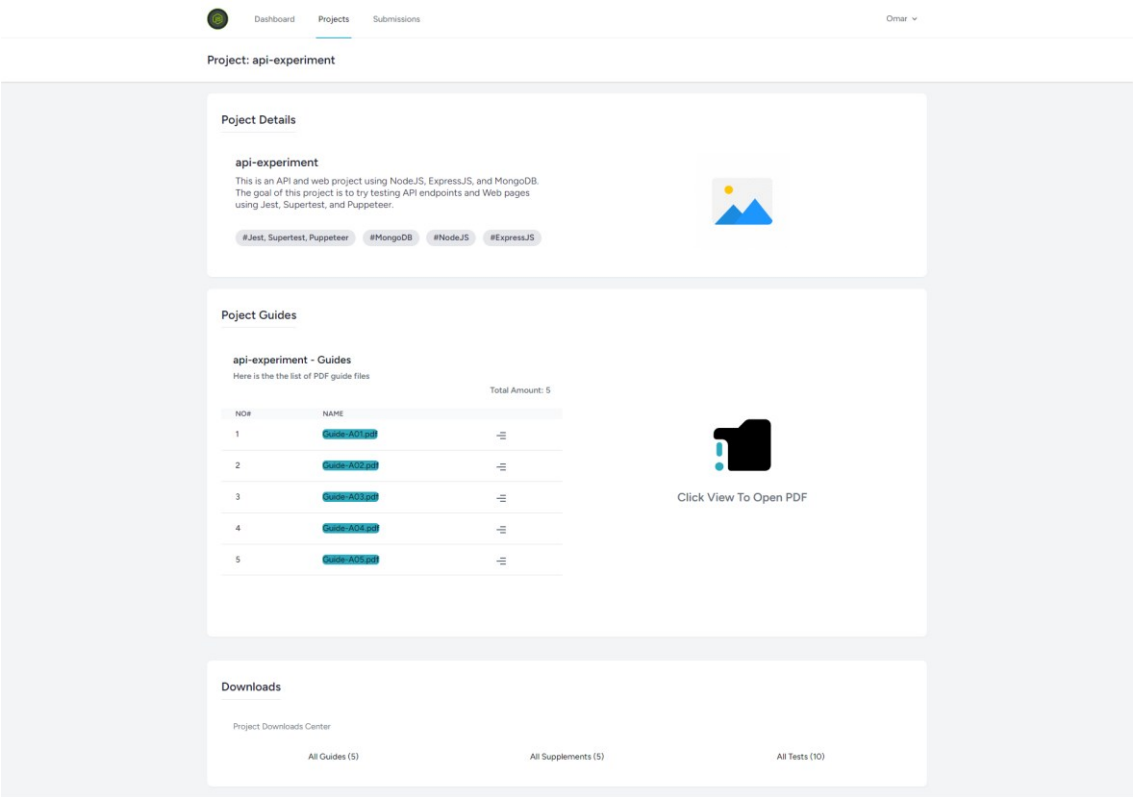
NodeJS Dashboard



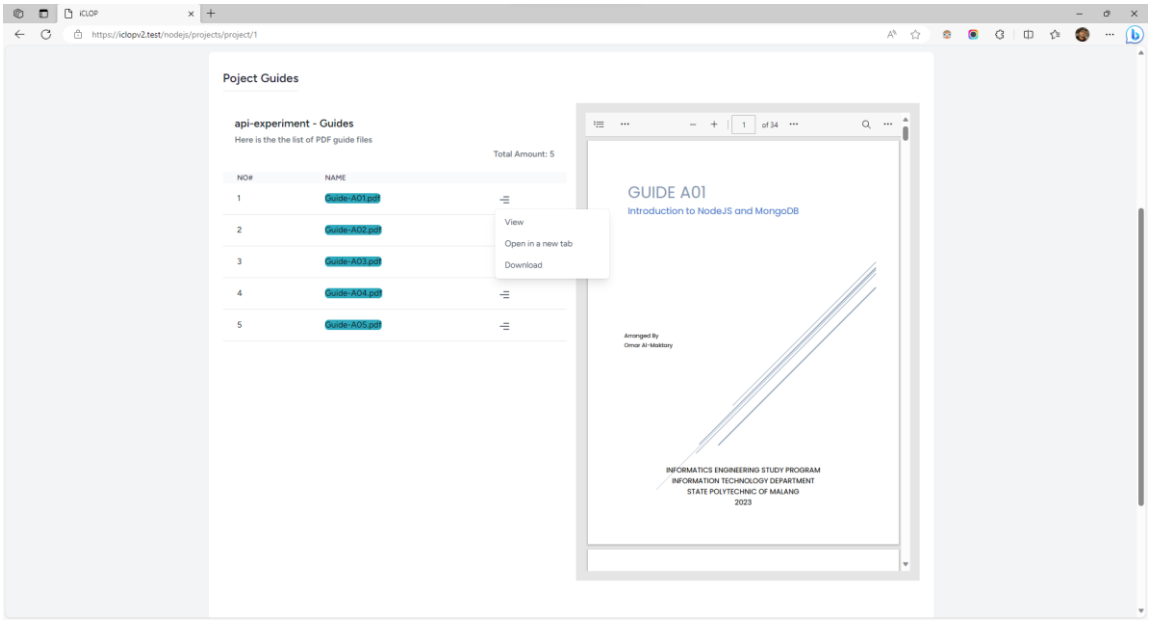
In the NodeJS dashboard there are two sections. The first, projects available to explore. The second, submission section.

Students can also view the projects from the “Projects” tab in the nav bar. By clicking on the “See More” button for any project, it will direct the student to the project details where the student can read information about the project, what tech stack is using and others.

In the project details page, students can view the guide files available for that project. The last section of the project’s details page is the download center where students can download zip files that will help the students. The download center includes download buttons for the guide files, supplement files, and test files.



