A-level
COMPUTER SCIENCE

Feedback on the 2019 NEA

Commentaries booklet

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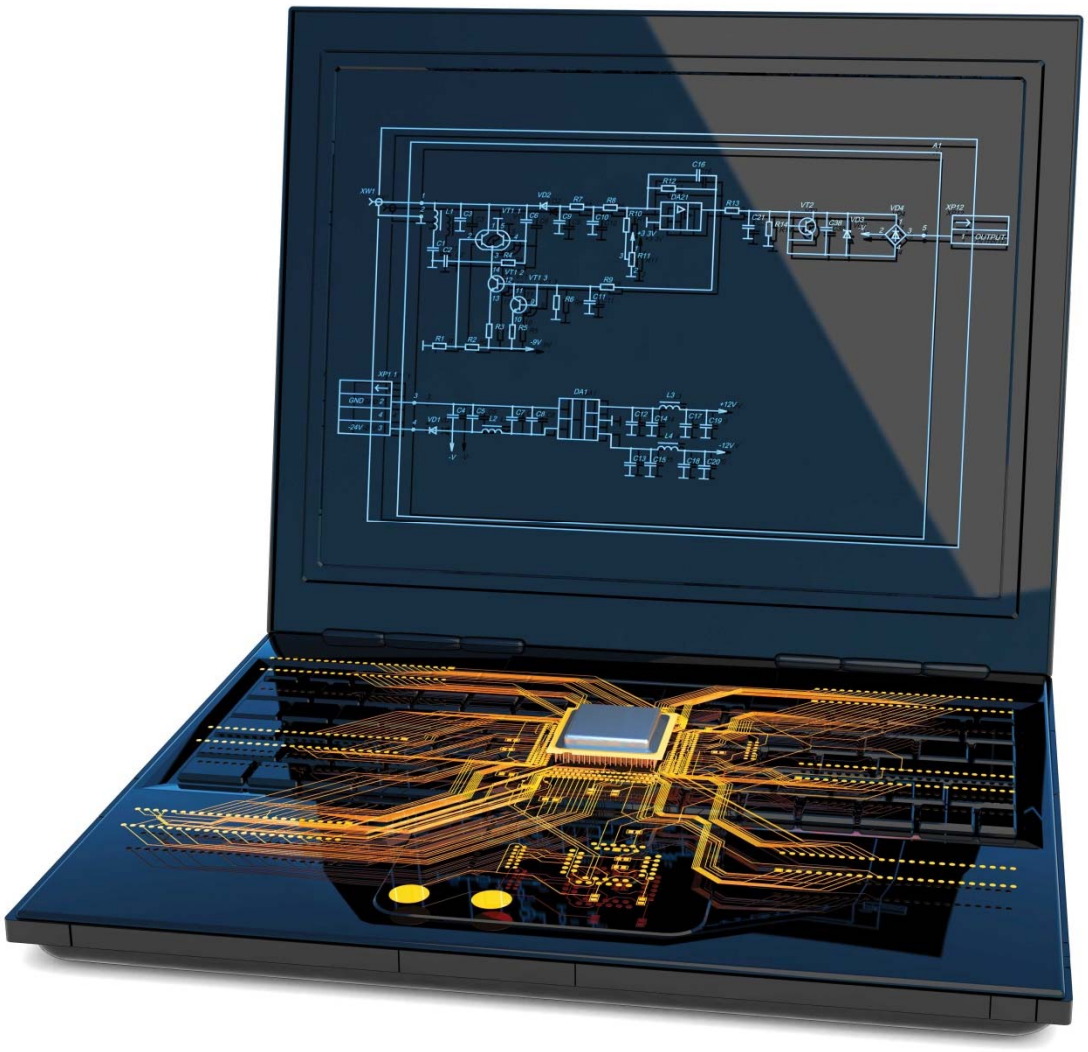


Contents

Analysis

Student A

This analysis was originally assessed at 4 marks by the school/college.

Upon moderation it was decided that the project was not of A-level standard and therefore reduced to 1 mark. From looking at the background to the project idea, the limited research and the limited objectives the moderator made this decision and it would have been checked with a senior moderator.

The research into the Frogger game is good but there is limited detail about the maths side of this project.

The objectives point out some ideas but also highlight the lack of complexity of this project.

