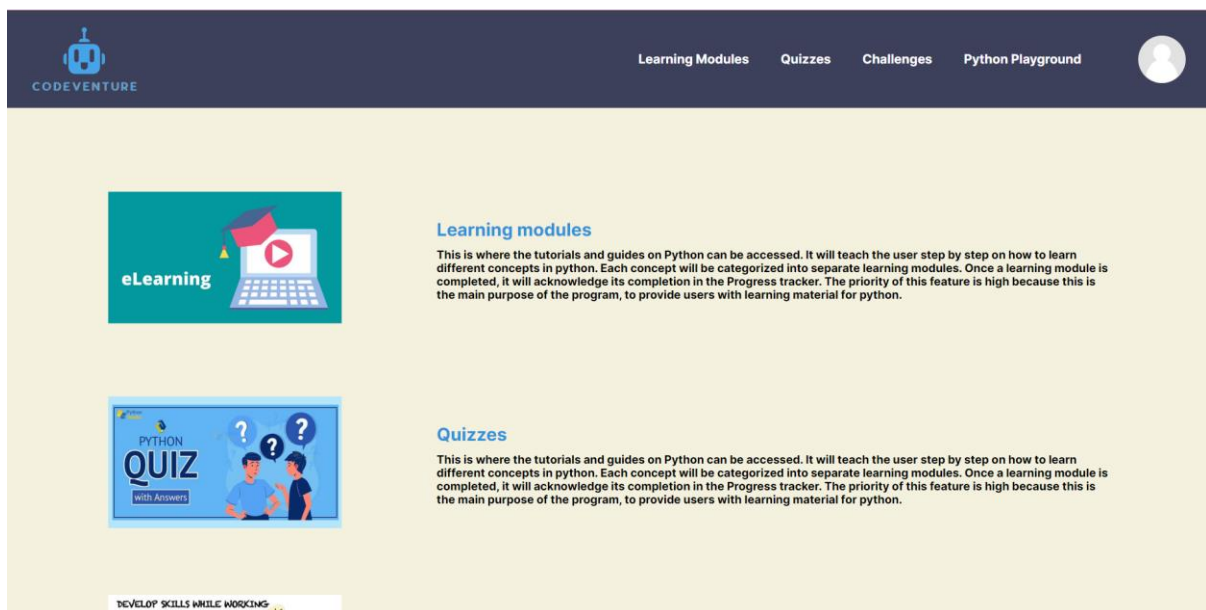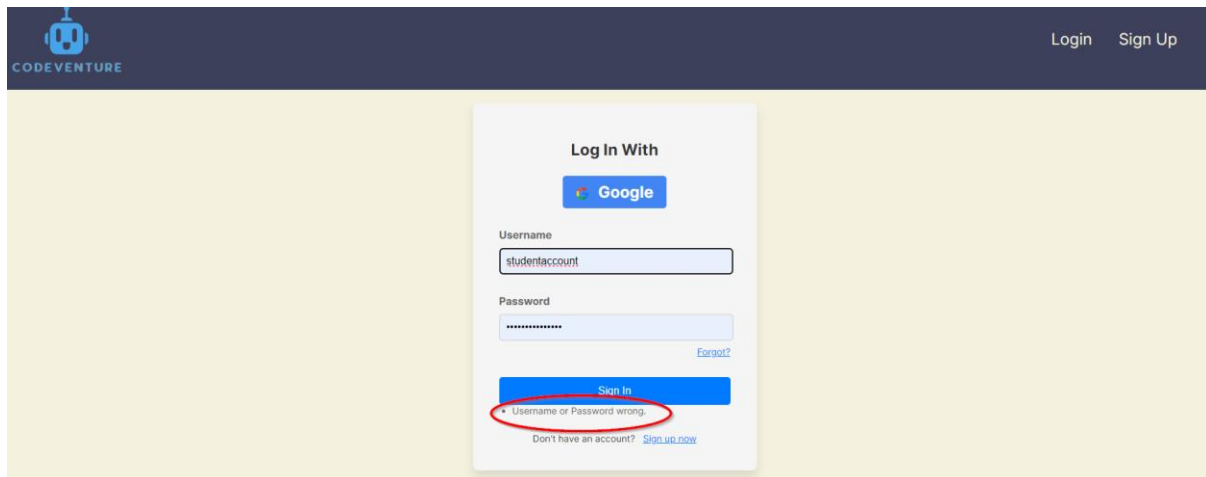# Main features implemented:

FR 1 - Log-in feature:
Code Venture will allow access to users only if the correct login information (username and password) are provided.
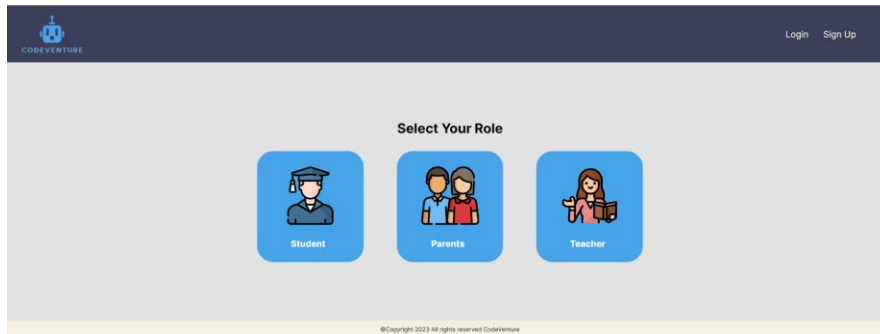

Acceptance criteria for FR 1:

● When the user enters incorrect login information (username and password), there will be an error message informing the user that the login details entered were invalid.
● Once logged in with the correct login information, the user will be directed to the home page.

- Meaningful error messages are displayed to the user when username or password input is wrong.
- Users are directed to the home page once logged in.

FR 2 - Sign up feature:

Takes in the user's name, email, age and coding experience (in three levels, no experience, little experience and comfortable, this will allow the app to display the appropriate level of assignment), also takes in the user's parent email address and teacher email. *All* these logged into the database as the new user's account once submitted successfully.
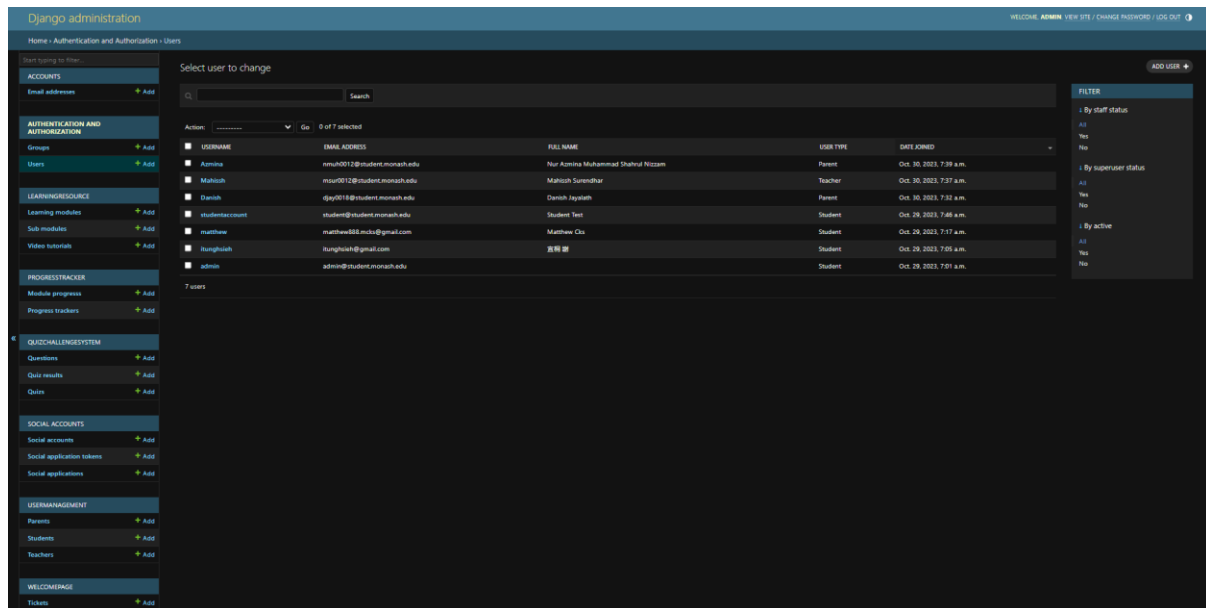

Acceptance Criteria for FR 2:

● When the user enters their age, the program will validate their age.
● Also, when the user enters their contact email address, the program will validate their email, seeing if it follows the obvious conventions of an email (i.e., with an @symbol etc).