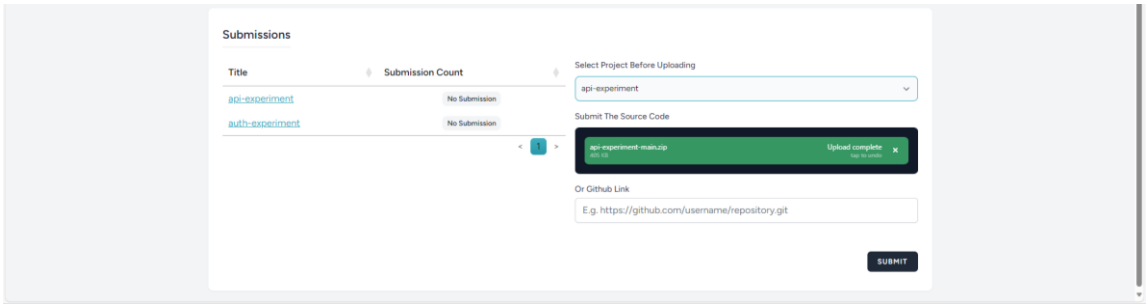
In the Project Guides section, students can view or open any guide file in a new tab or download that guide file from the action button in the guides table as shown in the following image.



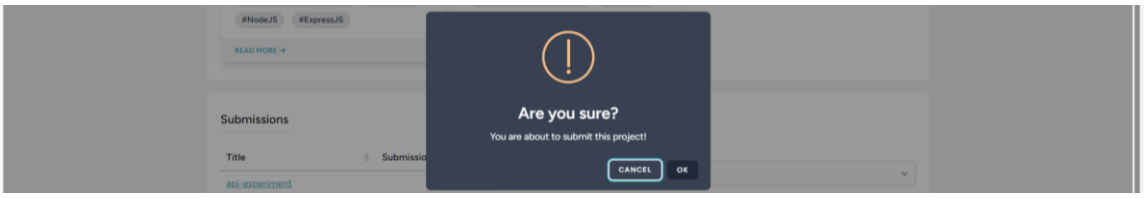
Project submission

Students can submit their work using the submission section in the dashboard page. The submission can be done when the student chooses the title of the project from the select menu and then upload their code using a zip folder or a GitHub repository link. The zip file can be dropped in the black box below the project selection option.

