**Practical Project Log**

**Candidate Number:** 7201

**Candidate Full Name:** Kieran Crossley

**Section 1: The Project**

**Project Title**: 4 Colours

Outline description: 4 Colours is a card game like UNO. The objective is to be the first player to get rid of all their cards. Players could be required to make an account to play online with 3 other players, or they could have the option to play with up to 3 other bots offline. For the online mode, player stats may be available. There are a multitude of different types of cards than can be played, all in 4 different colours: red, blue, yellow and green.

**Total Marks: 70**

**Section 1: Project Development**

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| **Analysis** | | | Page |
| Described and justified the features that make the problem solvable by computational methods, explaining why it is amenable to a computational approach. | | | 14 |
| Identified suitable stakeholders for the project and described them explaining how they will make use of the proposed solution and why it is appropriate to their needs. | | | 2-7 |
| Researched the problem in depth looking at existing solutions to similar problems, identifying and justifying suitable approaches based on this research. | | | 7-12 |
| Identified the essential features of the proposed computational solution explaining these choices. | | | 13 |
| Identified and explained with justification any limitations of the proposed solution. | | | 14 |
| Specified and justified the requirements for the solution including (as appropriate) any hardware and software requirements. | | | 15 |
| Identified and justified measurable success criteria for the proposed solution. | | | 12-13 |
| **Comment** | **Max Mark** | **Mark Awarded** | |
| Kieran is planning to build a game for his stakeholder Mr Dorrell (page 2). He has made use of excellent analysis technique such as emails and questionnaire (page 3 – 7). His objectives are SMART. All key points are justified.  **Suggested Improvements:** | **10** | 10 | |
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| **Design** | | | Page |
| Used a suitable design methodology for your chosen project + language. For instance, use of class diagrams for OOP, or Top Down Design for Procedural. | | | 16-28 |
| Each smaller problem should be justified as to why this is a suitable “chunk” and how it fits in to the grand scheme | | | 20, 22, 23, 24, 26, 28 |
| Described the solution fully using appropriate and accurate algorithms justifying how these algorithms form a complete solution to the problem. Flow Charts, Data Flow, Pseudocode etc should be used appropriately to the design the program | | | 20-33, 35 |
| The emphasis is that a 3rd party should be able to implement the solution directly from the designs | | | entire design section 16-37 |
| Identified and justified the key variables / data structures / classes (as appropriate to the proposed solution) justifying and explaining any necessary validation. | | | 21-28, 33-35 |
| Identified and justified the test data to be used during the iterative development of the solution. | | | 35-37 |
| Identified and justified any further data to be used in the post development phase. | | | 35-37 |
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| **Comment** | **Max Mark** | **Mark Awarded** | |
| Excellent review of C# and SQL programming languages.  Improvements:   * Sections of your work need further justification – pseudocode (pages 21 – 28), program flow diagram (Abstracted solution, page 20). I have now added justification to these * #see me – can you confirm that your GUIs hasn’t been designed using the development tool. Seen – confirmed that they were made with PowerPoint | **15** | ~~13/ 15~~  15 | |

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| **Development** | | | Page |
| **Iterative development of a coded solution (maximum 15 marks)** | | |  |
| Provided evidence of each stage of the iterative development process for a coded solution relating this to the breakdown of the problem from the analysis stage and explaining what they did and justifying why. | | | 38-101 |
| Provided evidence of prototype versions of their solution for each stage of the process. | | | 38-131 – eg, 60 |
| The solution will be well structured and modular in nature. | | | 38-101 |
| Code will be annotated to aid future maintenance of the system. | | | 38-101 or see appendix 134-167 |
| All variables and structures will be appropriately named. | | | 38-101 or see appendix 134-167 |
| Identified and justified any further data to be used in the post development phase. | | | 102 |
| There will be evidence of validation for all key elements of the solution. | | | 41,58,76,84,92 |
| The development will show review at all key stages in the process. | | | 38-101 but 43, 70, 100, 101 |
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| **Testing to inform development (maximum 10 marks)** | | |  |
| Provided evidence of testing at each stage of the iterative development process. | | | 38-131 |
| Provided evidence of any failed tests and the remedial actions taken with full justification for any actions taken. | | | 60, 114-115, 121-122, 123, 126-130 |
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| **Comment** | **Max Mark** | **Mark Awarded** | |
| Difficulties highlighted due to time constraint highlighted.  Use of external libraries “Riptide” used for developing both client and server side code. OOP paradigm used.  Note: I checked the use of Unity with OCR and they confirmed that it was okay to use as long as the core element of the code is written by them.  Improvement:   * Go to page 76. What do you mean by SV SIDE CODE HERE? Is that the same code on page 77? Yes, this is the same code, I forgot to remove the comment to myself | **25** | 15  10 | |

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| **Evaluation (maximum 20 marks)** | | | Page |
| **Testing to inform evaluation (maximum 5 marks)** | | |  |
| Provided annotated evidence of post development testing for function and robustness. | | | **function**  114-119, 121-125, 130  **Robustness**  105, 106, 108-113, 120, 122 |
| Provided annotated evidence for usability testing. | | | 105-108, 114-117, 120, 122, 126, 130 |
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| **Evaluation of solution (maximum 15 marks)** | | |  |
| Used the test evidence to cross reference with the success criteria to evaluate the solution explain how the evidence shows that the criteria has been fully, partially or not met in each case. | | | 103, 104 |
| Provided comments on how any partially or unmet criteria could be addressed in further development. | | | 131 |
| Provided evidence of the usability features justifying their success, partial success or failure as effective usability features. | | | 105-108, 114-117, 120, 122, 126, 130 |
| Provided comments on how any issues with partially or unmet usability features could be addressed in further development. | | | 131 |
| Considered maintenance issues and limitations of the solution. | | | 131-133 |
| Described how the program could be developed to deal with limitations of potential improvements / changes. | | | 131-133 |
| There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated. | | | whole project |
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| **Comment** | **Max Mark** | **Mark Awarded** | |
| Criteria column now added into table on page 103/104 to cross-link success criteria to tests | **20** | 5  15 | |