- Validation on email is present.

FR 3: Database:

Shall allow access for parents, schools, or organizations to access information, such as progress, on all registered users in the program. Organized chronologically by the time each user was created.

-Signed up users can be viewed from our database, along with their email address, fullname, user type and date joined.
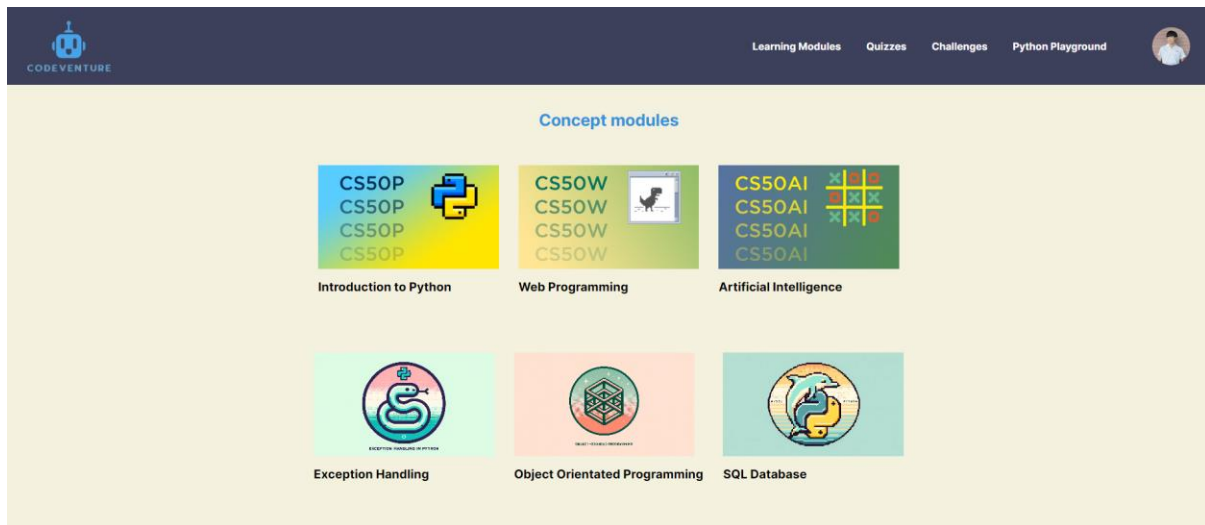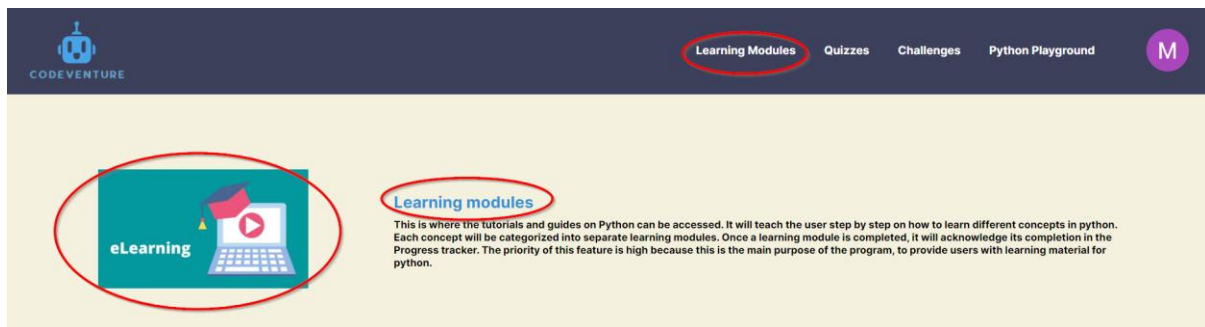
Acceptance Criteria for FR 3:

● The users' parents and teacher will be able to see the progress bar of their child/student.
● The parents and teacher of the particular student will be able to read all of the student's progress details as an admin.
● The progress bar will also accompany the results of the students in the activities that they have completed so far.
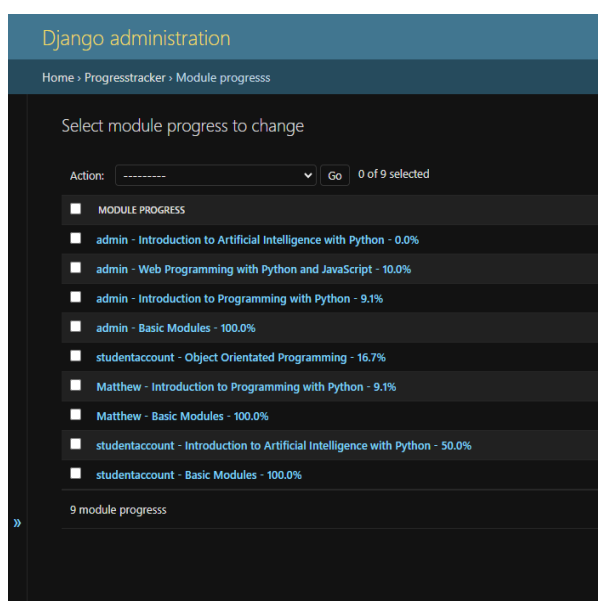
- Inside the admin panel, the progress of each student can be seen.

FR 5 - Learning Modules:
If the user selects this option, the program shall guide them to interactive guides.
and tutorials for different concepts in Python programming.

Acceptance Criteria for FR 5:
● The user has options to view the different modules that represent the different concepts in Python programming.
● The user can only progress through modules chronologically, starting from the basic concepts moving up to the advanced concepts.
● If the user attempts certain activities the program will show a message reminding them that they have to complete the previous activities. (*not implemented)

FR 6 - Progress Tracker:

If the user selects this option, the program shall guide them to a display of them. individual progression of the learning modules.
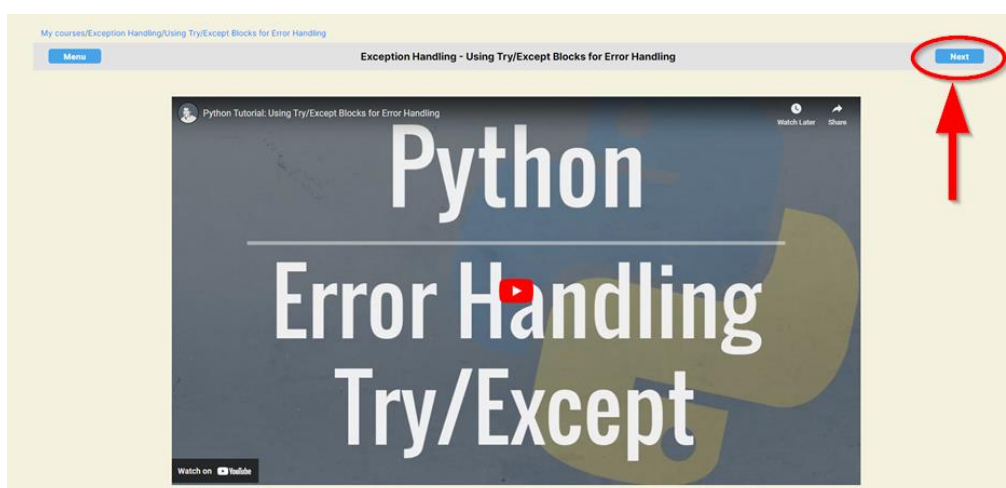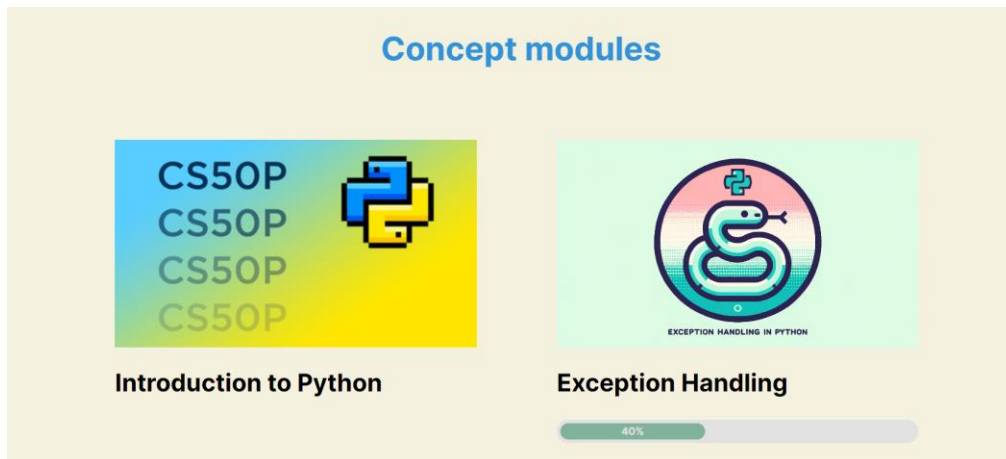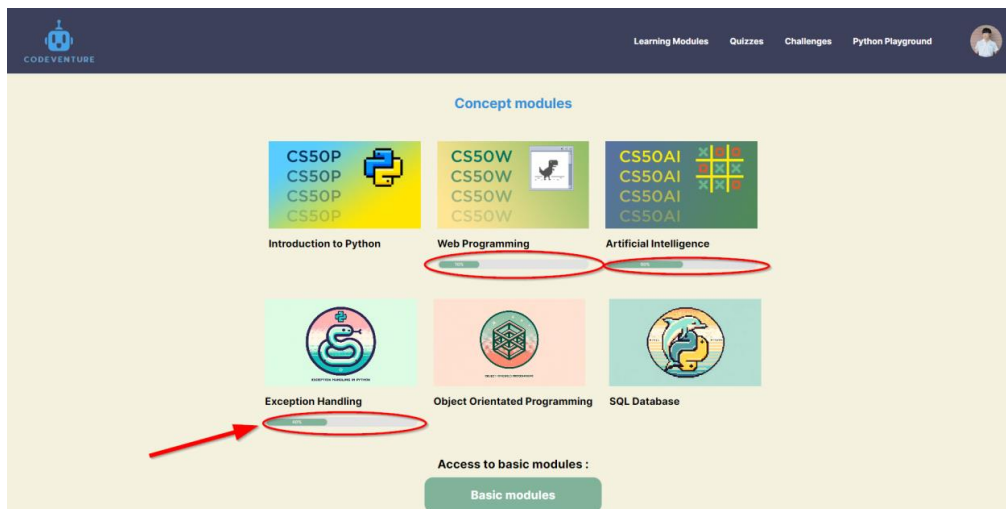
Exception Handling in Python

Description

"Exception Handling" is a pivotal course that introduces the crucial aspect of managing errors and unexpected situations in programming. Students will learn how to gracefully handle exceptions in Python, ensuring robust and reliable code. The course covers best practices, debugging techniques, and custom exception creation, empowering learners to write resilient programs that stand the test of real-world challenges.

1. Using Try/Except Blocks for Error Handling
2. Exception Handling
3. Exceptions in Python
4. Exception Handling Tips
5. Advanced Exception Handling

Concept modules

Introduction to Python   Exception Handling

INCREASED FROM 40% TO 60%   60%

Acceptance Criteria for FR 6:
● The user can see a bar that shows their progress that measures the completion of all the activities in all of the learning modules combined.
● The bar will simply be a rectangular bar that will have color filled in it.

-The progress of the user for each specific module is tracked and saved in the progress bar.
- Admins can view and download the module progress of the students

FR 7- Challenges and Quizzes:

If the user selects this option, the program shall guide them to a variety of quizzes.
and challenges that shall test their knowledge on the Learning Modules.
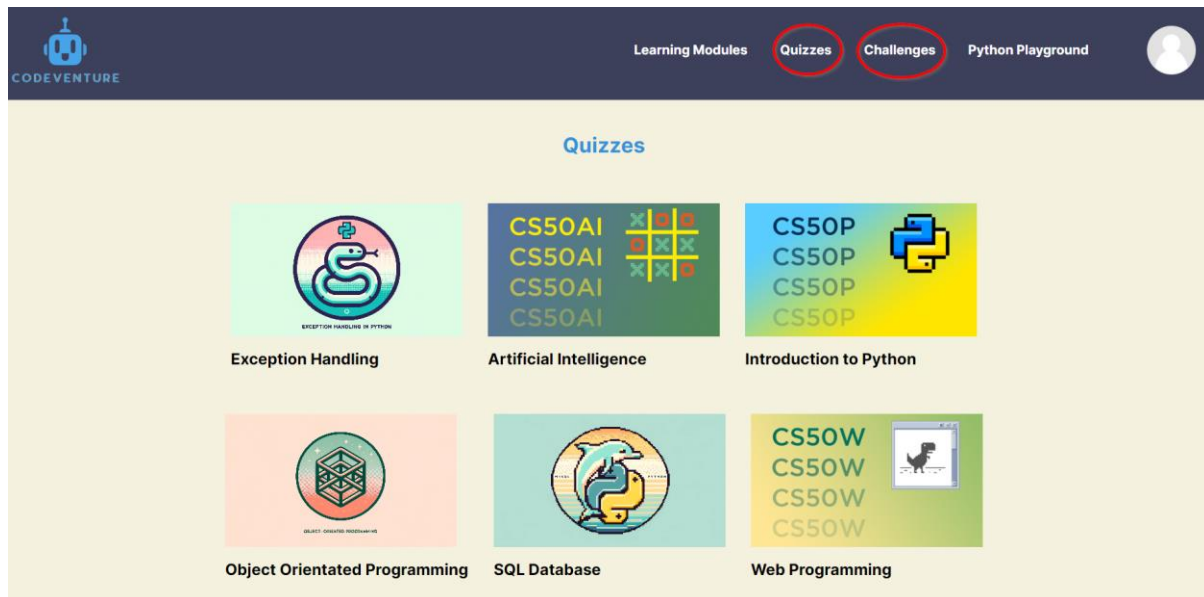
-User can attempt quizzes for different concept modules and receives a score based on number of correct answers.
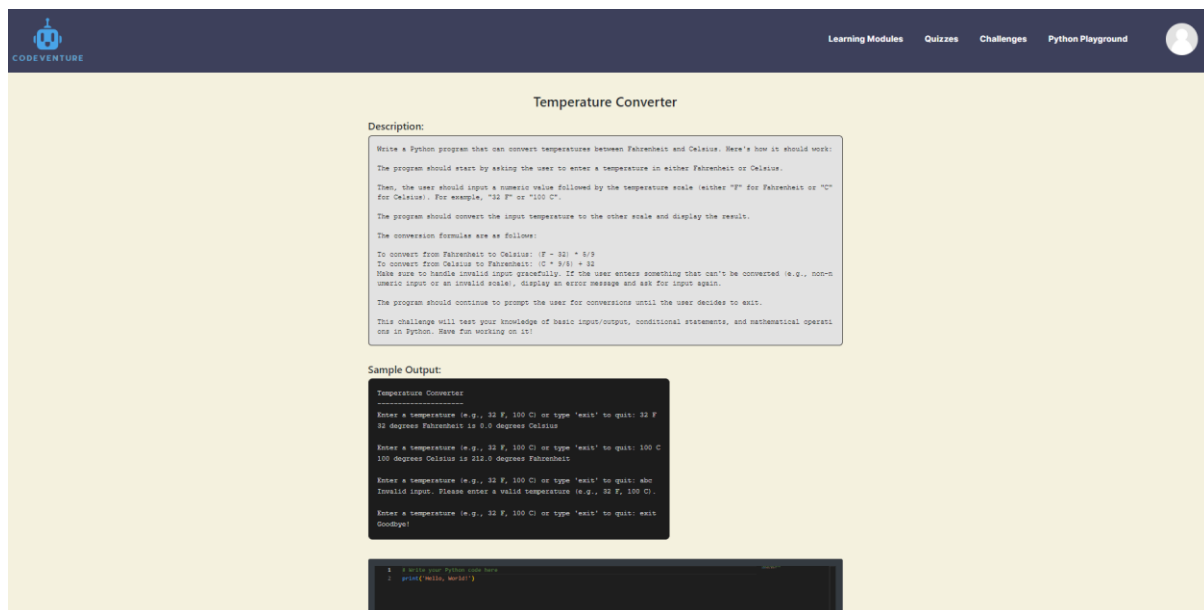
Acceptance Criteria for FR 7:

● The user can view the different challenges and quizzes, once they select this option.
● This can be selected and completed at any point in time, unless they have a progress level of less than 10%. (* did not implement since it was not too logical and would hinder user experience as some users might want to access the quizzes and challenges without watching any learning modules.)

FR 8 - Python Playground:
If the user selects this option, the program will bring them to an empty project in
Python where users can experiment coding freely while practicing the concepts they have
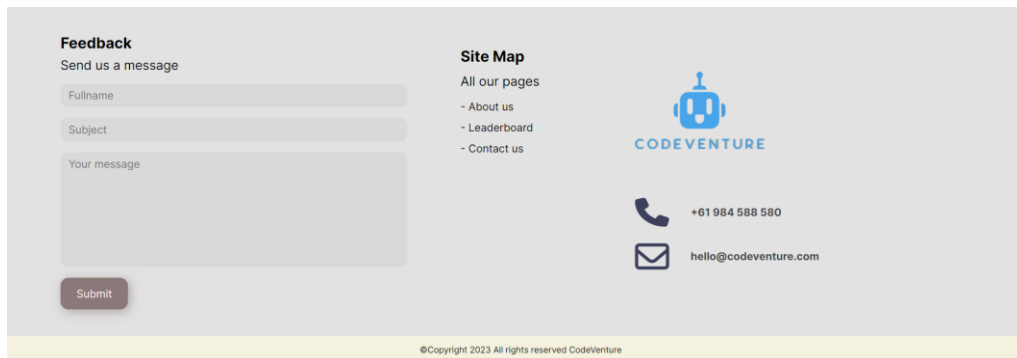learned.
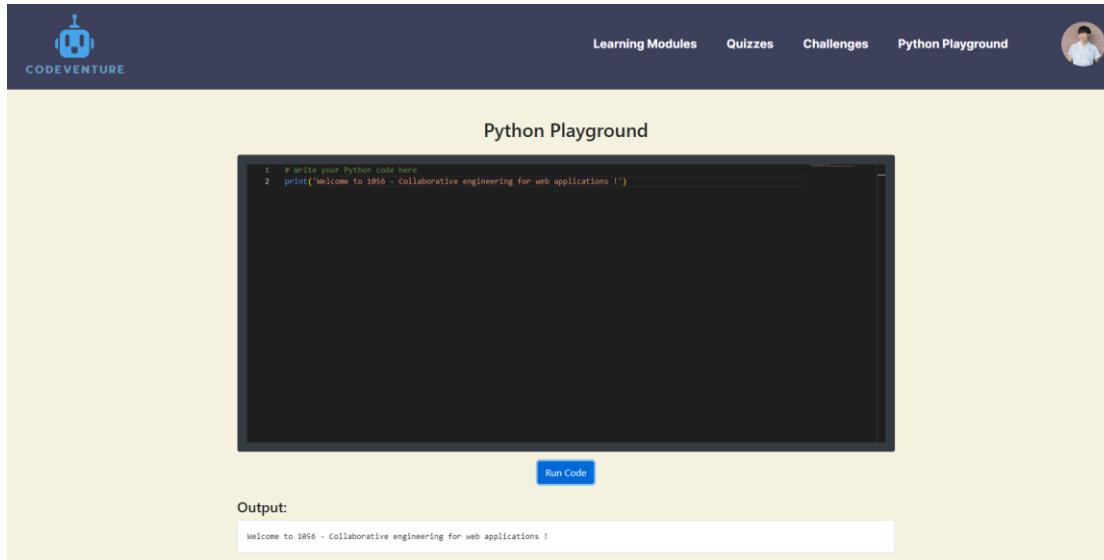
Acceptance Criteria for FR 8:
● The user can view a blank python file to simply code when they choose this option.
● The user has the option to save these code files and/or delete these files.

- Users can freely test their coding abilities and are provided with a user-friendly code editor.
They are also fully able to run their codes and obtain outputs.
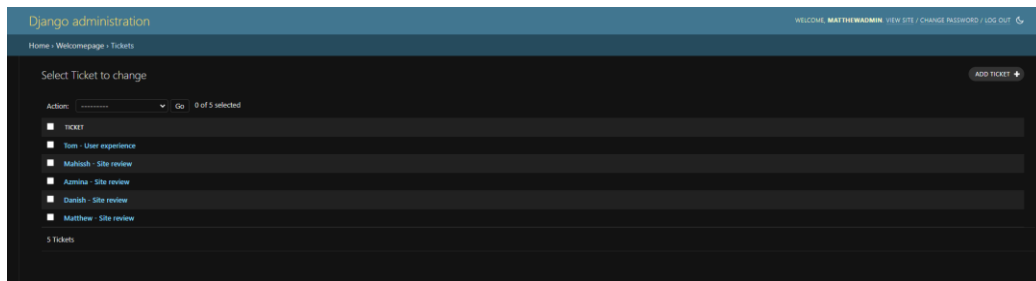
FR 10 -Feedback:

If the user selects this option, the program shall guide them to an offline platform, store feedback and submit them to the development team when the program goes. online.
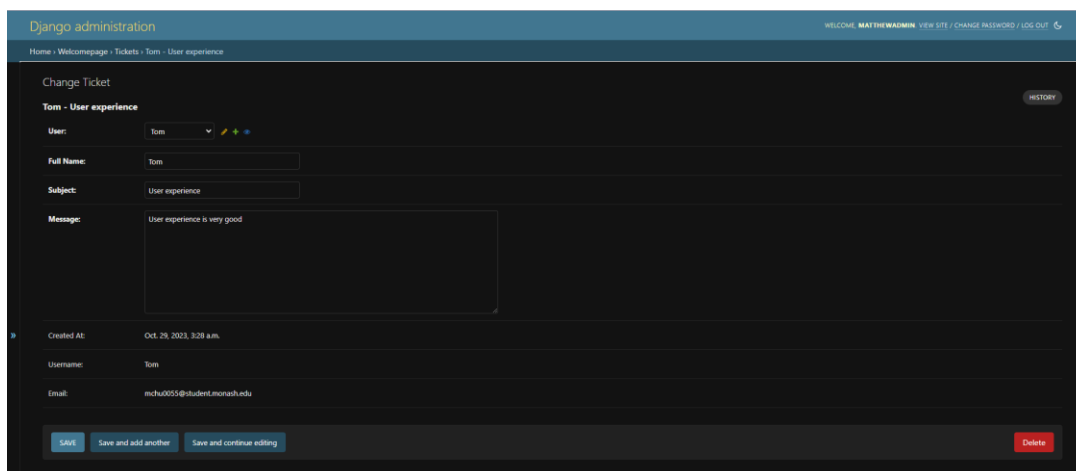

All the feedback received can be viewed in the database.

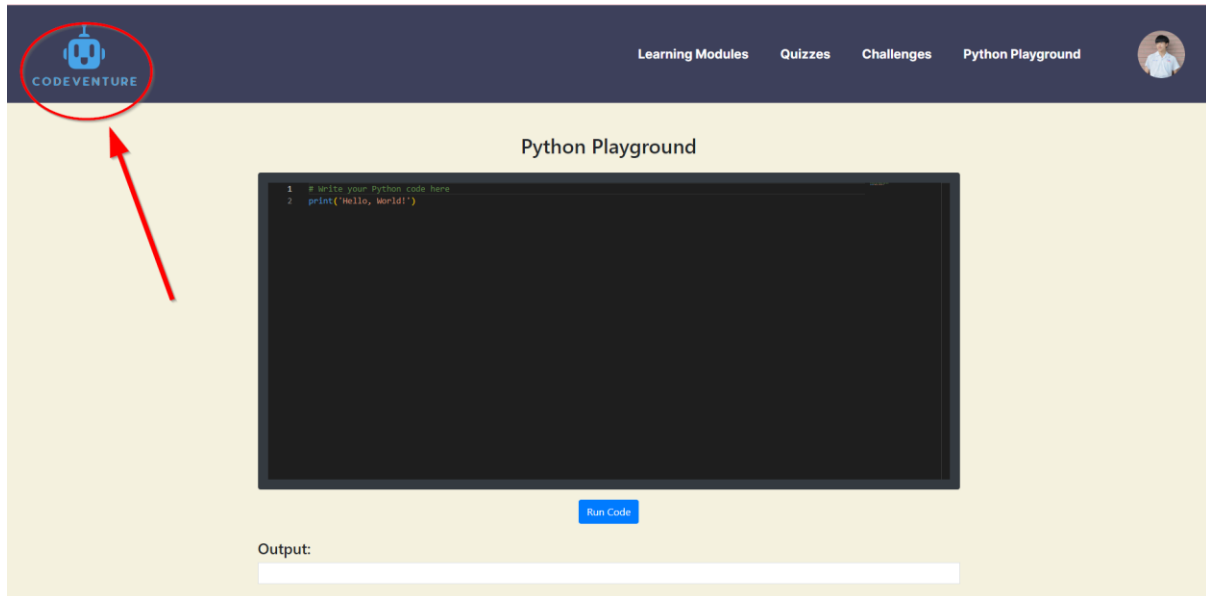## Acceptance Criteria for FR 10:

● The user is directed to a platform where they are prompted to a set of questions regarding the feedback of Code Venture.

● Once answered, the user has the option of submitting it or coming to it. (

● If the user chooses to come back, the answers are saved from the last attempt.

- Information about the feedback received can be found in the admin panel of Django.

FR 11 - Logout Button:
If the user selects this option, the program shall navigate to the previous page, which is the Welcome Page and a different user can sign in.

The logo icon of CodeVenture can be clicked which redirects the user to the WelcomePage.
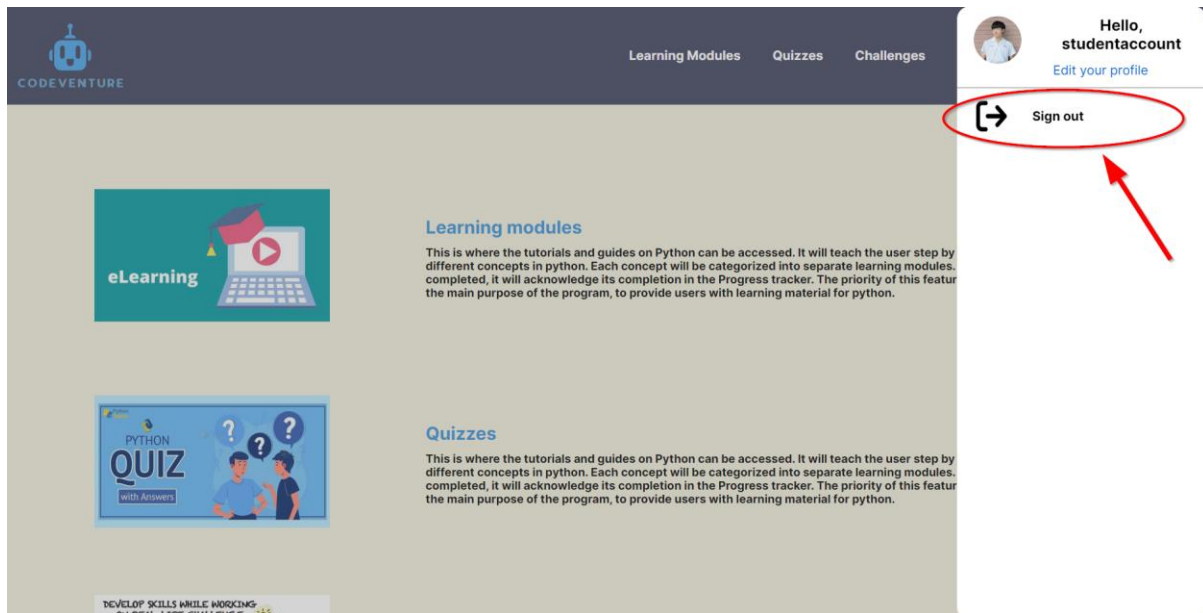

Acceptance Criteria for FR 11:
● When the user clicks this button, a message is shown, saying that they have logged out of the program.
● They are directed back to the login page.

FR 12 - Exit Button:
If the user selects this option, the program shall exit the program entirely.

The sign out button will allow the user to exit the game.

Acceptance Criteria for FR 12:
● When the user clicks this option, a reminder message is shown to ask the user if they wish to fully exit the program.(* not implemented)
● If the user chooses yes, the program shuts down.
● If the user chooses no, they are brought back to the homepage.

