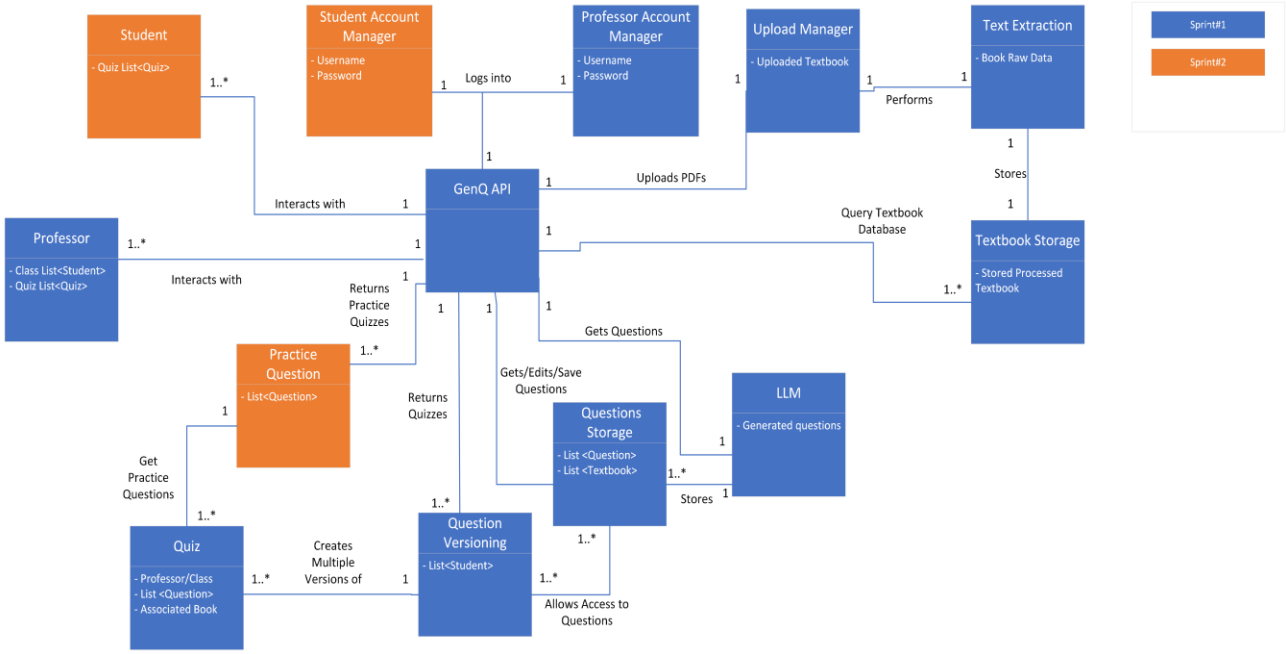
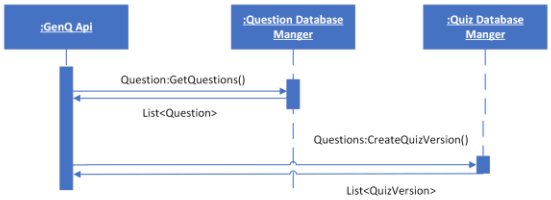
1. Domain Model

