

Criterion A: Analysis

Description of Scenario





My client is **Mr John Mack** - Head of the Computer Science Department in school. All courses (IB SL, IB HL, and A level CS) offered by the department require some sort of internally-assessed work. To do this, students must come up with an interesting and also challenging idea to base their coursework on. From experience, Mr Mack has found that students find it extremely difficult to select an idea. **(lines 3 to 4)** Furthermore, the current system used by teachers to keep track of potential coursework ideas is Microsoft Word. The problems with this system are that the ideas are not secure and are not easily accessible by other teachers/students **(lines 4 to 7)**. The issue is only made more complicated by the fact that some projects are only suited for A level students, whilst others may be more appropriate for IB Standard-Level or Higher-Level students. Mr Mack explained this was because **“A level is slightly more in depth and longer because they have more hours. IB is shorter but they don’t have as long to do it.” (lines 8 to 9)** As an IB CS student myself, I understood the struggle of choosing a coursework idea that I genuinely liked and felt passionate about. I was presented a selection of prompts from Mr Mack’s word document, but none of them appealed to me very much. In fact, the one idea I did end up liking, he later realised, was already taken by another student. I then realised *this* was my problem – I, along with many other students, was struggling to choose a coursework idea, and so this would be the very problem that I try to solve and improve on for my IA.

All line numbers in Criterion A refer to appendix “IA-Criterion A (Appendix)”.

Rationale

To improve the organization of my school’s current CS coursework ‘system’, I have decided to create an online webpage-based system. It would have two separate login pages; one for teachers and one for students - as they will have different access rights. With this new system, teachers will be able to add new idea prompts to the system wherever and whenever they come across a new potential idea. The teacher entering the idea will also have to select whether the idea is best suited for A level, IB SL or IB HL students. Teachers should also be able to tag a topic to the idea (e.g. Sports, School, Music). These new ideas

will appear alongside the existing ones when a student logs in and chooses to view all the prompts. This system addresses the security and accessibility issues that are present in the current system, as it organises all the ideas in one location that is both secure and easily accessible by students and teachers alike. Furthermore, students will be able to sort the idea prompts by course, as well as by topic. This allows them to find the prompt best suited for them and their interests. A student will also be able to shortlist 3 idea prompts and, when the time comes, choose their final idea. Once a student finalises their coursework idea, it will be removed from the 'View All' page so other students will not be able to select the same one. The student's teacher will also be made aware of their final coursework idea.

What Software Will I Be Using?	Why Will I Be Using This Software?
MySQL 	Using it as a platform for my database and tables. It is appropriate for this project as it works best on small to medium webpages.
PHP 	PHP is a programming language that works very well in conjunction with MySQL. Firstly, PHP allows my system to run smoothly on multiple different platforms. PHP is also very quick in terms of loading webpages – hugely beneficial to clients. Lastly, PHP has been around for 23 years (with constant bug fixes and improvements); it is therefore a very stable and reliable programming language.
CSS 	With one CSS file, I can apply the same formatting over several pages without having to type my code out again. This allows my system to have a consistent aesthetic across all pages. It also saves time as I can make changes to all my webpages through a single file.
Bootstrap 	It is a system that is easy to use and extremely customizable. It is also supported by all browsers and allows my system to be mobile-responsive.

Success Criteria

1. Students and teachers have different access rights (*line 46: "they would need different rights", line 93: "there should be like a separate log in for a teacher"*)
2. System rejects any users with an invalid username/password
3. Passwords are stored as hashed passwords
4. Student's profile page displays student's details (e.g. course, teacher) as well as their shortlisted coursework ideas

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5. 'View All Coursework Ideas' page displays only approved coursework ideas that have not yet been taken (*lines 20-21: "it's really important that we don't have two students [...] doing the same idea"*)
6. Teachers can add coursework ideas directly into the system (*line 15: "I would like a teacher to write in an idea"*)
7. Students can suggest coursework ideas
8. Teachers can approve students' suggestions
9. Students and teachers can sort through coursework ideas by course/topic (*lines 18-20: "they should type in key words that they're interested in, and the system should suggest possible ones", lines 17-18: "a student should be able to say, 'I'm doing A level', 'I'm doing IB'"*)
10. Students can shortlist 3 coursework ideas
11. System continues to function on mobile devices as well as laptops/desktops – phones, tablets, etc. (*lines 102-103: "it should be useable on mobile devices because all of our students have devices", lines 107-108: "it should look and work in similar ways, whether it be on a mobile device [...], tablet, surface, or mac, or windows"*)

Criterion A Word Count: **543**