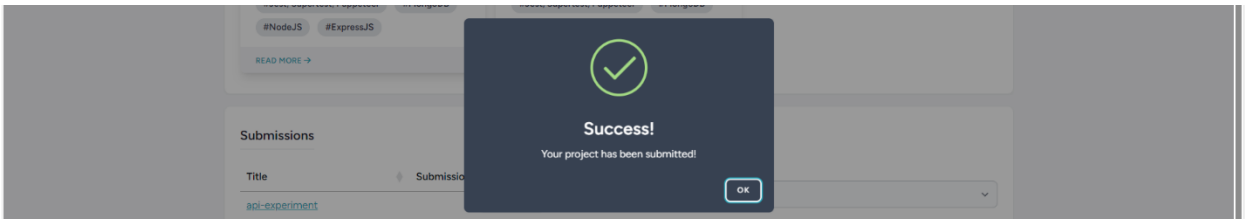
The table in the submission section shows the status of the submission for all the projects from the current user.



By clicking the “SUBMIT” button, students will be prompted with a warning. The students can click “OK” to continue the submission process.



After the student clicks “OK”, the submission will be processed. If the submission has been saved successfully, the students will be prompted with the following message. By clicking “OK” the student will be directed to the submission process page.

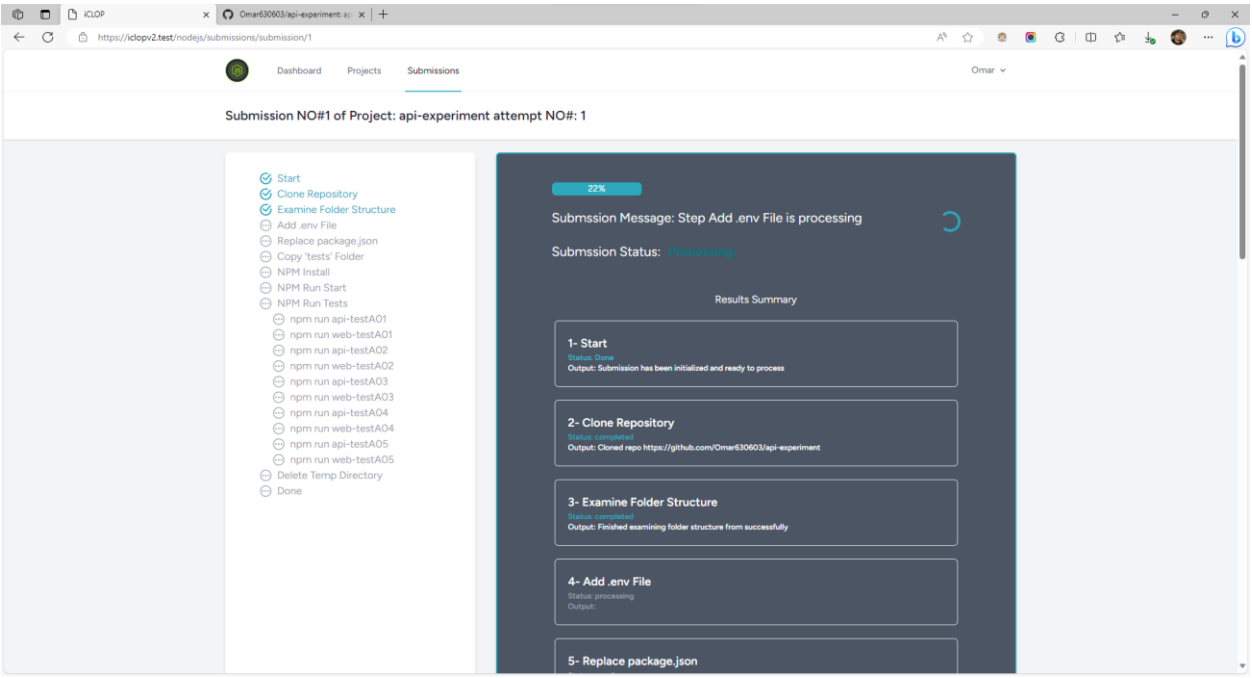


Submission Process Page

