Master Team Project Summer 2024

“Eduly”

Milestone 4

Team 2

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Date: 09.07.2024

Date Submitted	Date Revised
09.07.2024	-

Product Summary

Product Name

Eduly

List of committed P1 functions

The app should allow an **administrator** to:

1. View the list of tutors' profile image, intro video & CV where approval is pending.
2. View the list of students' profile images where approval is pending.
3. Approve/delete the above content before going live.
4. Ban malicious users.

The app should allow a **visitor** to:

5. Search for tutors and view tutor cards with basic details.
6. View community forum questions and answers.
7. Register as a tutor or a student with their Fulda University email address.

The app should allow a **student** to:

8. Log in to the application.
9. Search for tutors based on various parameters such as pricing, ratings, availability (days of the week), topic and language of instruction.
10. Sort the tutors based on pricing, ratings or popularity.
11. View the introductory video of the tutor, CV, reviews and calendar.
12. Book sessions by selecting the date and time [**UNIQUE**].
13. Send/read messages to/from a tutor.
14. View upcoming appointments: [**UNIQUE**]
    a. Join the meeting with the tutor's BigBlueButton (webconf.hs-fulda.de) personal meeting room link.
    b. Cancel the scheduled meeting.
15. Write a review & rate the tutor.
16. Edit profile image.

The app should allow a **tutor** to:

17. Sign up or log in to the application.
18. Create a profile with all the necessary information like:

    a. Topics, intro text, pricing, language of instruction
    b. BigBlueButton(webconf.hs-fulda.de) personal meeting room link.
    c. Schedule [**UNIQUE**]
    d. CV
    e. Intro Video [**UNIQUE**]
19. Edit the above profile details.
20. Send/read messages to/from a student.
21. View reviews by students.

The app should allow **students and tutors** to use Community Forums [**UNIQUE**]:

22. Post questions in the community forum.
23. Post answers
24. View questions and answers posted by others.

URL to access the app

http://20.56.148.2/

Usability Test Plan

Test Objective

The **search function** is being tested. Testing the tutor search function is crucial because it directly impacts user experience and satisfaction. The search function is a primary tool for users to find and connect with the right tutors efficiently. Users may become frustrated and abandon the site if the search feature is not intuitive or accurate, leading to decreased engagement and potential revenue loss. By thoroughly testing this function, we can identify and resolve any usability issues, ensure relevant and precise search results, and ultimately enhance our platform's overall effectiveness and reliability.

Test Background and Setup

The user opens the app hosted at http://20.56.148.2/ on a desktop using Google Chrome or Mozilla Firefox. The starting point for this test is the homepage where the user has created an account and logged in. The intended user of this test is any student or employee at Fulda University looking for a tutor to learn something.

Usability Task Description

Description

- Imagine that you are struggling with Physics and looking for a good tutor to help you.
- You are willing to spend between 10 Euro to 20 Euro per session.
- You are also free only on Sundays.
- You prefer the language of instruction to be French.
- Given these requirements, try to find a tutor who fits your needs!

Effectiveness Measure

We measure effectiveness by checking if the user found the tutor he sought.

Efficiency Measure

We measure efficiency by checking how long the user took to perform the task.

Questionnaire

1. How easy was it to find and use the search function on the website?

1 Very difficult

2 Difficult

3 Neutral

4 Easy

5 Very easy

2. How relevant were the search results to your query?

1 Not relevant at all

2 Slightly relevant

3 Moderately relevant

4 Very relevant

5 Extremely relevant

3. How satisfied are you with the speed and performance of the search function?

1 Very dissatisfied

2 Dissatisfied

3 Neutral

4 Satisfied

5 Very satisfied

Test Results

User 1:

- **Effectiveness Measure:**
  - Yes, I found a tutor who fits my needs.
- **Efficiency Measure:**
  - It took me approximately 3 minutes to find a suitable tutor.

Questionnaire:

- How easy was it to find and use the search function on the website?
  - 5 Very easy
- How relevant were the search results to your query?
  - 4 Very relevant
- How satisfied are you with the speed and performance of the search function?
  - 5 Very satisfied
- Additional Comments:
  - The search function was intuitive, and the results were quite accurate. Did not observe any noticeable delay.

User 2:

- **Effectiveness Measure:**
  - Found a tutor as per given prompts.
- **Efficiency Measure:**
  - It took me 1 min.

Questionnaire:

- How easy was it to find and use the search function on the website?

    - 5 Very easy
- How relevant were the search results to your query?
    - 3 Neutral
- How satisfied are you with the speed and performance of the search function?
    - 5 Very satisfied
- Additional Comments:
    - It was easy and quick to search. But I would like it if there were more Tutors available for my given parameters.

User 3:

- **Effectiveness Measure:**
    - Yes, I found a tutor who fits my needs.
- **Efficiency Measure:**
    - It took me 30 sec.

Questionnaire:

- How easy was it to find and use the search function on the website?
    - 5 Very easy
- How relevant were the search results to your query?
    - 4 Very relevant
- How satisfied are you with the speed and performance of the search function?
    - 5 Very satisfied
- Additional Comments:
    - It is good that users can search and filter tutors even without logging in. Search is straightforward.

User 4:

- **Effectiveness Measure:**
    - Yes, I was able to find a tutor as per the specified requirements.
- **Efficiency Measure:**
    - I spent around 2 minutes to find the tutor.

Questionnaire:

- How easy was it to find and use the search function on the website?
    - 4 Easy
- How relevant were the search results to your query?
    - 5 Extremely relevant

- How satisfied are you with the speed and performance of the search function?
    - 4 Satisfied
- Additional Comments:
    - I liked the search function as it is minimalistic yet feature rich.

User 5:

- **Effectiveness Measure:**
    - I found the right tutors although after a bit of struggle.
- **Efficiency Measure:**
    - I needed 4 minutes to find the correct person.

Questionnaire:

- How easy was it to find and use the search function on the website?
    - 3 Neutral
- How relevant were the search results to your query?
    - 4 Very relevant
- How satisfied are you with the speed and performance of the search function?
    - 5 Very satisfied
- Additional Comments:
    - The search function wasn't immediately apparent to me as I thought I didn't have to click the search button, but in the end, the results were very good and were tailored to my requirements.