FR 13 - Basic Modules:

If the user selects one of the three basic modules, the program will bring the user to the corresponding lesson. Serve as pre-requisites to access other concept modules, ensuring a strong foundation. These modules will be 'Creating a File', 'Variables and Printing' and 'Arithmetic'.
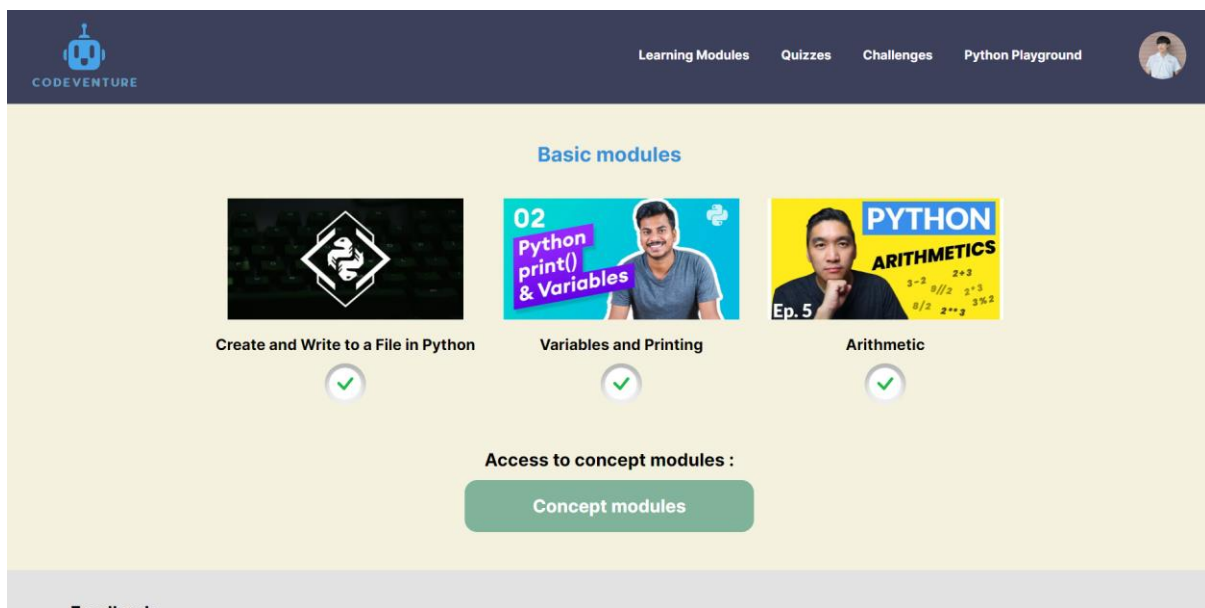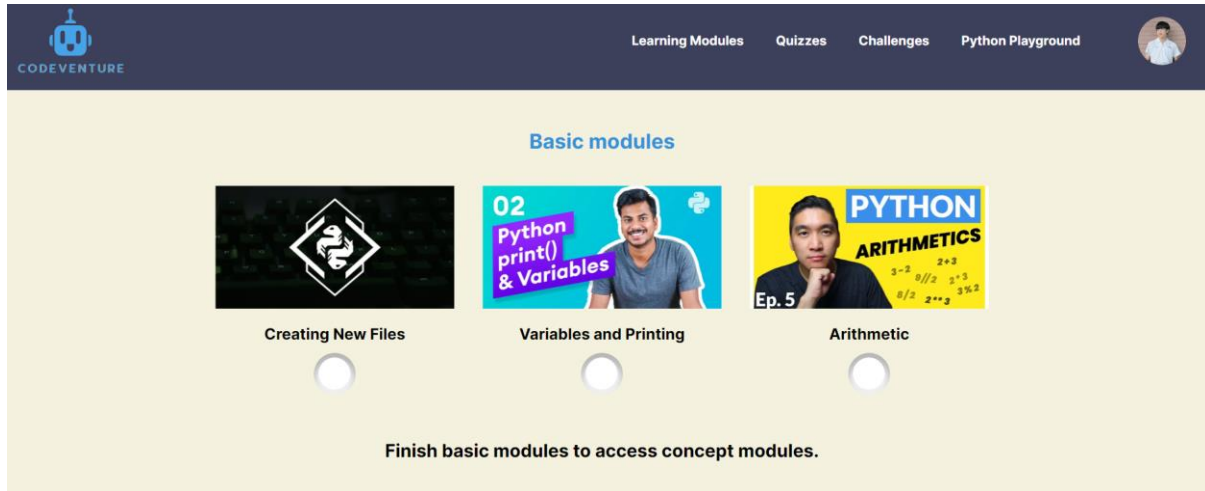
Users have to finish the basic modules to have access to the concept modules.

Acceptance Criteria for FR 13:

● The user is directed to a set of modules which are the very basic concepts in Python Programming.
● The user is directed through the lessons of Creating a File', 'Variables and Printing' and 'Arithmetic'.
● This is a progress checkpoint/milestone, as the user has to have to finish these activities in order to satisfy the requirements for the module.
● The progress of the user will be saved after each attempt.

- Upon completion of the basic module, the concept module button is revealed.

FR 14 - Concept Modules:
If the user selects a concept module, the program will bring the user to that lesson, only.
if the user has completed all the Basic Modules.
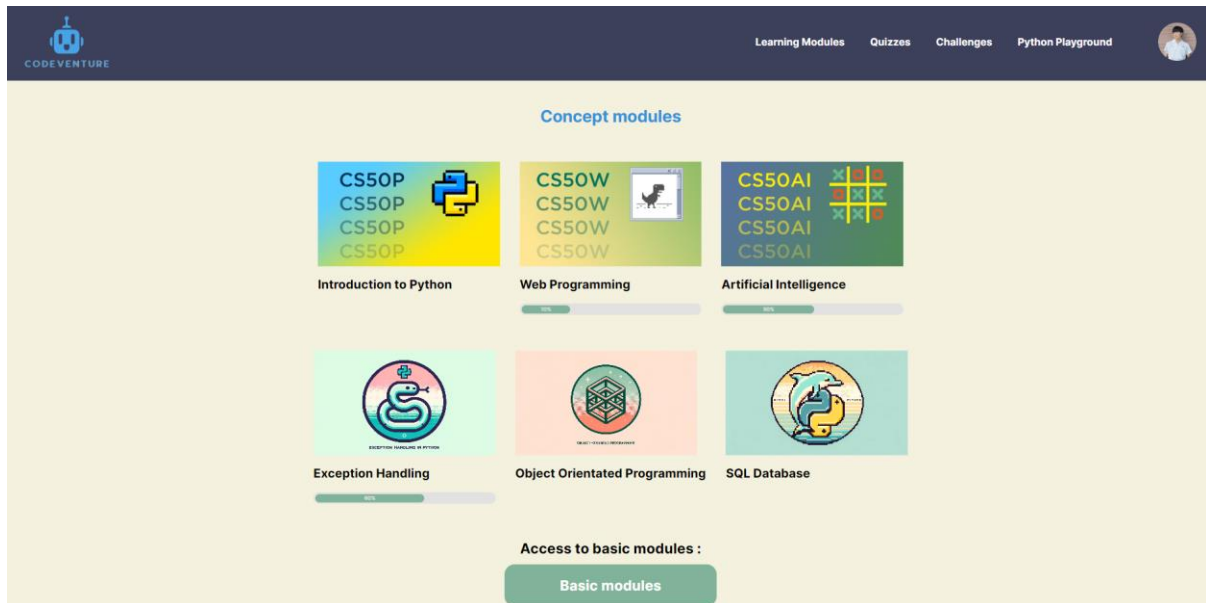
Acceptance Criteria for FR 14:
● The user is directed to a set of modules, which consist of the intermediate and advanced concepts in Python.
● This module can only be accessed by those who have completed the Basic Module.
● The user's progress in this module is saved after each attempt.

-Users can access the concept modules they wish to, provided they have completed the basic modules.