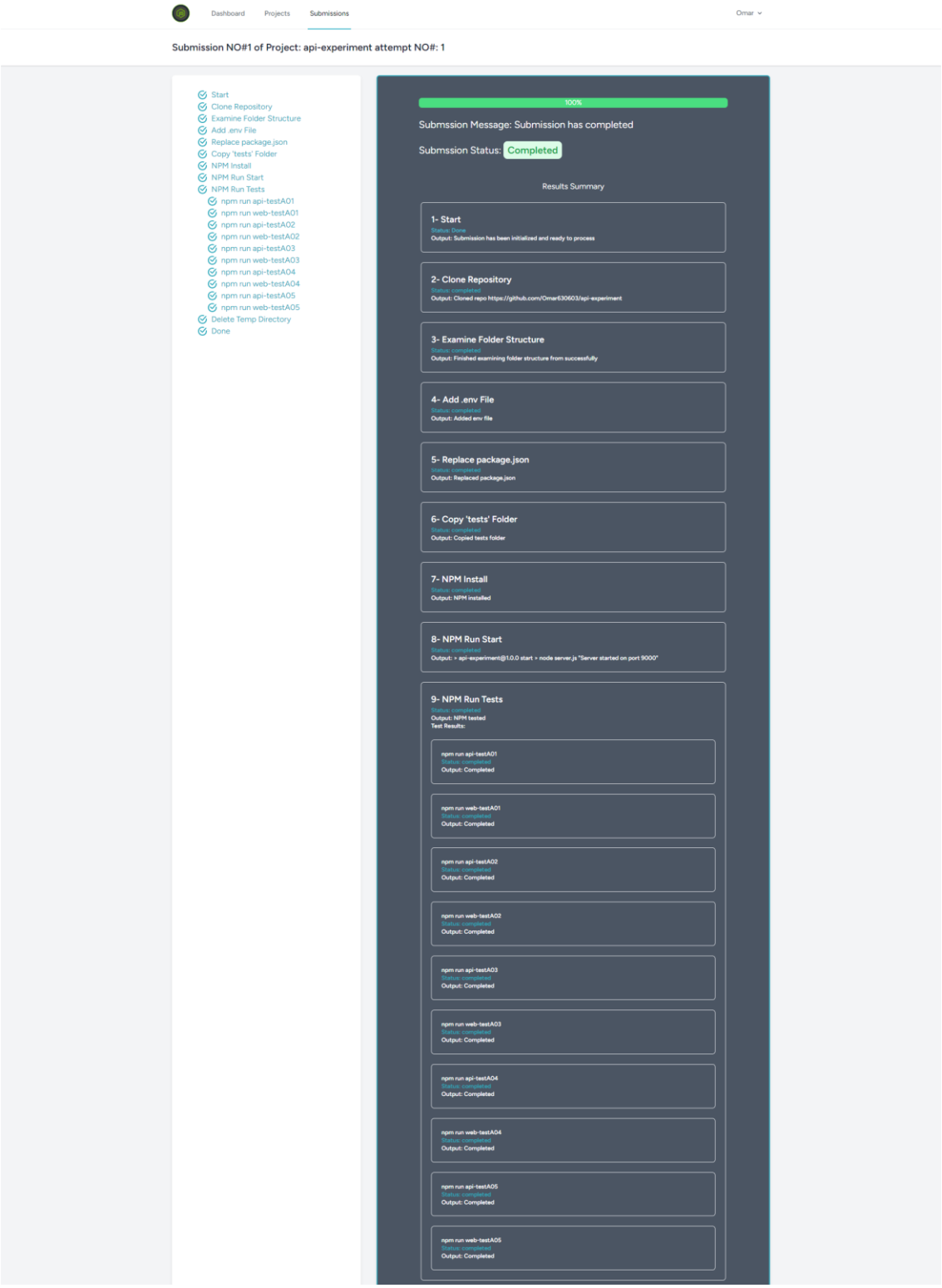
In this page the students will be able to see their submission processed in real-time. Each step will run in the folder submitted. Each project has a set of steps that must go through for each submission. These steps include:

1. Cloning the repository or extracting the zip file.
2. Adding necessary files such as .env, package.json, and test files.
3. Install NPM packages.
4. Running the application in the background using a different port.
5. Running all the test files that have been copied from the system to the project submitted.
6. Deleting the temporary folder submitted.