User 6:

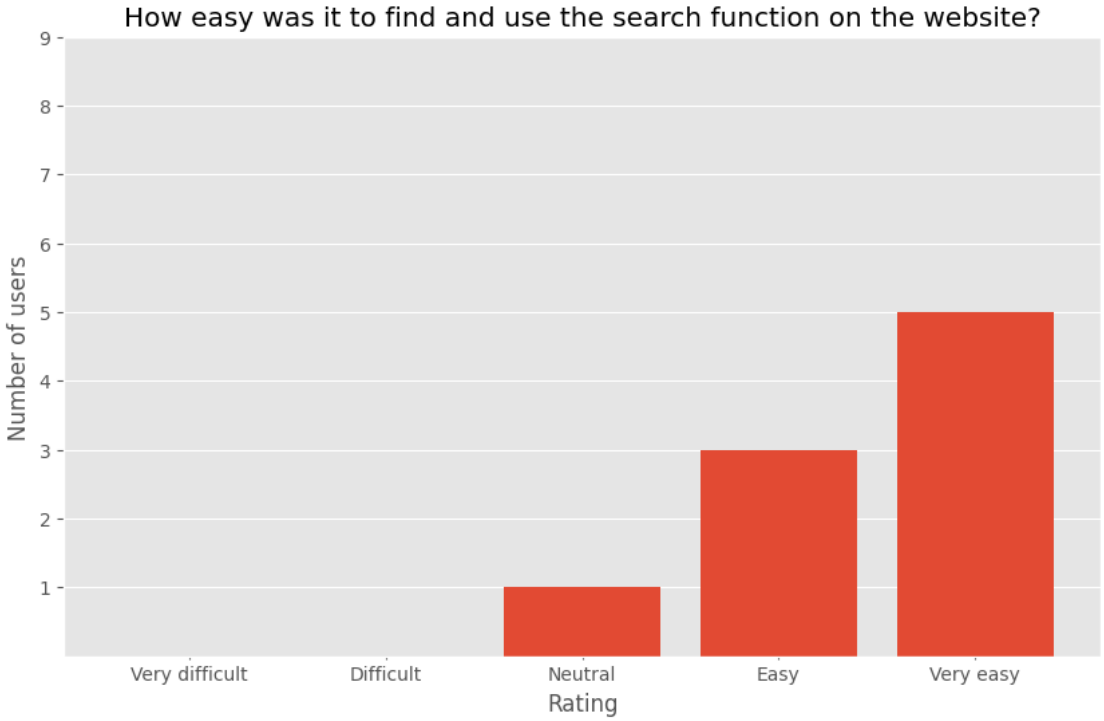
- **Effectiveness Measure:**
    - Yes, I found the right tutor for me.
- **Efficiency Measure:**
    - It took around a minute or two to find the right tutor.

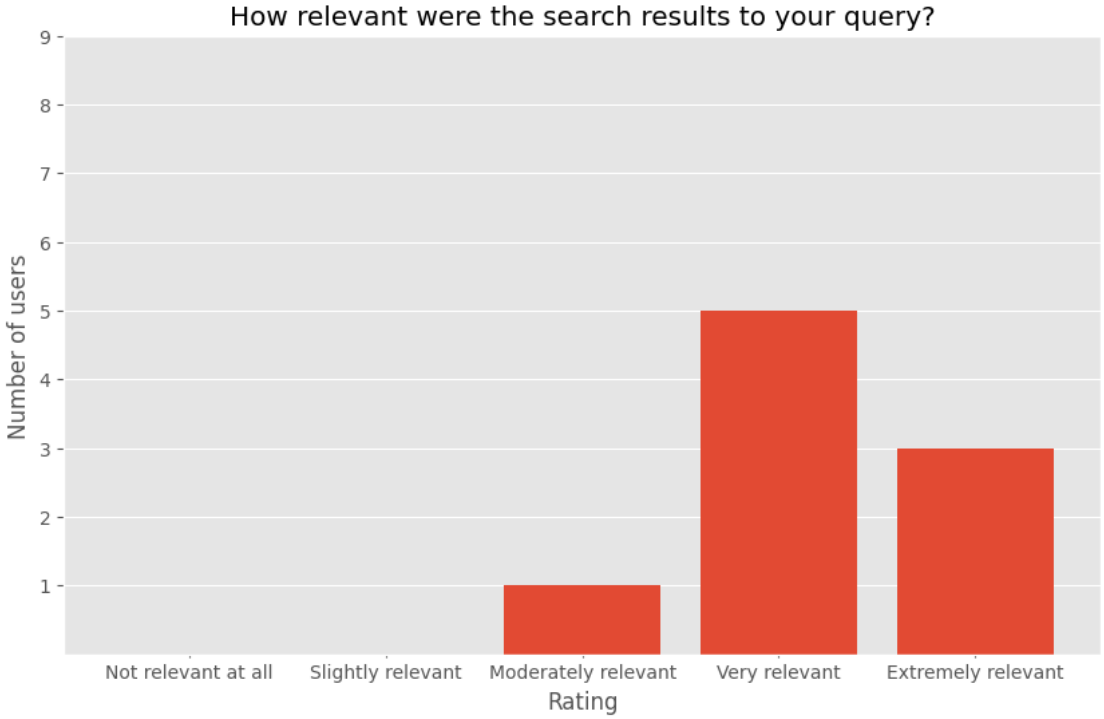
Questionnaire:

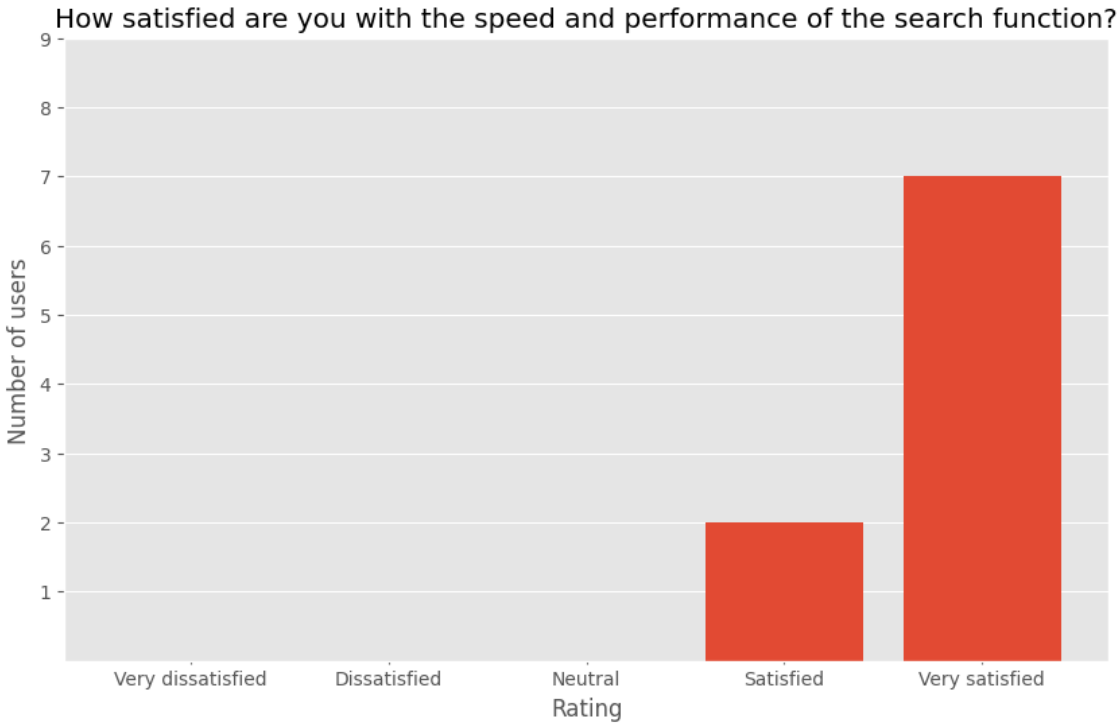
- How easy was it to find and use the search function on the website?
    - 4 Easy
- How relevant were the search results to your query?
    - 5 Extremely relevant
- How satisfied are you with the speed and performance of the search function?
    - 4 Satisfied
- Additional Comments:

- Liked the relevance of search results and the instant filtering of results.