FR 15- Sub Modules:

If the user selects any learning module, the program breaks down complex concepts into easier to understand parts. Users can navigate through sub modules within a module.
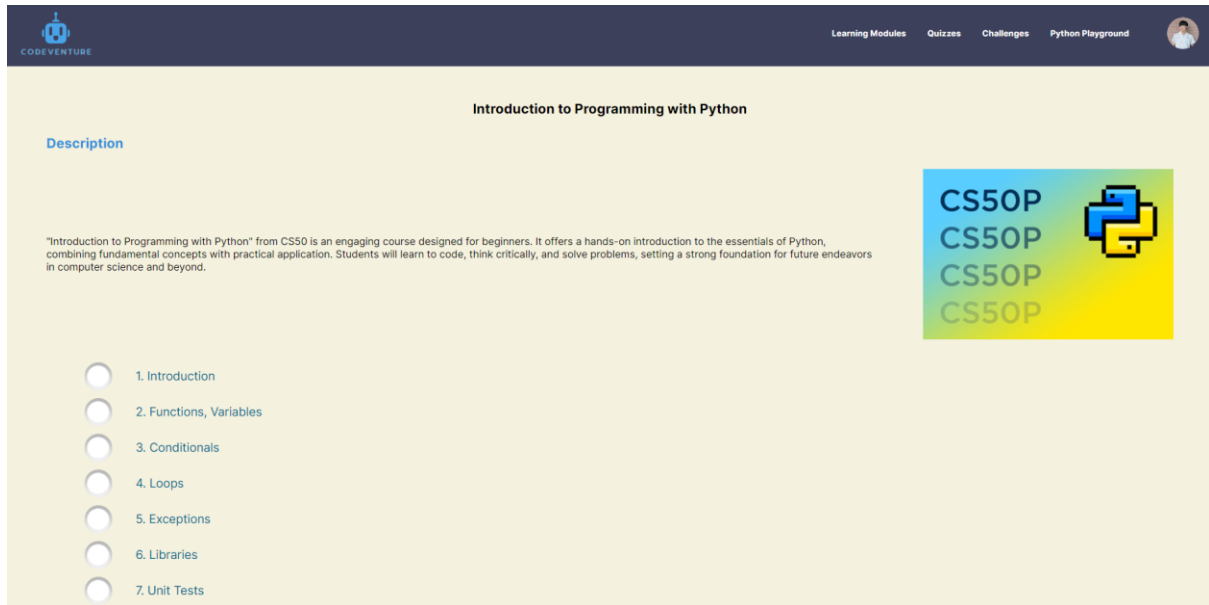
Acceptance Criteria for FR 15:

● These are subsections to the modules in REQ 13 and REQ 14.
● These are subtasks broken down within the activities in the modules in REQ 13 and REQ 14.
● The user's progress in these subtasks is saved after each attempt.

- The submodules list is available when you click on the concept module, this feature allow users to access submodules which have a more in-depth view about the concept module.

FR 16- Step by Step Tutorial Videos:

The program shall allow a pre-recorded video as a learning module if the user selects this option. These videos shall be divided the same way as the Basic Modules, Concept Modules and Submodules are categorized.
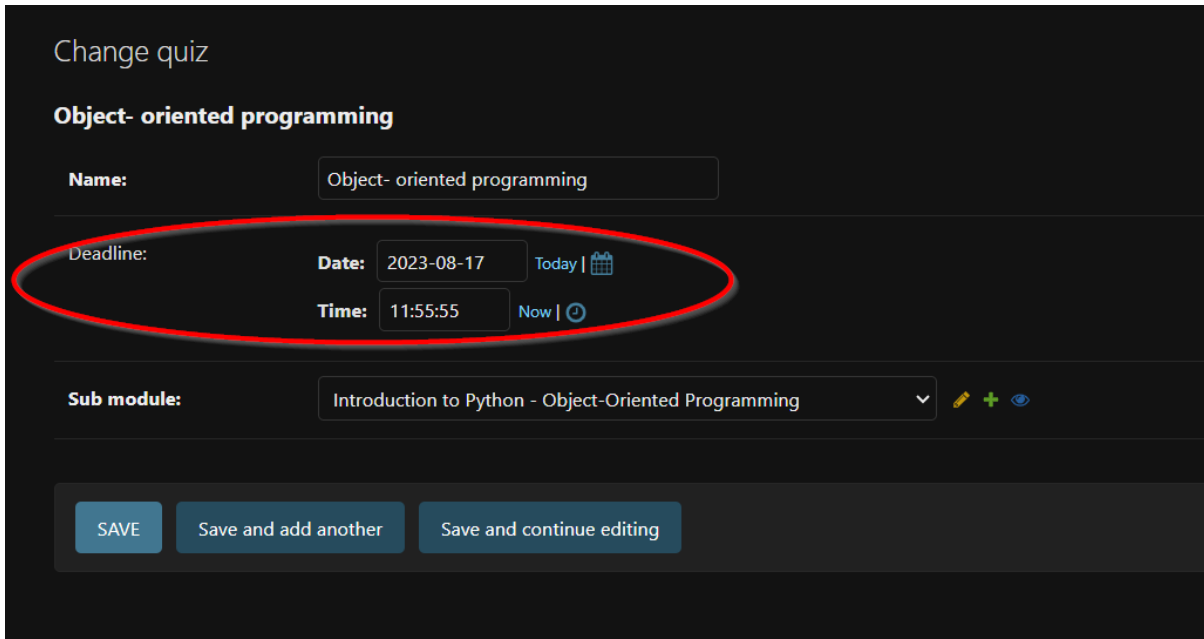

Acceptance Criteria for FR 16:
● The user can view step by step tutorial videos before progressing through the modules, to obtain an introductory introduction of the concepts covered in the modules.
● The videos will have subtitles to assist hearing impaired users.
● The videos will not be any longer than 5 minutes.
● The videos will include code examples related to each concept.

- An introductory video allows the user to have a basic understanding of a specific Python programming concept. The video has been created to help the students grasp fundamental concepts in a visual and engaging manner.

FR17 - Optional Deadline Setting for quizzes/challenges:
The program shall allow admins to set up deadlines for users to complete quizzes and challenges, and the subsequent learning modules needed, to allow consistency of progress.
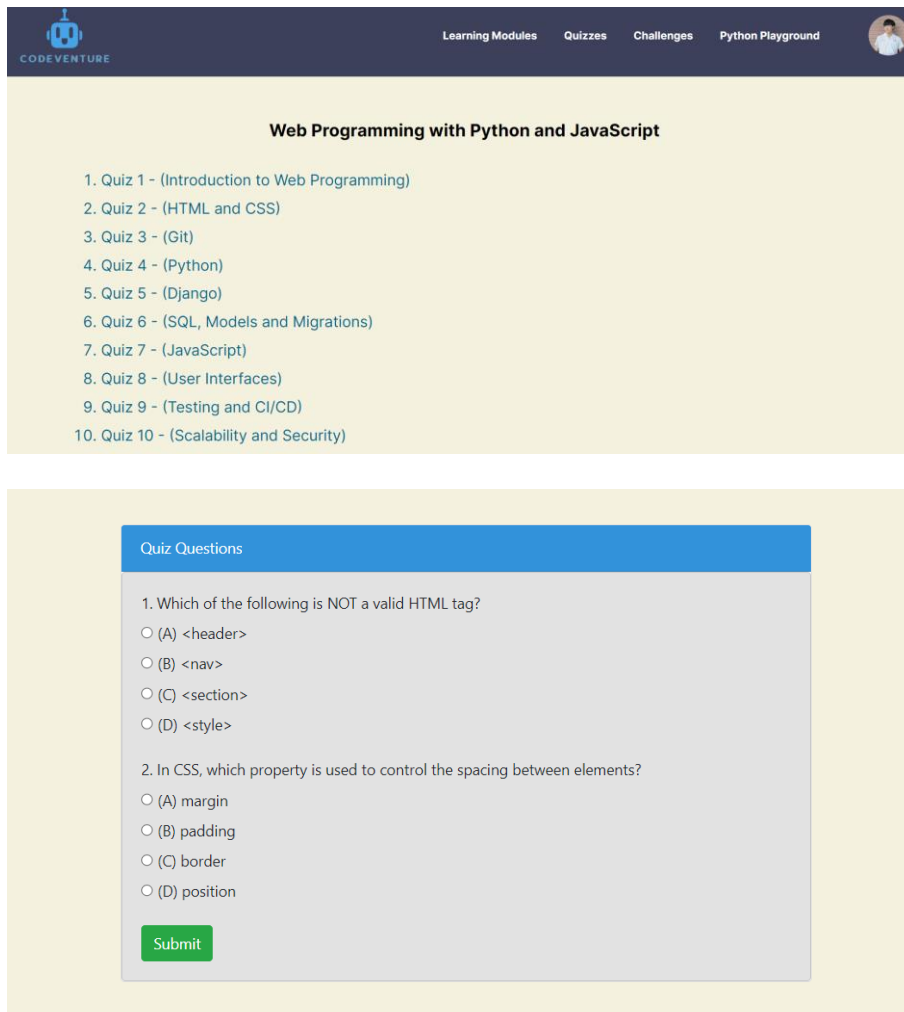