Updated concepts and associations are highlighted in orange



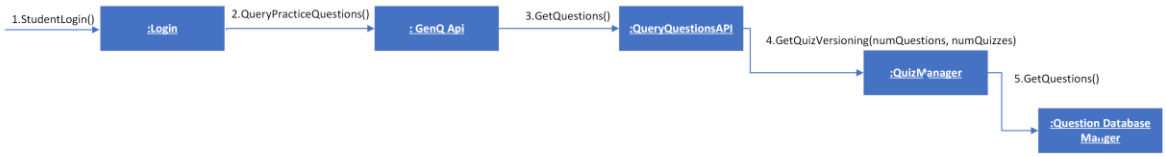
2. Interaction Diagrams

Instructor User Story #3: Version Quizzes



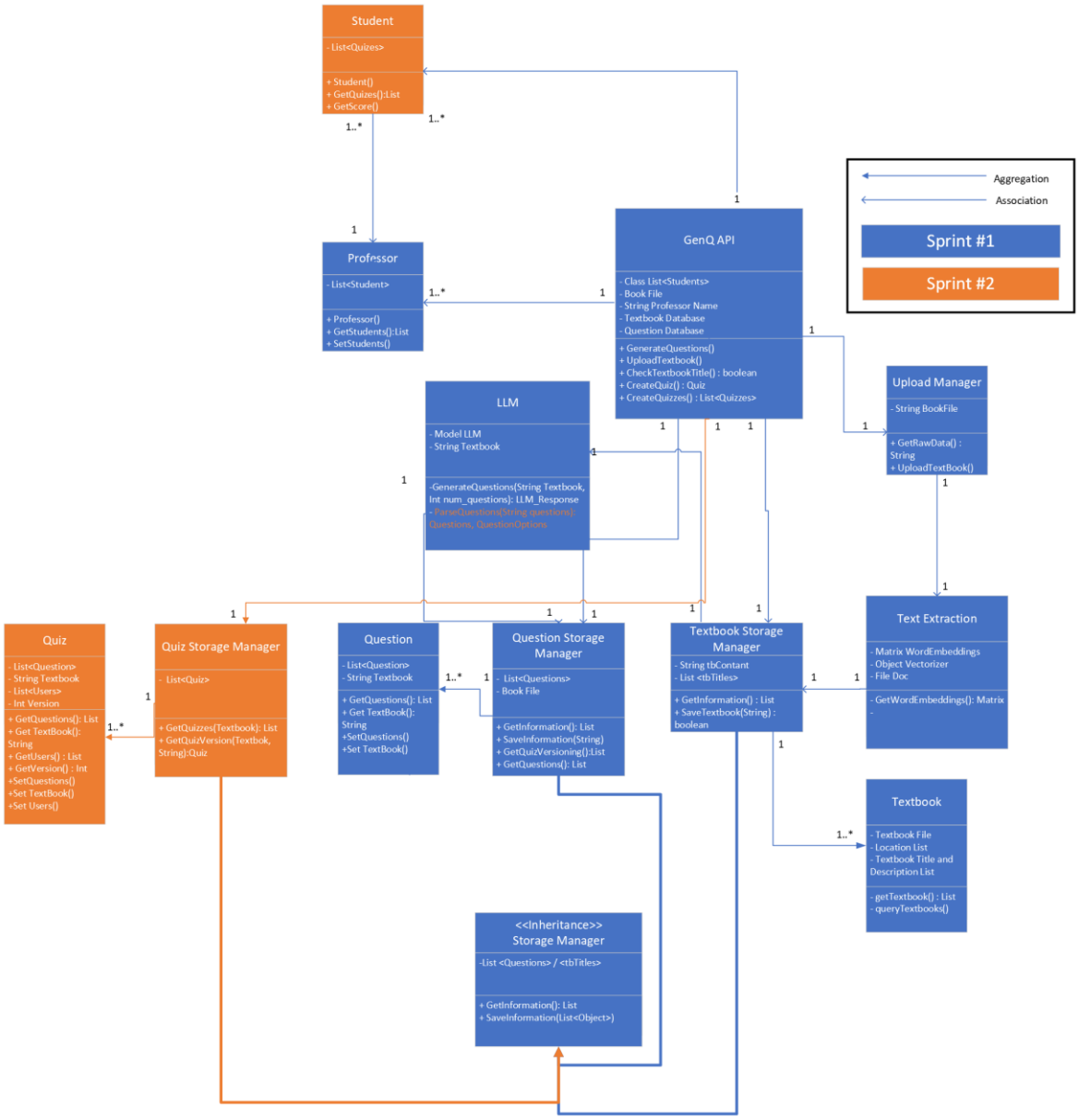
Instructor User Story #6: Instructor Edits Generated Questions