Results Overview







QA Test Plan

1.Test Objectives:

The objective of this QA test plan is to verify the functionality and user experience of the "Search Tutors" feature in the Eduly app, ensuring that it meets the following requirements:

- The search interface is displayed correctly with all necessary fields.
- Users can filter tutors based on ratings, price, availability, subject, etc.
- Users can see a list of tutors matching their search criteria.

Additional tests: Reviews and Admin features.

2. **Test Objectives:**

The objective of this QA test plan is to verify the functionality and user experience of the admin features in the application, ensuring that it meets the following requirements:

- Authorization is correctly handled, and only users with the "ADMIN" role can access admin endpoints.
- Admins can view, approve tutor and student content.

- Admins can ban and unban users (tutors or students).

HW and SW Setup:

URL: http://20.56.148.2/

Browsers: Google Chrome and Firefox

Hardware: Any Desktop or PC running Windows/Linux/MacOS

Features to be Tested:

- Search and interact with tutors using the "Search Tutors" feature in the Eduly app.
- Additional tests:
    - Tutor reviews
    - Admin functionalities including content management (approval), user banning, and user role management.

QA Test Plan Table:

Test #	Test Title	Test Description	Test Input	Expected Correct Output	Test Results (Chrome)	Test Results (Firefox)
1	Search Interface Display	Verify that the search interface is displayed correctly.	Open the application.	App header should be visible with the search field.	PASS	PASS
2	Search Tutor with rating 1	Verify that the user can search tutors with rating filter set to 1.	Set the rating filter to 1 using the rating slider.	List of tutors with a minimum rating of 1 is displayed correctly.	PASS	PASS
3	Search Tutor with rating 5	Verify that the user can search tutors with rating filter set to 5.	Set the rating filter to 1 using the rating slider.	List of tutors with a minimum rating of 5 is displayed correctly.	PASS	PASS

4a	Search Tutor with topic	Search with specific term	Enter “phy” and click search.	List of physics tutors displayed	PASS	PASS
4b		Search with invalid term	Enter “???” in the search bar and click search	“No tutors found for search criteria” displayed	PASS	PASS
5	Sort tutors	Sort by price	Select “Lowest Price” under the sort filter	List of tutors with lowest price on top displayed	PASS	PASS
6	Submit review for student	Submit a review by a student on a given tutor profile	Entering 5-star review on the input popup	The review should be published in the tutor profile	PASS	PASS
7	Deploy the latest changes into the prod env	Once code is merged the new code should be build and pushed into prod server	New code push as well as blank code push	For new code new artifact should be pushed to prod	PASS	PASS
8	Display average review of a given teacher	Verify that the average rating is properly being displayed on tutor page	Entering reviews from different student profile in same tutor profile	The rating should be average of the total number of reviews	PASS	PASS
9	Unauthorized Access	Verify that unauthorized users cannot access admin	API call with non-admin token	ERROR: admin not found / unauthorized	PASS	PASS
10	View Tutor/student Content	Verify that admins can view tutor/student content pending approval	Get all tutor/student content list with PENDING_APPROVAL	List of tutor/student content	PASS	PASS

11	Approve Student/tutor Content	Verify that admin can approve student/tutor content by ID.	Click on approve button on admin dashboard	HTTP 200 /Success content approved	PASS	PASS
12	Ban Tutor/student	Verify that admin can ban a tutor/student by ID.	Click on ban button on admin dashboard	HTTP 200 /Success content Banned	PASS	PASS
13	View Banned Users	Verify that admin can view all banned users.	Get banned list by clicking on banned users	List of student and tutors who are banned	PASS	PASS

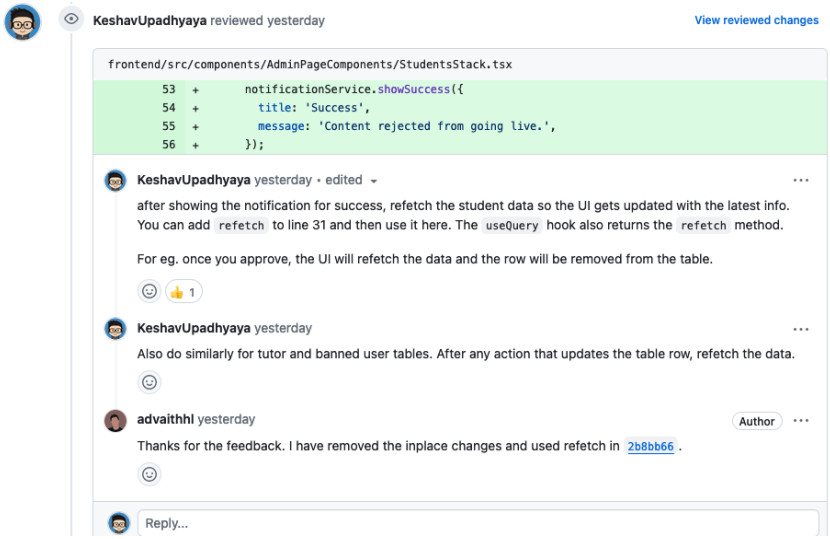
Test Results:

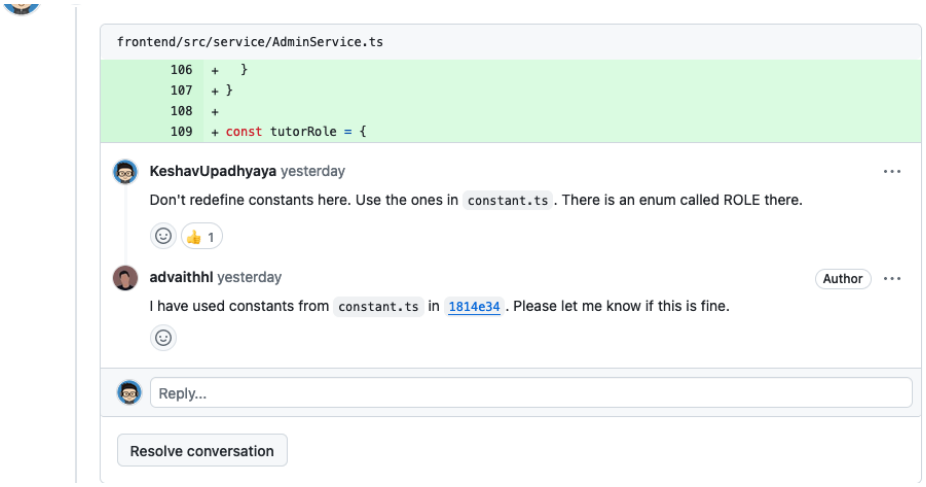
All test cases passed in both Google Chrome and Mozilla Firefox. No defects or issues were found during testing.