Student B

The analysis was originally assessed at 7 marks by the school/college.

Upon moderation it was decided that the analysis was worth 6 marks; it should be assessed in L2 rather than L3.

There is a nice amount of research in this project but it is not fully scoped.

The modelling flow chart is useful but there could also have been consideration of some sample data.

Student C

The analysis was originally assessed at 9 marks by the school/college.

Upon moderation it was decided that the analysis was worth 9 marks.

Whilst this has more than necessary for 9 marks, it demonstrates well some of the detail that can be brought into an analysis section to set the scene and point towards a very good A-level project (the final project scored 75 marks).

Documented design

Student A

The documented design was originally assessed at 3 marks by the school/college.

Whilst this is in the correct marking level due to the project being not A-level standard, it was reduced to 1 mark in moderation.

The design starts with a variety of tables and diagrams but really needed a bit more detail in the overview at the start.

There is an attempt at the user interface but, in reality, it doesn't cover how the game is really designed or how the maths element might be linked into the game.

This is an inadequate articulation of the design and fits into L1.

Student B

The documented design was originally assessed at 9 marks by the school/college.

Upon moderation it was decided to keep this section at 9 marks.

There is a lot of good research that is linked into how it will be used for their solution – this linking into the proposed solution is sometimes missed by students (so you will see evidence of a merge sort algorithm but then no detail as to why and how it will be used by the proposed solution).

The solution is broken down into 'main functions' providing a clear overview.

The diagrams have text underneath them helping to explain.

There is evidence of pseudocode (and code from the solution) but also a good amount of breaking down ideas into bullet points to explain how sections work.

It's nice to see some example scenarios discussed and sketch design work included.

Student C

The documented design was originally assessed at 3 marks by the school/college.

Upon moderation it was decided to move it into L2 and it was awarded 4 marks.

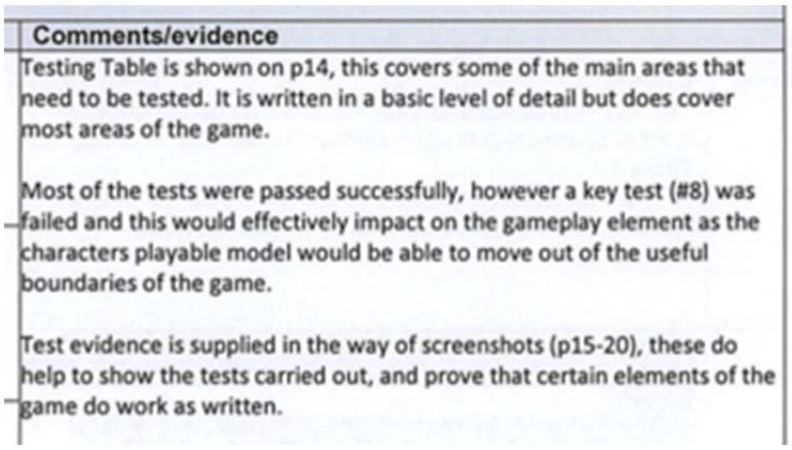
The section starts with a nice overview and moves onto diagrams – common to many design sections these diagrams do not have any text to help explain (unlike student B).

There is evidence of discussion concerning the data structures required with some example data provided.

However, it then moves into quite complex pseudocode without really breaking down a section into simpler ideas first. Some example data to help demonstrate this code would have helped.
It was felt that there was more here than L1, which is way moderation moved it to L2.

