

Luca Alvisini

Book for thought

Criterion A - Planning

Word count: 499

Criterion A

Scenario:

My client, **Maggie Nelson**, is the head of our school English department at the Global College and her job also includes many management responsibilities outside of just teaching. Maggie enjoys her role however she is attempting to achieve better work-life balance, something which she struggles with due to the demanding nature of her position. It is because of this that I approached Maggie in an attempt to help alleviate her workload.

It's in this first meeting [Appendix A] where I grasped the scope of her responsibilities. The most notable of these were managerial roles like ensuring student attendance, developing the English syllabus and being an English teacher. It's within this meeting that we discussed the roots of her heavy workload and managed to target some tedious tasks that could be aided by a program.

One such issue was handling submissions made by students for homework. These included exam-style papers which were marked simply using a rubric and therefore often led to similar feedback. Being able to fast-track this process would allow my client to focus on other aspects of her work which rely more heavily on her expertise.

While discussing potential solutions [Appendix B] she also presented me with her struggle to keep track of individual performance of students and assist them appropriately due to her already limited time and the scale of students she has to keep track of.

[230 words]

Proposed solution:

| |
|---|
| A centralised platform where teachers can manage and track student homework |
|---|

This involves a platform where she could create classes of students and assign tasks to each, the work would then be corrected through the incorporation of AI. By managing tasks through a centralised program, parallel issues like tracking student performance and assisting them can be handled. The program would be structurally similar to alternatives such as Microsoft Teams or Google Classroom but specialised to optimise student performance.

I decided to use the **Vue.js** framework due to its use of a virtual DOM and component based architecture increasing performance (important due to the large number of students on mobile devices). **Vue.js** is also compatible with the other infrastructure I am using (**Redis**, **MySQL**, **ExpressJS**). The dynamic infrastructure Vue employs is beneficial as it allows for seamless communication between users [Appendix D].

I chose to implement a cache for draft messages as students send detailed messages to teachers and wouldn't want to lose these by unexpected outages. I chose **Redis** due to its speed allowing for instant communication between parties and larger data structure support - unlike other infrastructures like **Memcached** - to send documents.

I made a relational database using **MySQL** because of its fast and efficient access to data through normalisation. Again this was done for mobile users whose experience would be hindered from slower infrastructure like **PostgreSQL**. Another reason for choosing **MySQL** was because of its popularity resulting in extensive documentation making development more efficient.

The backend was made in Express.js due to my prior experience and guidance given to me by my advisor [Appendix C].

[269 words]

Success Criteria - Approved by client [Appendix E]:

1. As a user, I want to be able to create an account and determine whether that account should be a student or a teacher account. I want to be able to set a username and password that will be used to identify me and access my account. Then when I finish creating the account I would like to send it to the main home page while logged into that account.
2. As a user, I want to be able to login to my account and depending on whether I am a teacher or a student I am sent to the appropriate homepage and given the appropriate privileges for my account type.
3. As a user, I want to be able to access a chat that allows me to send a message to any user. Past chats should be stored on the chat interface and files should be able to be sent across chats.
4. As a student, when I access the homepage I would like to be able to see all the classes I am assigned to
5. As a teacher, I want to be able to create new classes from the homepage and assign students to them. I should also be able to access my classes through the homepage and be able to enter a class through a GUI in order to set an assignment or upload resources. I should also be able to assign bodies of work that we will be studying throughout the year.
6. As a student, I want to be able to access the assignments set to me in each class and be able to upload my completed work
7. As a teacher, I want to be able to access the assignments I have set for my classes and open the work submitted by my students through a view that also shows me which students have not submitted anything.
8. As a teacher I want to be able to open each individual's assignment and score them accordingly. Based on my score I want feedback to be generated which I can edit and mark as complete which will then return the assignment to the student with the feedback in the form of cursive writing at the end of their document.
9. As a student, I want to be notified when one of my completed assignments has been marked and be able to access such assignments through my classes where I can view my feedback and the point score given.
10. As a teacher, I want to be able to access the student profiles which will provide me with valuable data regarding the student's performance and trajectory which would be displayed visually. I should be able to sort student profiles in various ways including alphabetically, by class, by grades or by priority.
11. As a teacher I want there to be an assignment profile section associated with each class in which I can view valuable statistics based on each assignment such as the grade boundaries, estimated difficulty, common struggles and outliers in performance