Code Reviews

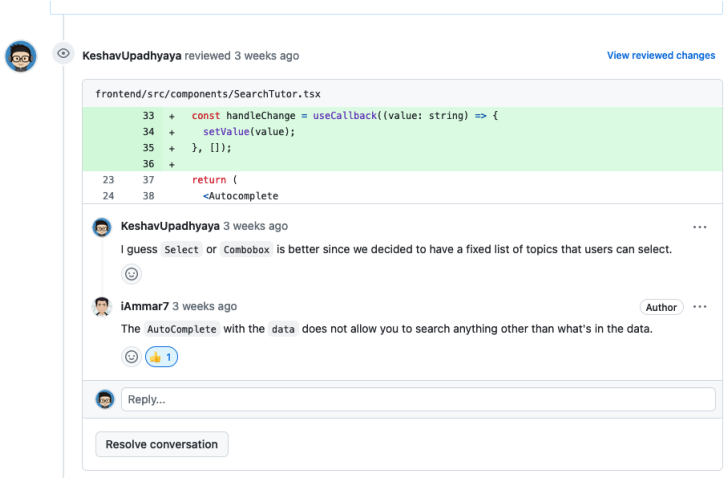
Keshav's reviews:

Reviews on Advaith's code:

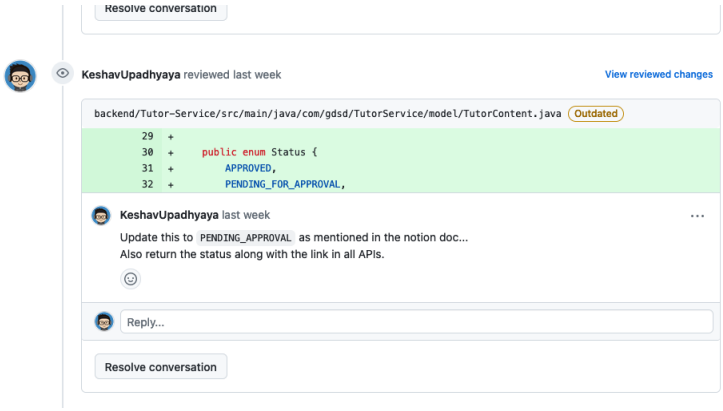




Reviews on Ammar’s code:

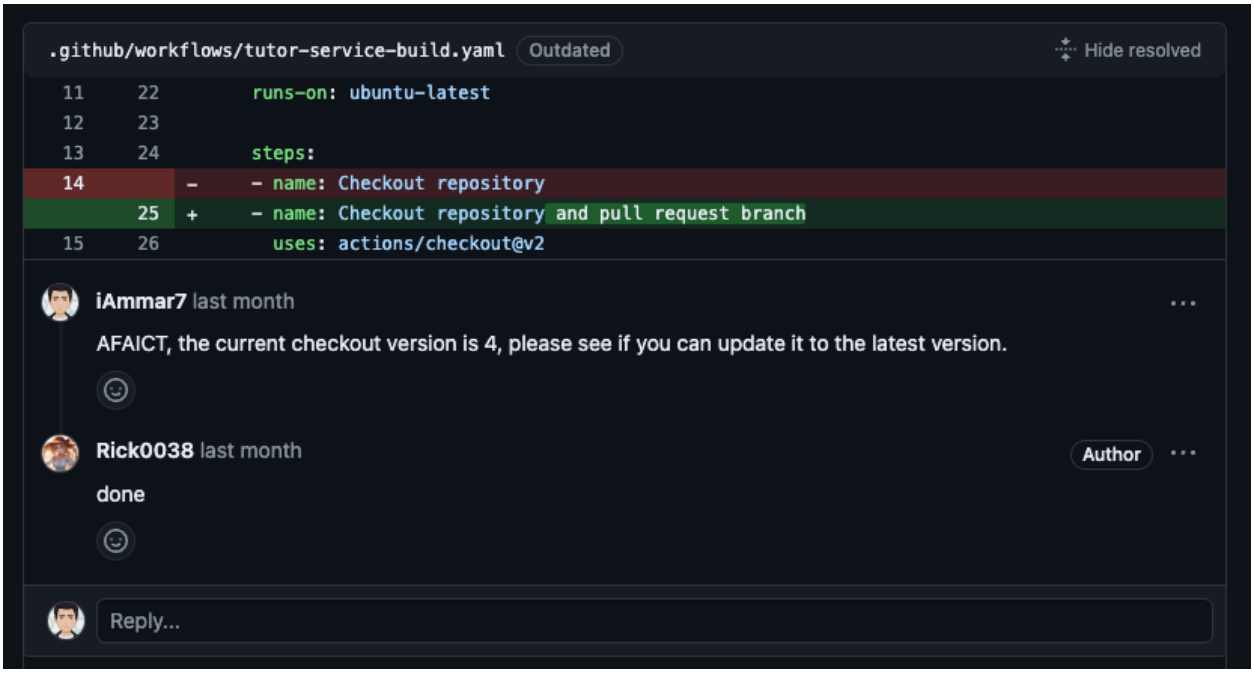


Review’s on Ayush’s code:

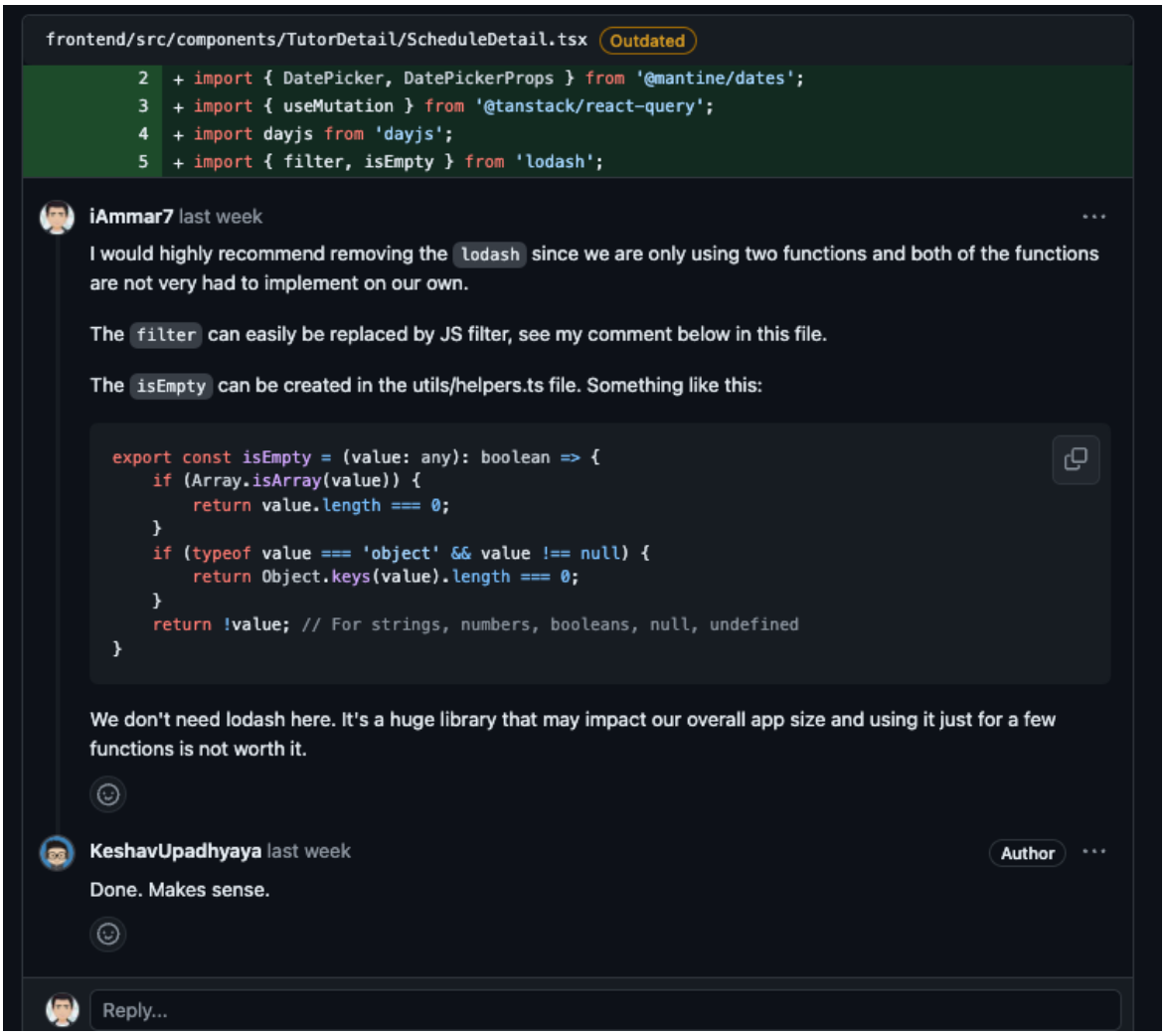


Ammar's reviews

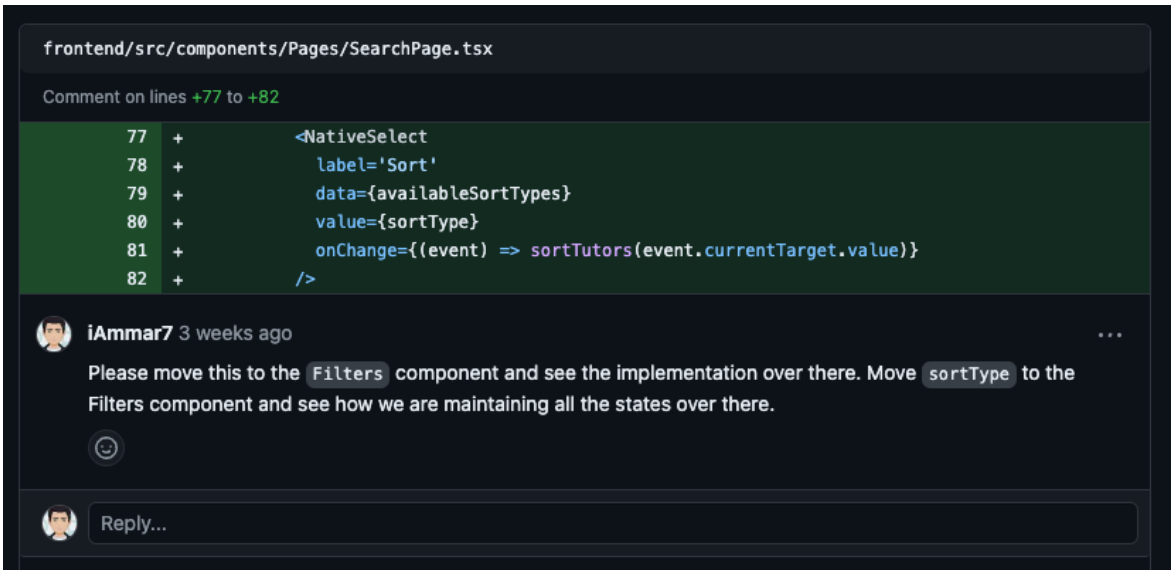
Reviews on Sagnik's code:



Reviews on Keshav's code:

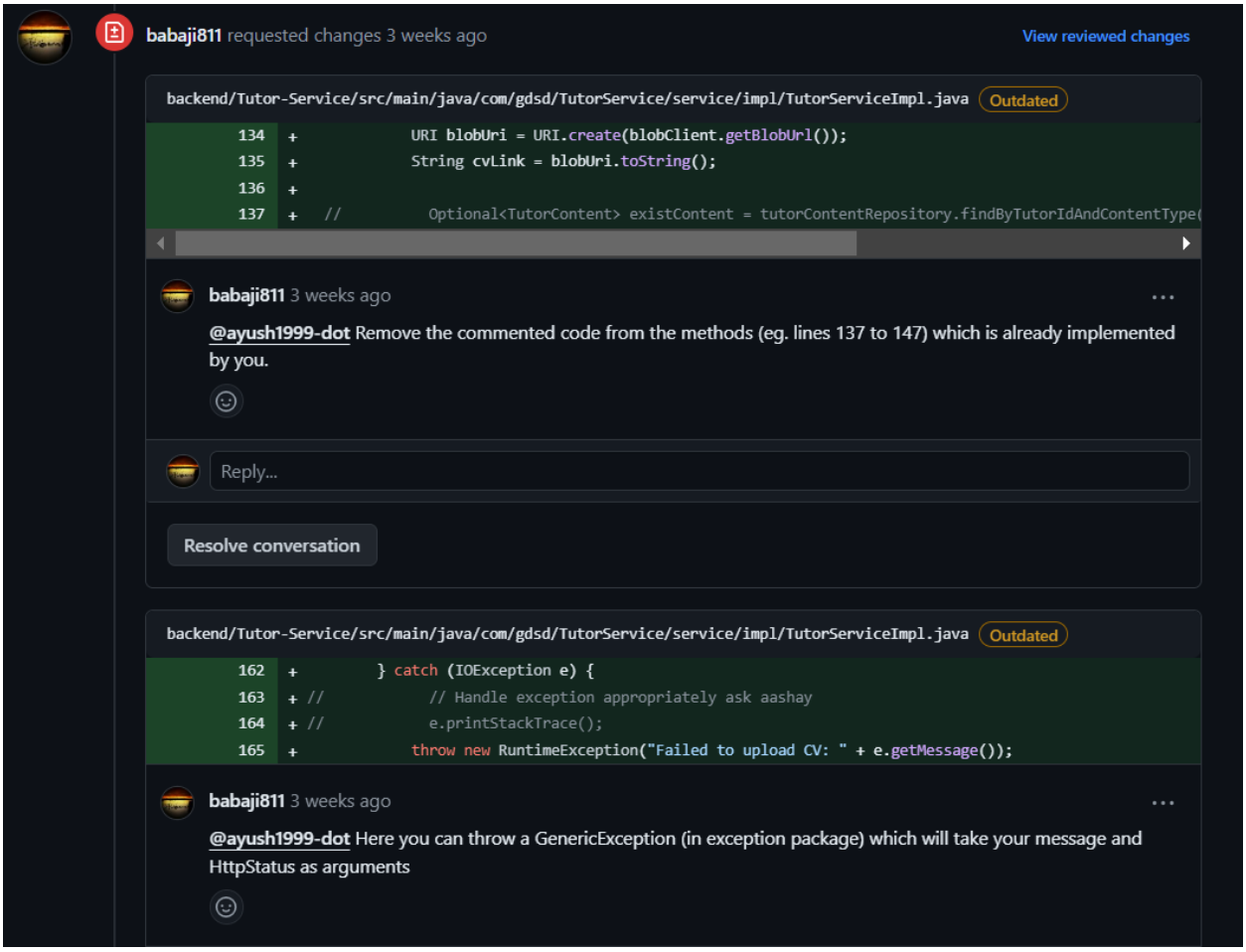


Reviews on Advaith's code:

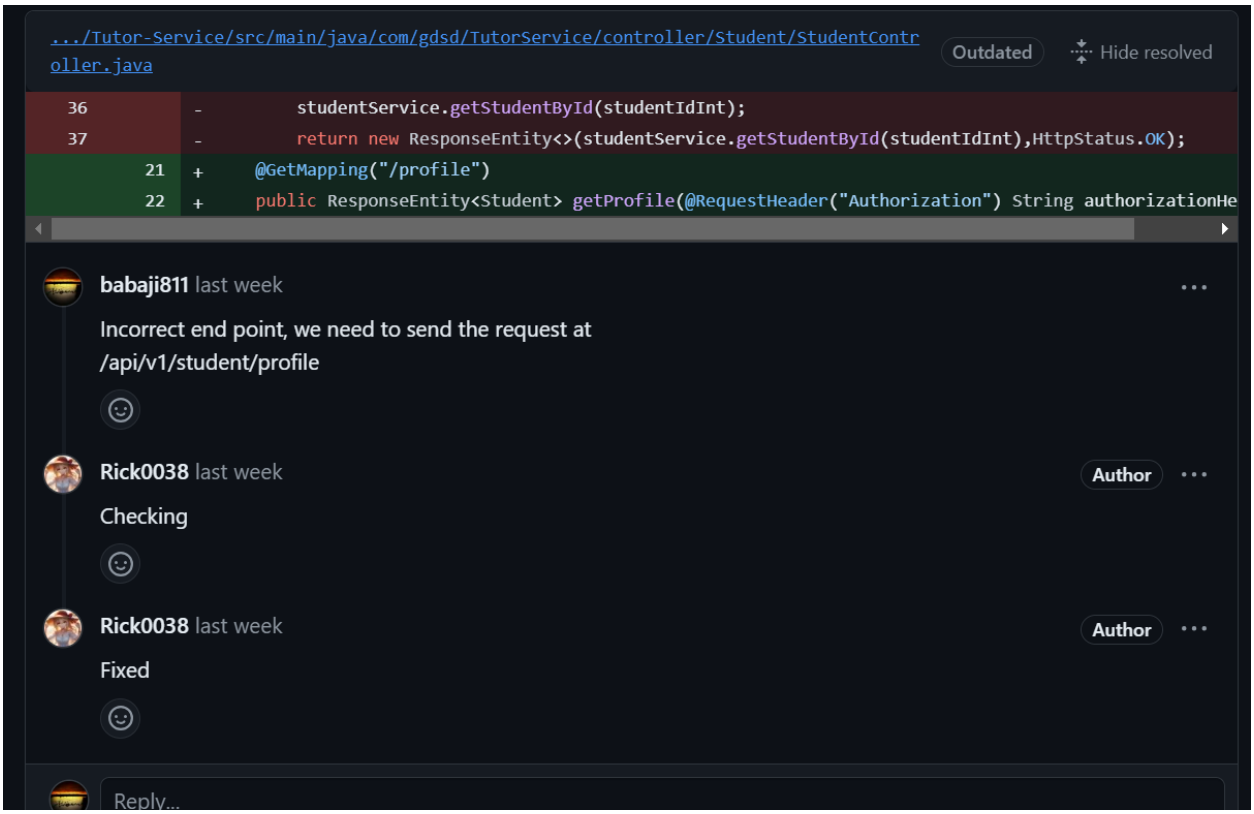


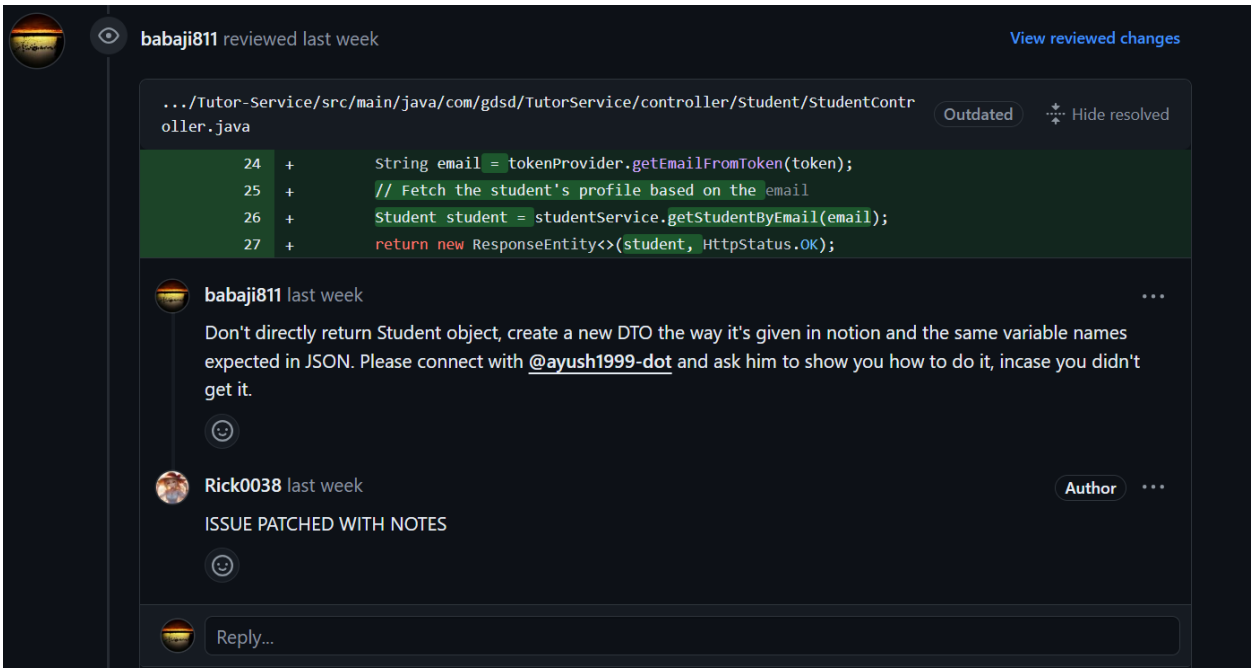
Aashay's reviews

Reviews on Ayush's code:



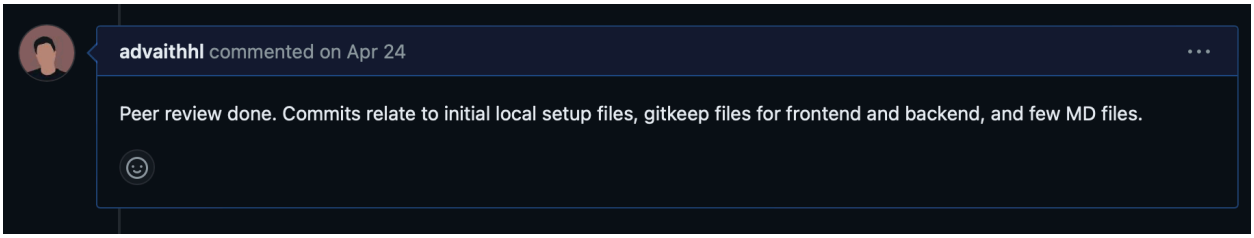
Reviews on Sagnik's code:



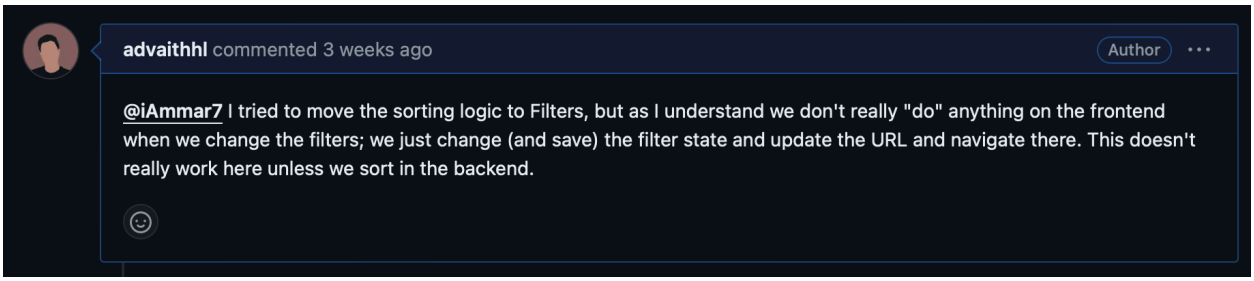


Advaith’s reviews

Review on Sagnik’s code:

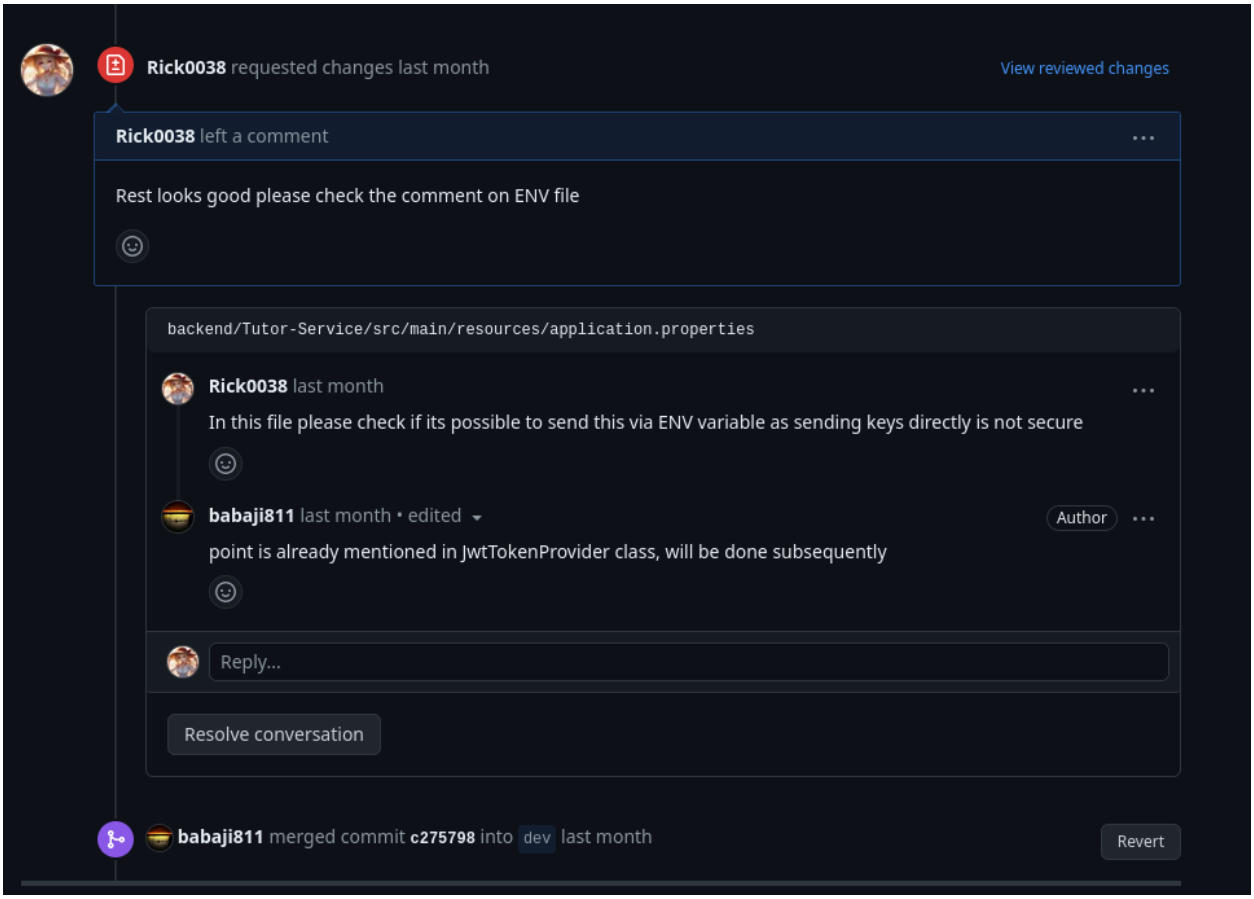


Discussion on suggestions on my code:

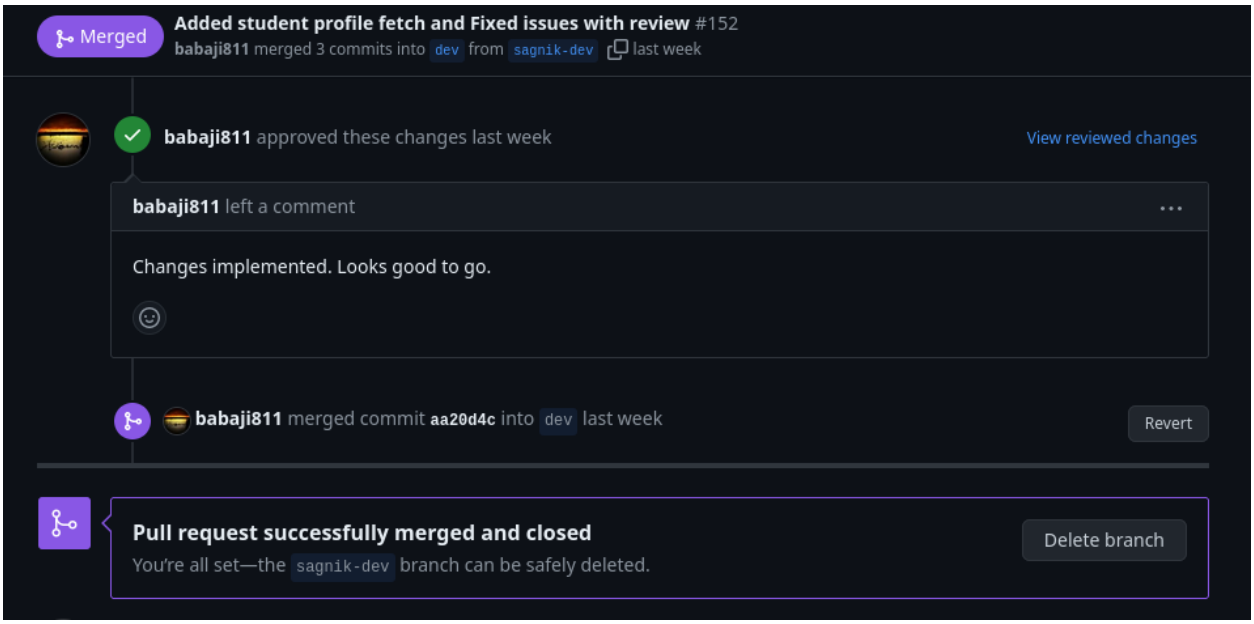


Sagnik’s reviews

Review on backend code

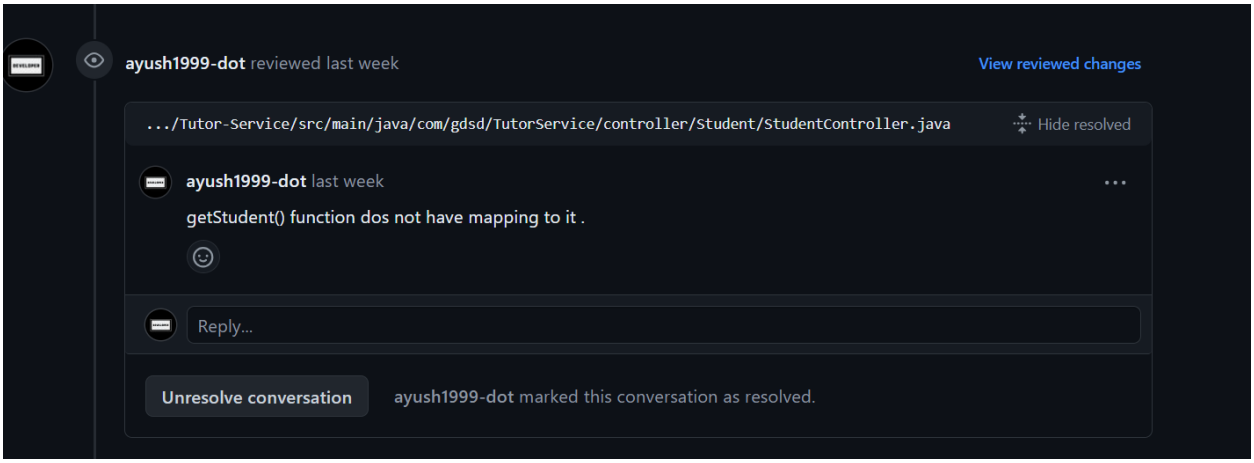


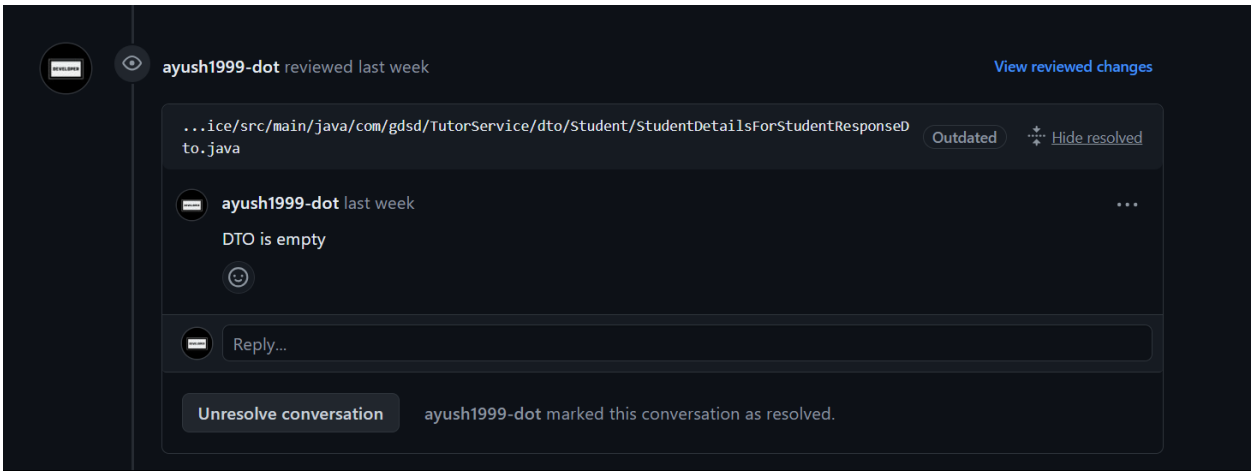
Review on my code



Ayush's reviews

Review on Backend Code





Self-check on best practices for security

Major assets to protect

- Tutor personal data and credentials
- Student personal data and credentials

Major threats

- Unauthorised access or theft of user data
- Unauthorised modification of user data

Protection measures

- We use environment variables to store all our secrets like API keys and credentials of third-party services like Azure Blob storage.
- We use JWT-based authentication tokens for login so that only authorized users are allowed to access protected APIs.
- Input validation and parameterized queries are used to prevent attacks like SQL injection.
- Routes in the UI are protected as well based on roles. E.g. a student or tutor cannot access the admin page.
- Display password “strength” meter on the signup page to encourage users to use strong passwords.

Confirmations

- The passwords are stored securely using the “bcrypt” password hashing algorithm.
- Input validation is performed wherever needed.

Self-check: Adherence to original Non-functional specs

1. Application shall be developed, tested, and deployed using tools and servers approved by Class CTO and as agreed in M0 (some may be provided in the class, some may be chosen by the student team, but all tools and servers have to be approved by Class CTO). **DONE**
2. Application shall be optimized for standard desktop/laptop browsers e.g., must render correctly on the two latest versions of two major browsers. **DONE**
3. All or selected application functions must render well on mobile devices. **DONE**
4. Data shall be stored in the database on the team's deployment server. **DONE**
5. No more than 50 concurrent users shall be accessing the application at any time. **DONE**
6. The privacy of users shall be protected, and all privacy policies will be appropriately communicated to the users. **DONE**
7. The language used shall be English (no localization needed). **DONE**
8. The application shall be very easy to use and intuitive. **DONE**
9. Application should follow established architecture patterns. **DONE**
10. Application code and its repository shall be easy to inspect and maintain. **DONE**
11. Google Analytics shall be used (optional). **DONE**
12. No e-mail clients shall be allowed. Interested users can only message to sellers via in-site messaging. **DONE**
13. Pay functionality, if any (e.g., paying for goods and services) shall not be implemented nor simulated in UI. **DONE**
14. Site security: basic best practices shall be applied (as covered in the class) for main data items. **DONE**
15. Media formats shall be standard as used in the market today. **DONE**
16. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development. **DONE**
17. The application UI (WWW and mobile) shall prominently display the following exact text on all pages "Fulda University Software Engineering Project Summer 2024. For Demonstration Only" at the bottom of the WWW page. (Important to not confuse this with a real application). **DONE**