Student User Story #1: Student Access Sample Questions



Instructor User Story #5: Instructor Choices Student Sample Questions

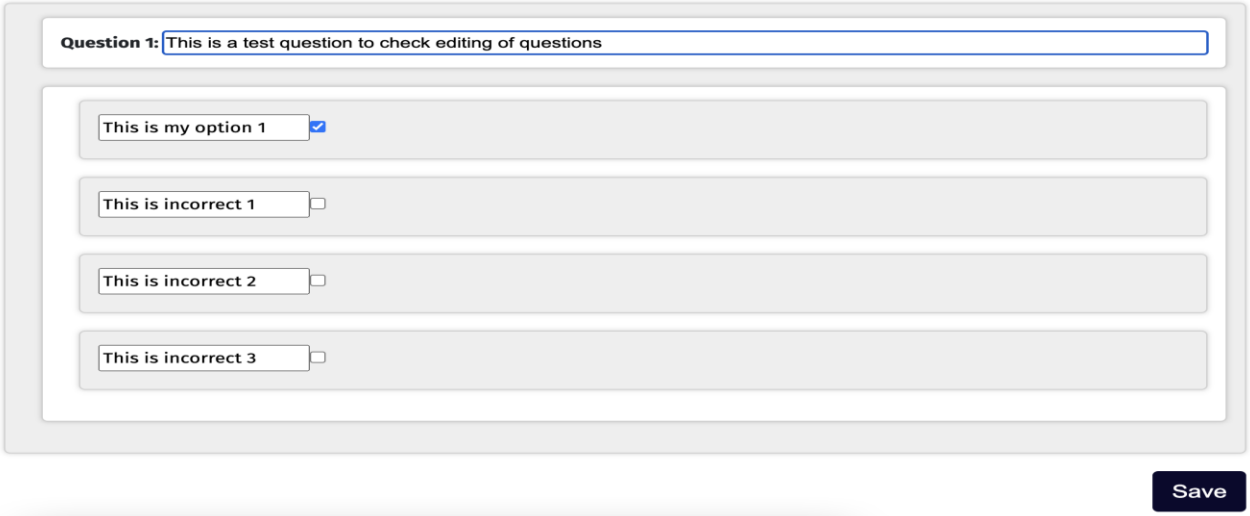
3. Design Class Diagram



4. Demo Working Product System

a. Instructor US#6: Instructor Edit Generated Questions

Once the questions have been generated, Instructor sees the questions and options in an editable format. Instructor has the option to edit the question and also the choices can be edited by the instructor. The figure below demonstrates the page which has generated questions.



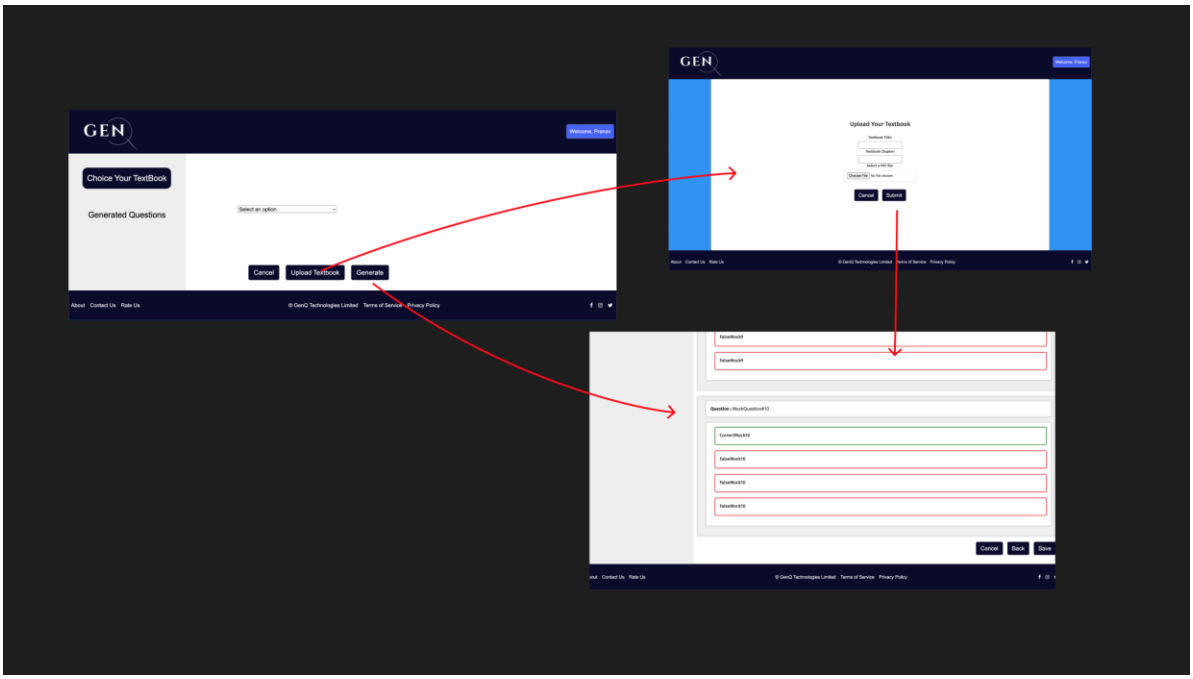
After Instructor edits the question and options and saves them, they are saved into the database and are now viewable as the edited questions and options.