Testing

Student A

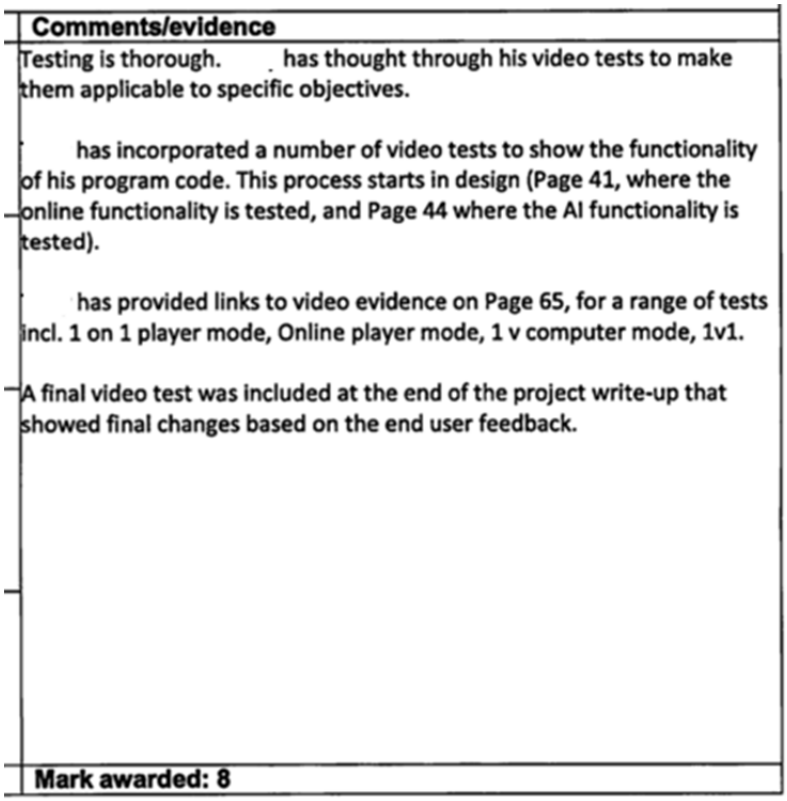


Comments/evidence
Testing Table is shown on p14, this covers some of the main areas that need to be tested. It is written in a basic level of detail but does cover most areas of the game. Most of the tests were passed successfully, however a key test (#8) was failed and this would effectively impact on the gameplay element as the characters playable model would be able to move out of the useful boundaries of the game. Test evidence is supplied in the way of screenshots (p15-20), these do help to show the tests carried out, and prove that certain elements of the game do work as written.

The testing was originally assessed at 3 marks by the school/college.

There was no real reason to disagree with this mark but as the project was assessed as not being A-level standard the mark was reduced to 1.

Student B



Comments/evidence
Testing is thorough. has thought through his video tests to make them applicable to specific objectives. has incorporated a number of video tests to show the functionality of his program code. This process starts in design (Page 41, where the online functionality is tested, and Page 44 where the AI functionality is tested). has provided links to video evidence on Page 65, for a range of tests incl. 1 on 1 player mode, Online player mode, 1 v computer mode, 1v1. A final video test was included at the end of the project write-up that showed final changes based on the end user feedback.
Mark awarded: 8

The testing was originally assessed at 8 marks by the school/college.

The school/college marking clearly indicated that testing was present in both the design section (unit/modular) and also in the testing section.

The student had provided a good series of videos to provide evidence, clearly testing the system as a whole and also looking at objectives.

There was no reason during moderation to change the school/college mark.

Student C

https://www.youtube.com/watch?v=elb6yK5bVZs Note the letter after 'v=e' is a capital i not the letter after k in the alphabet.

The test video is comprehensive, showing a range of correct and erroneous piece moves for various game plays. For test 13, it would have been ideal if the data for the heuristic function was explained in more detail, yet this does not detract from the clear evidence it is working.

The video fully confirms the completeness and robustness of the solution and in this section confirms the success of the objectives and the system overall. Additional screenshot evidence is presented and discussed.

The only appropriate mark for this section is top of level 4.

Mark awarded: 8

The testing was originally assessed as 8 marks by the school/college.

The comments provided in the project log were useful (especially pointing out the URL carefully).

It is clear that the school/college marker has watched the video, with comments on certain elements that might have been improved.

It is also clear that the student has thought carefully about the range of tests that should be performed on this chess system.

There was no reason during moderation to change the school/college mark.

Evaluation

Student A

The school/college awarded 3 marks; this was changed to 1 mark by the moderator as the project is not A-level standard.

The user feedback provided is very positive considering how the final solution actually turned out – this is common in projects and students should be encouraged to gain honest user feedback.

The student has not really reflected upon each objective.

This evaluation, if the project was A-level standard, would be assessed in L2.