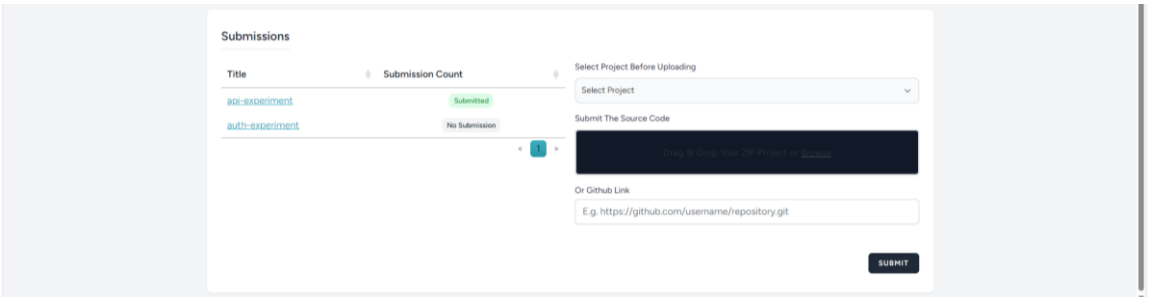
The following is a screenshot showing the process of running all of these steps for the submitted folder.



The following image shows the submission has succeeded in all the steps and this considered to be a project aligned with requirements in the guide files.



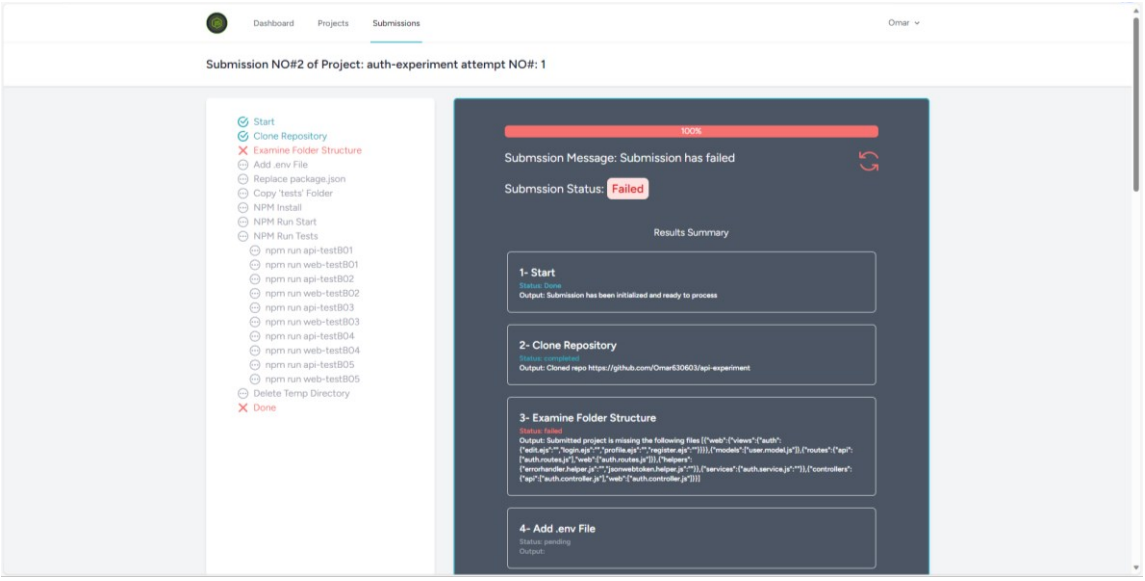
If the project has been submitted it will change the status in the submissions table. This status only indicates that the project has been submitted, not the results of the submission. To view the submission details, click on the “Submissions” tab in the nav bar and then navigate to the project by clicking on the title which will redirect the students to that project submission history.



This image shows if one of the steps fails, the process will stop unless it is in the test step. In the test step the process will not stop until all the tests have run regardless of the test status. In this image the submission failed because the folder structure is not the same as expected. As the image implies, the error is showing the missing files.