b. General User Story: Integrating Generating Question with Uploaded textbook & Integrate LLM API with Model

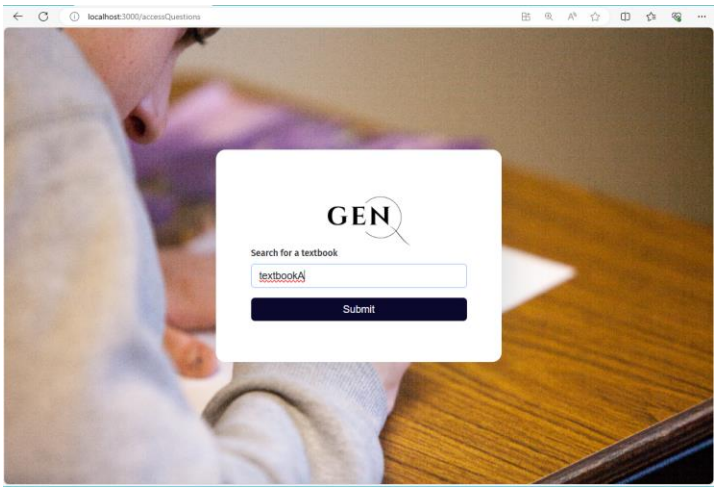
A new process has been created to capture all the textbooks that exist in the backend, where the user has the choice of either uploading a new textbook or choosing an

existing uploaded textbook. The figure below is an updated page with a list of textbooks for the instructor to choose from.

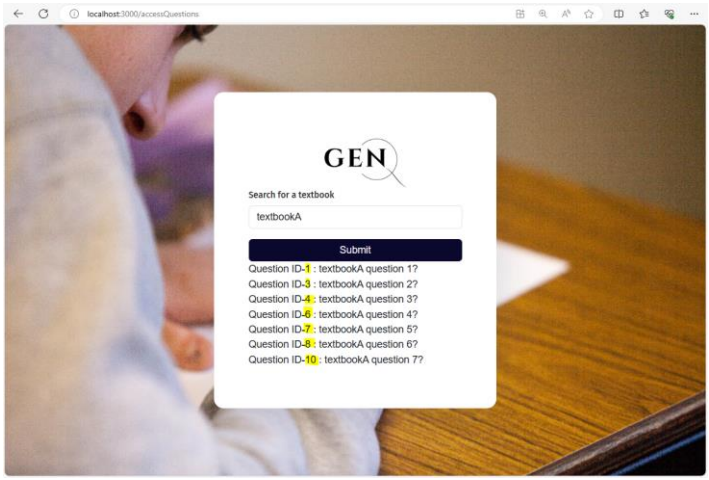
The other option is uploading a new textbook and instantly generating questions as shown below.



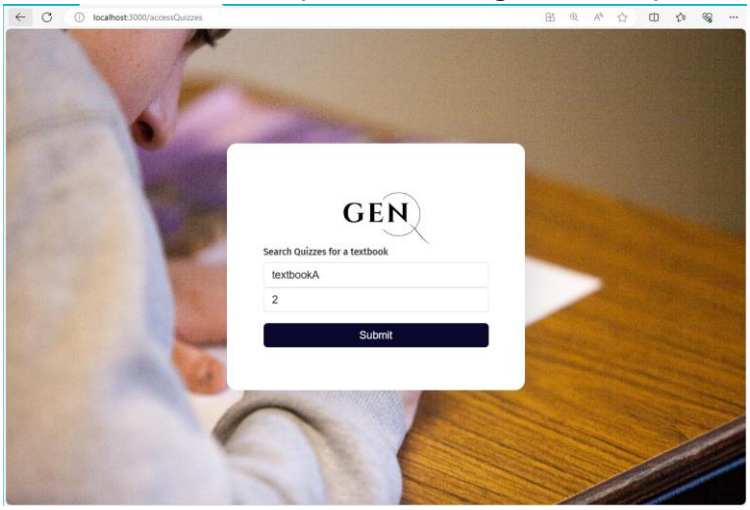
c. Instructor US#3: Instructor Quiz Versioning