Acceptance Criteria for FR 17:
● The parent of the user can assign deadlines when logged in to their account.
● The parents can specify the date and time for the deadline of each module.
● Any modifications to deadlines by the parent will be instantaneously notified to the parents themselves as confirmation.

-Users are not allowed to attempt quizzes which are passed the deadline set.

FR 18 - Quizzes:

User navigates through a variety of different quizzes and selects a concept to test their understanding. The program shall display the quiz in a mixture of multiple-choice questions and fill in the blank's (* not implemented) questions related to the concept.

Acceptance Criteria for FR 18:

- The user can access a set of quizzes to consolidate and test their understanding from the modules.
- The user will be prompted to multiple choice questions which may have more than one answer for certain questions.
- The user will also be prompted to attempt, fill in the blanks type questions where they may have to type the correct answer in blank boxes and/or pick up and drop down answer blocks into the blank spaces.

- As they progress through a quiz, incorrect answers may attract deduction in points and correct answers will be rewarded points.

FR 19 - Challenges:

User chooses a challenge, and the program shall present them with a problem scenario that the user must solve by writing Python code related to that concept.

Acceptance Criteria for FR 19:

- The user can access problem sets of python coding challenge tasks where they are prompted to solve the problems as per the task brief.
- These problem sets are accompanied with a blank python file to solve these problems.
- The user can also save their progress after each attempt and are not restricted to a time limit to complete these problem sets.

-A "Show Solution" button has also been added in case the student wants to see the solution for the challenge.

FR 20 - Scores and Results:

If a user completes a quiz or challenge, the program will calculate the percentage of answers the user answered correctly allowing the user to gauge their level of understanding on the topic.

User's score for that specific quiz is displayed and the user can view a summary of the quiz's previous attempts.

FR 21 - Feedback:
After the user views the Scores and Results, the program will instantaneously provide
feedback and the correct answers or a proposed solution to the problem.

-**C**ustom feedback are provided to the students based on their score results.

FR 22 - Progress Bar:
If the user has completed a Learning Module or Sub Module, the bar shall fill up to indicate the user's overall progress.
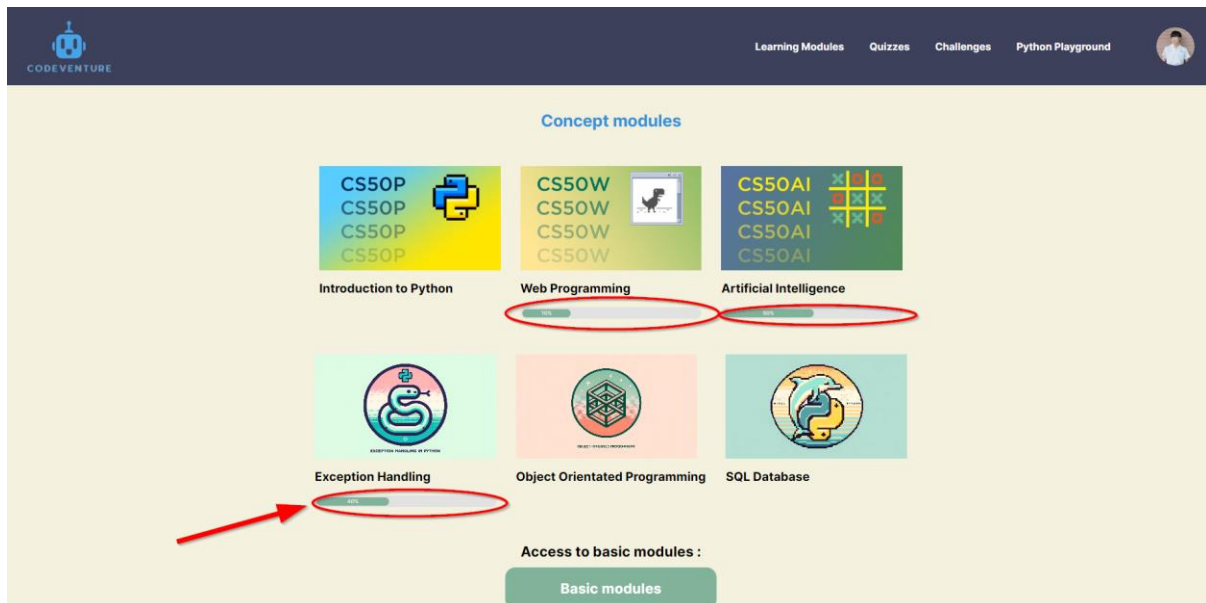
-The progress bar allows the user to keep track of his progress for that specific learning modules and can always go back to the learning module if needed,

FR 25 - Progress report to admins:
The program shall allow admins to download a progress report of each user if the admin selects this option. The program shall prompt the admin to enter their username and password in order to access this feature if selected.
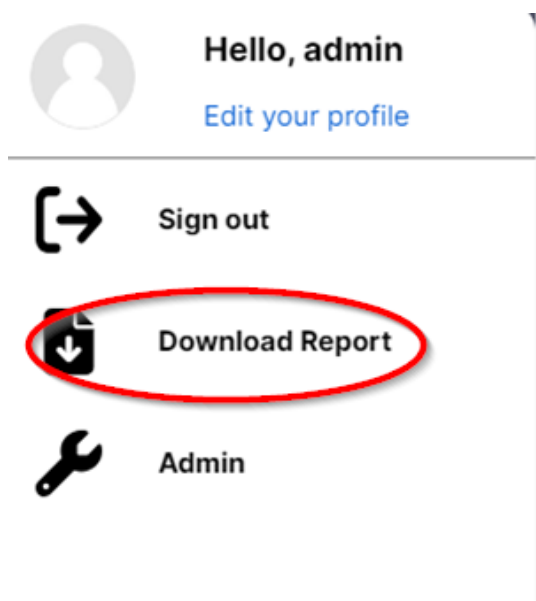
Progress Report for admin

Overall Progress: 35.23%

Module: Basic Modules

Progress: 100.00%

Completed Submodules:
- Creating New Files
- Variables and Printing
- Arithmetic

Module: Introduction to Programming with Python

Progress: 9.09%

Completed Submodules:
- Introduction

-Admin are able to view and download progress reports of specific users.