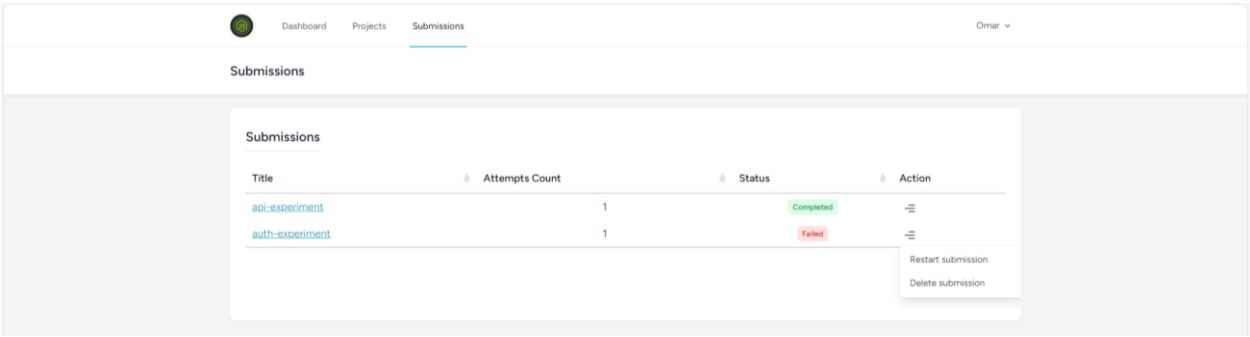
If one of the tests fails the process will continue but it will show a report of the error causing the test to fail.

If the submission failed, the student can click on the refresh button to retry but this option is only used if there are issues with the system. If the submission failed because of the code then the students can explore the other option explained in the next section.



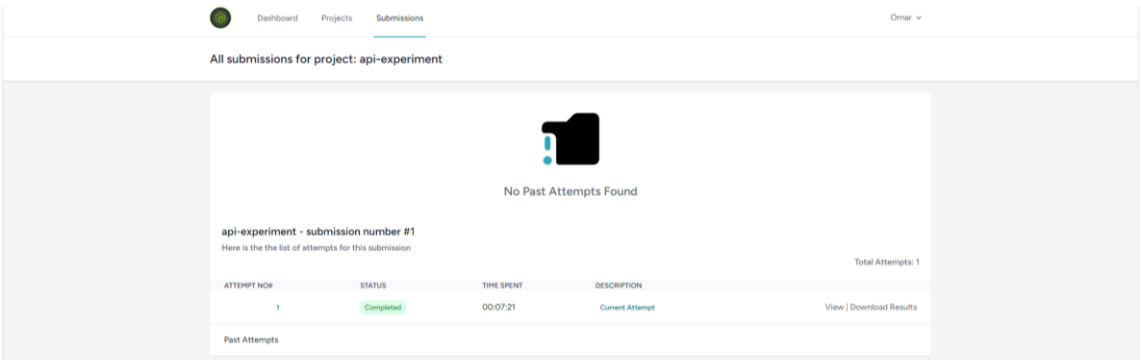
Submissions Page

In the submission page, there is a table that shows the projects and their submission status. In the table it shows how many times that project has been submitted. If the project was using a zip file and the submission failed then there will be another action to change the source code by uploading the new zip file or a GitHub link. The other options are to delete the submission or to restart it which will return the submission to the first step. If the submission is deleted then the students should upload the submission again from the dashboard menu.

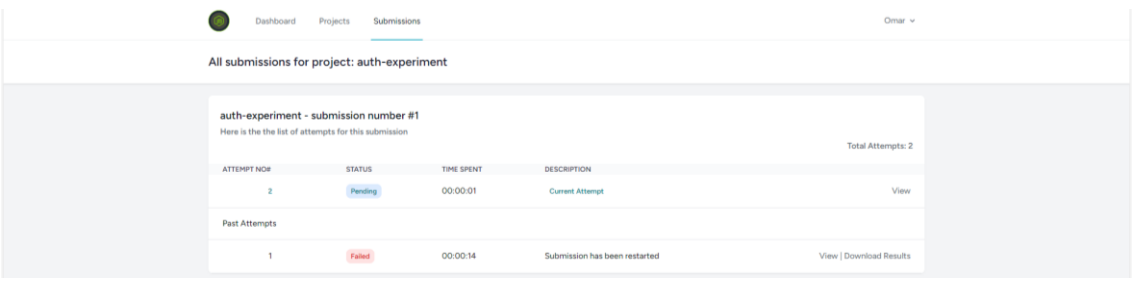


Submission History Page

Students can access the following page by clicking on the title of the project in the submissions page. This page shows the current and the past submissions information. There is information regarding the submission status, time spent and description explaining why the old submission failed. The action options are to view the submission process page or to download the results in a json file.



The following image shows multiple submissions history.



By clicking on “Download Results”, the student will get a json file showing the status of each step for the submission. This option is only available for submissions that are either complete or failed. If the submission is still pending or processing, the student can click on “view” to continue the process.