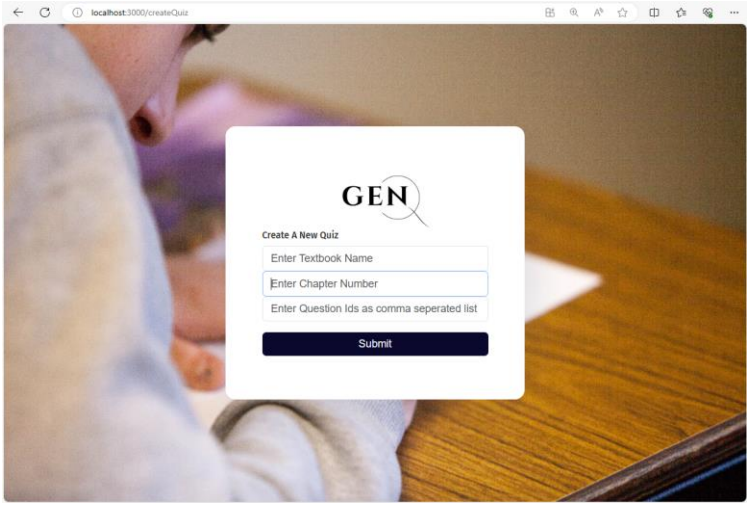
First, the instructor enters the textbook name to find all the questions available



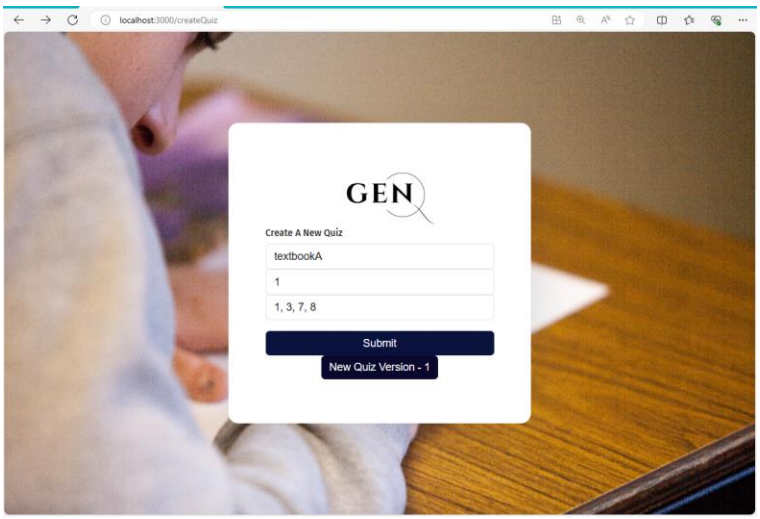
This returns a list of questions along with the question ID associated with that textbook



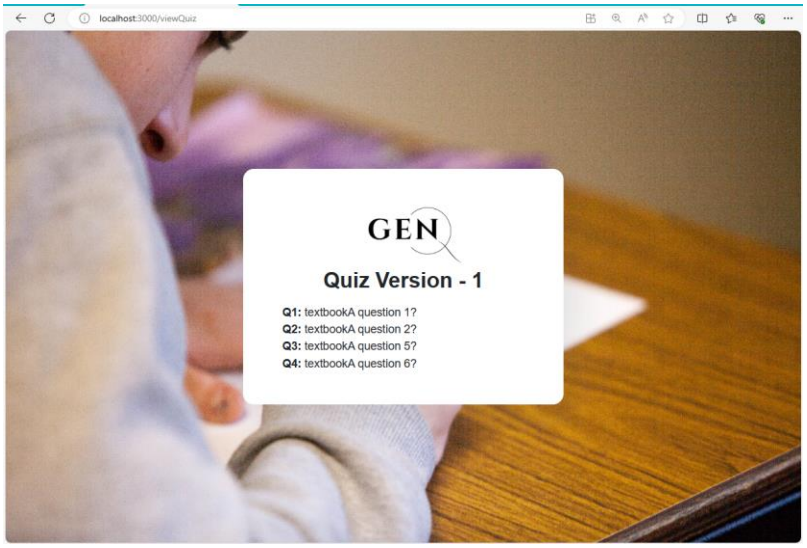
If we check in our database, we see that if we search for quizzes for any textbook name and chapter, we have no results.