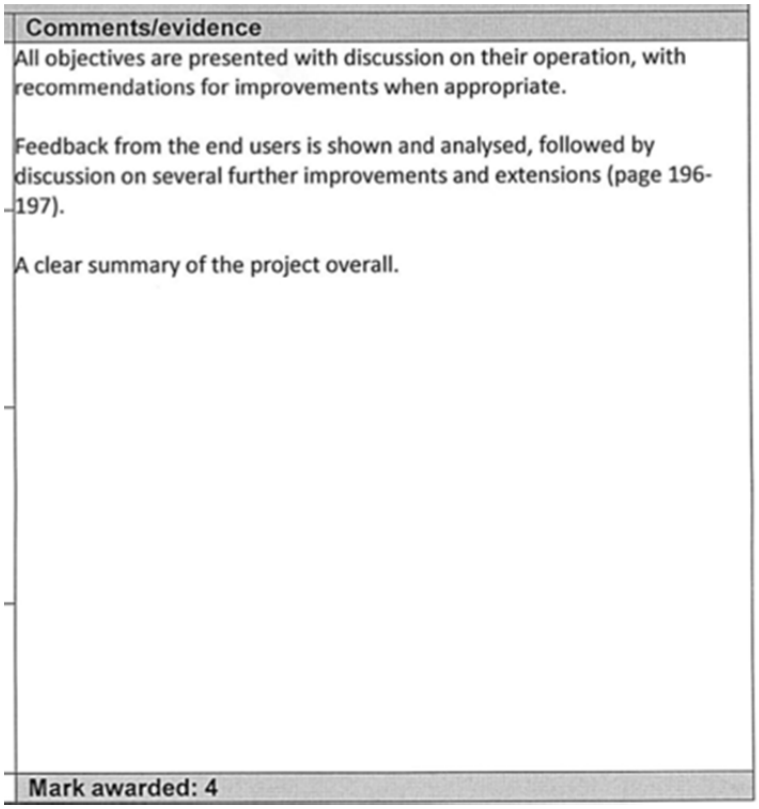
Student B

The school/college awarded 3 marks; this was changed to 1 mark by the moderator as this project was also assessed as not being A-level standard.

Considering the evlauation separately – there is evidence that the student has reflected on their objectives (but it can be seen that these objectives were limited).

The evalaution would be assessed at L2 but the lack of user feedback is concerning.

Student C



Comments/evidence
All objectives are presented with discussion on their operation, with recommendations for improvements when appropriate. Feedback from the end users is shown and analysed, followed by discussion on several further improvements and extensions (page 196-197). A clear summary of the project overall.
Mark awarded: 4

The school/college awarded 4 marks for this evaluation and the moderator agreed.

There is clear reflection on the objectives, detailed user feedback which is reflected upon and consideration of improvements and extensions.

This is a comprehensive and well documented evaluation section.

Examples of log completion

A good example of completing the project log for techniques

Comments/evidence
Each of the A band techniques implemented are listed (page 80-83), with usage page references to pinpoint the location. • Complex OOP is utilised throughout the project (page 80-81) with a list of page numbers for object features used. The class designs are explained in the design section (page 30-31) • Stack operations with validation (page 88-89) are implemented. • Tree traversal (explained with link page at page 81) in the minimax algorithm. Recursion, within the minimax function (example page 144-147) • Complex user-defined heuristic algorithm evaluates the board state using weights and mobilities to ascertain which side has the advantage (page 82, 128+). • Complex mathematical model using the minimax/alpha-beta pruning algorithms provides the backbone of the system internal operation (page 141+) The objectives are referred to throughout the in-depth and detailed implementation section. P.151 should say Objective 6 not 5. A comprehensive defensively coded full commented (within the code and externally in the text) project that is securely at the top of level 3 band. Inefficient code lead to 1 marks being deducted (page 122-124)
Mark awarded: 26

A good example of completing the project log for completeness

Comments/evidence
The objectives have been implemented as stated, with clear indications that the system operates correctly, based on the testing evidence, which clearly references the objectives. It would have been preferable to have seen further discussion in the technical solution, explaining the implemented algorithms and methods, yet this is generally covered in the design. The project demonstrates a working, learning system and hence it can be graded strongly. All specific and measurable objectives have been implemented, therefore a high mark is considered. 1 mark was deducted due the lack of a destination, which would seem more appropriate.
Mark awarded: 14

Contact us

T: 0161 957 3980
E: computerscience@aqa.org.uk
8am–5pm Monday to Friday

aqa.org.uk