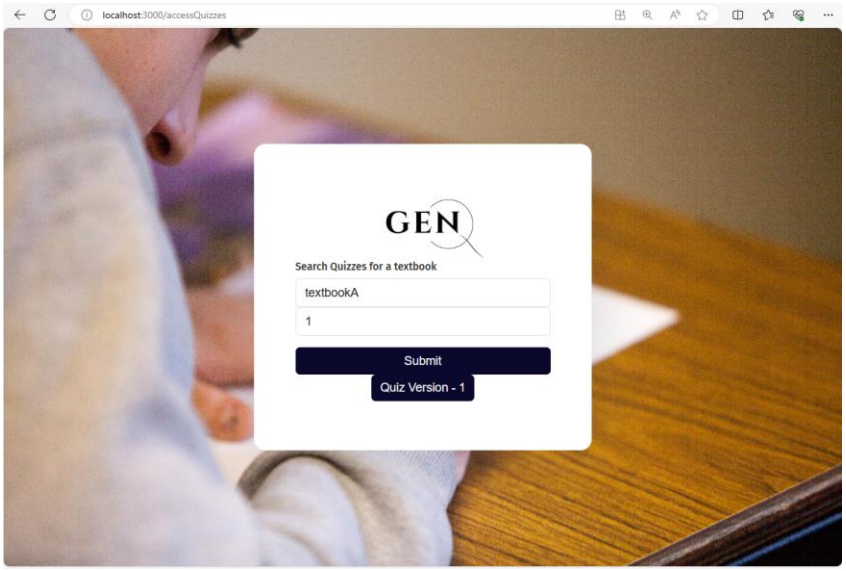
We then navigate to the “createQuiz” page, which provides the above form.



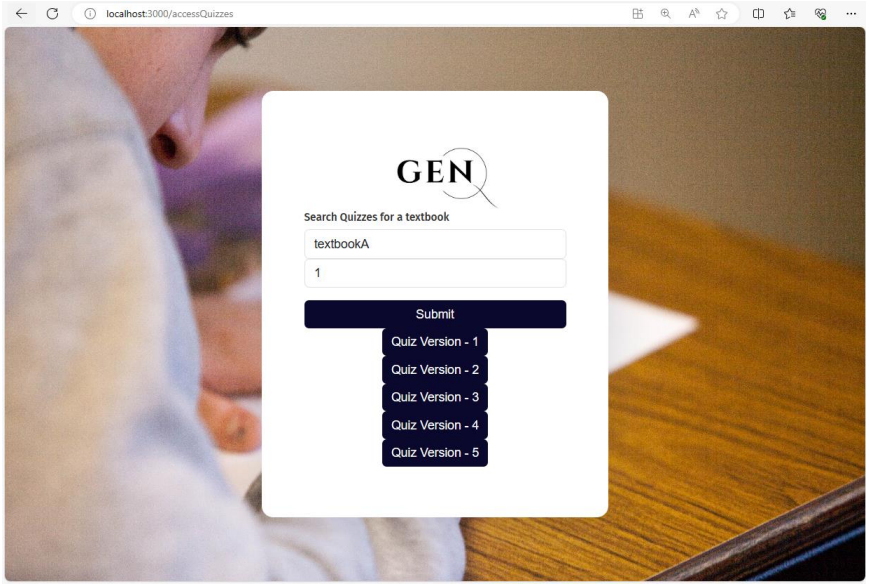
Once you enter the textbook name, chapter number, and the question IDs you want to include in the quiz, you hit submit, and get a link to the new Quiz. Note that as a safety check, if the question ID is not associated with the textbook, then it will not be add to the quiz.



Clicking on the button takes you to a new page which allows you to view the quiz. This includes the version, and the questions associated with it.



If we return back to the “accessQuizzes” page, and search for the textbook and chapter, that new version now shows up when we search.



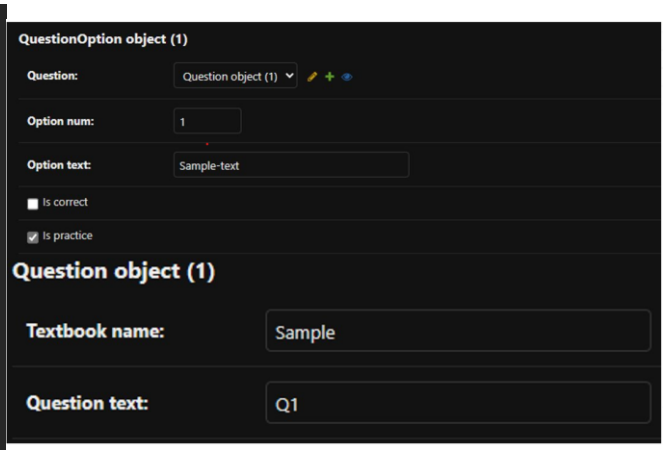
We can create multiple versions of the quiz, and when we search for the textbook and chapter, they all show up as a link so that you can look at that quiz version.

d. **Instructor US#5: Instructor Choices Student Sample Questions**

i. **First the instructor submits an API request to either create a new practice question or update and existing question and mark it as practice.**

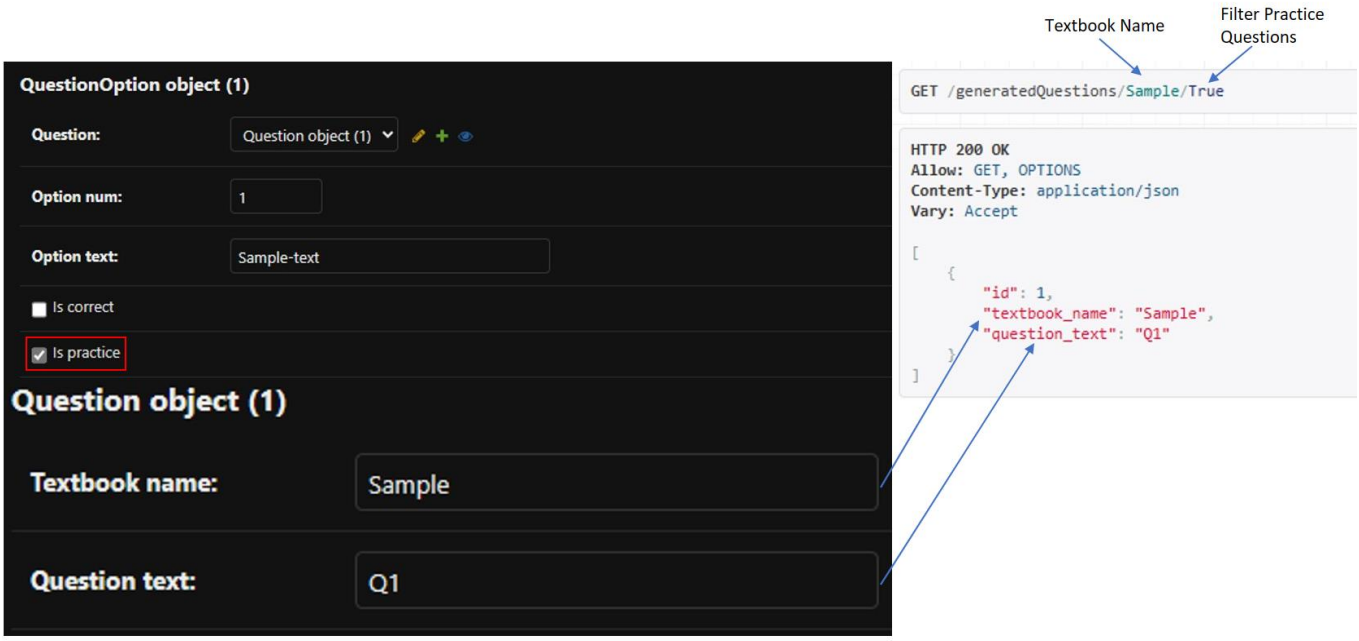
```
{
        "Question":
                {
                "Textbook Name":"Sample",
                "Question text":"Q1"
                },

        "QuestionOption":
                {
                "Option num":"1",
                "Option text":"Sample-text"
                "is_correct":"False"
                "is_practice":"True"
                }
}
```



ii. **(Left) Question data in Post request. (Right) Resulting question and option in the database.**

iii. **We can see in the database that the question is successfully marked as a practice question. The question fields match the information passed in the API request. Once the question is marked as practice, instructors can filter questions by textbook and if the question is marked as a practice question with an API request.**



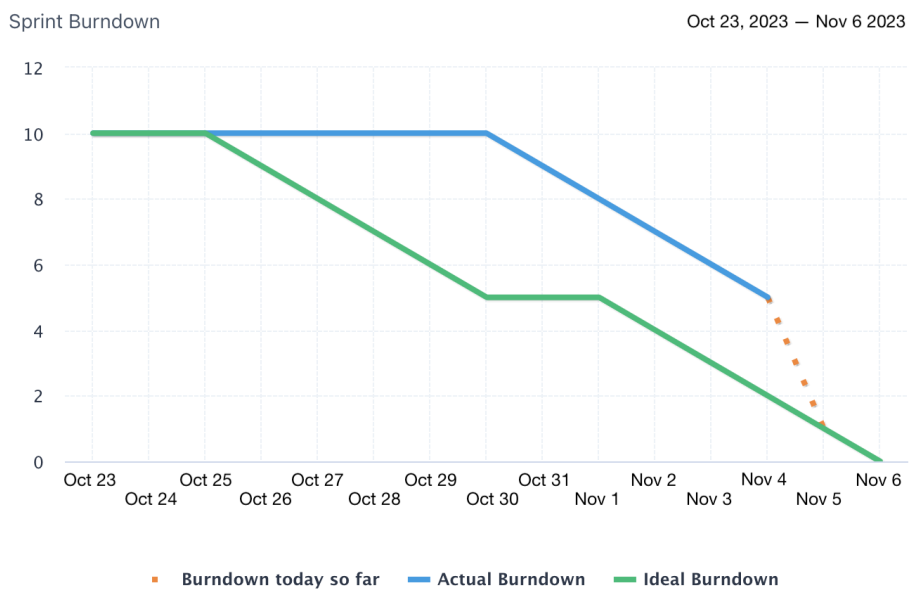
iv. **On the left we can see the question option and associated question which has the textbook "sample" and text "Q1". The question option marks the object as a practice field. On the right side the GET request passes in the desired textbook name and if to return practice questions. The correct question is returned from the API request.**

5. <u>Scrum</u>

- Sprint#2 User Stories:
  - General User Story: Integrating Generating Question with Uploaded textbook (2)
  - General User Story: Integrate LLM API with Model (3)
  - Instructor US#3: As an instructor, I want to be able to create numerous versions of a quiz to reduce cheating (3)
  - Instructor US#5: As an instructor, I want to select and upload sample questions to the student portal so that they can have practice questions. (3)
  - Instructor US#6: As an instructor, I want to edit generated questions so that I can ensure questions are up to the standard that I have. (5)
  - Student US#1: As a student, I want to access practice exams so that I can practice for my class's exams/quizzes. (5)

- Student US#3: As a student, I want to view my past practice exam scores so that I can gauge my progress. (3)

Sprint 2 burndown chart:



Sprint retrospective

Did you implement all of the user stories you specified on the product roadmap for this release? If not, why not?

We did all the user stories except for Student US#3 Student sees sample question questions scores and Student US#1 Student Accesses Sample Questions. Student US#3 & Student US#1 depended on two other user stories (Instructor US#5, Student US#1) making it very difficult to implement from the start of the sprint. We were able to finish

both Instructor US#5 and Student US#1 in sprint time but it was at a time where we could not take Student US#3.

What impediments did you encounter? How did you address them?

- Database migrations: lack of clarity on how to update tables
    - Solution: provide clearer documentation on when/how to use database

What went well?

- Good intra-team communication (frontend)
- Time dedicated to other teammates
- Healthy balance of independent troubleshooting in addition to reaching out for help
- MR process has improved
- Meeting up increased troubleshooting efficiency
- Intra-team planning helped not waste time

What could be improved?

- Reaching out for help earlier, wasted some time
- Document steps to run on MRs
- Start earlier

- Product backlog (updated)
    - Added User Stories
        - General User Stories:
            - Integrate LLM API with model
            - Integrate generated questions with uploaded textbook
            - Student Login Functionality

- Issue Tracking

    - Gitlab Issue tracking [LINK]

- Sprint 3 backlog: ￼
  Targeted Sprint#3 User Stories (Currently 26):

- **Student US#3:** As a student, I want to view my past practice exam scores so that I can gauge my progress. (3)
- Instructor Story 4: As an instructor, I want to export generated tests to a printable format so that I can distribute them to students offline. (3)
- Instructor Story 9: As an instructor, I want to start quizzes at certain times of the day so that I can make sure all students take the quiz at the same time. (3)
- Instructor Story 11: As an instructor, I would like to see usage and performance reports for my tests/quizzes so that I can gauge student performance and usage (5)
- Student Story 2: As a student, I want to report questions that seem to have an incorrect answer so that my instructor can fix the question/answer. (3)
- General Story: Random assigning of quizzes to students and student access to quiz (assigned by quiz version) (5)
- Student US#1: Student Accesses Sample Questions (3)