

2017 Project log

A-level Computer Science (7517)

Computing Practical Project (7517/C)

Please attach a copy of this form securely to the front your candidate's work.

Centre number

Centre name
AQA

Candidate number

Candidate's full name
PROJECT C

Section one - the project

To be completed by the candidate and returned to the teacher for approval before the project is started

Project title A 2d sandbox

Project type problem

Outline description

To create a 2d sandbox system with a variety of blocks and interactions.

To be completed by the teacher:

From the given description the project is at a standard required for A-level

Yes

Section two – project assessment

To be completed by the teacher

Analysis		Mark	Comments/evidence
Level	Criteria		
3	<p>Fully or nearly fully scoped analysis of a real problem, presented in a way that a third party can understand. Requirements fully documented in a set of measurable and appropriate specific objectives, covering all required functionality of the solution or areas of investigation. Requirements arrived at by considering, through dialogue, the needs of the intended users of the system, or recipients of the outcomes for investigative projects. Problem sufficiently well modelled to be of use in subsequent stages.</p>	7-9	<p>The analysis could have more detail about what is meant by a 'sandbox game' and this could lead into more depth as to what this particular one will contain (and justification). Perhaps leading to some ideas as to things that can be created / done in this sandbox. Leaves you wondering slightly what this sandbox game will actually allow you to do – so not enough detail for a 3rd party to understand.</p> <p>The analysis could do with a table of the blocks to be used, properties and interactions described in a bit more detail (currently this is only found out via the objectives). Could also justify why these blocks have been picked – what will this allow you to create / make in the sandbox.</p>
2	<p>Well scoped analysis (but with some omissions that are not serious enough to undermine later design) of a real problem. Most, but not all, requirements documented in a set of, in the main, measurable and appropriate specific objectives that cover most of the required functionality of a solution or areas of investigation.</p> <p>Requirements arrived at, in the main, by considering, through dialogue, the needs of the intended users of the system, or recipients of the outcomes for investigative projects.</p> <p>Problem sufficiently well modelled to be of use in subsequent stages.</p>	4-6	<p>Could do with more detail about the decisions made as to how the sandbox / game will flow.</p> <p>The code / prototyping does not need to be in the analysis section (especially as reads 'implementing gravity...') this would be more appropriate in the documented design – so ignored in reflection of the analysis mark but can be considered in the documented design.</p>
1	<p>Partly scoped analysis of a problem. Requirements partly documented in a set of specific objectives, not all of which are measurable or appropriate for developing a solution. The required functionality or areas of investigation are only partly addressed.</p> <p>Some attempt to consider, through dialogue, the needs of the intended users of the system, or recipients of the outcomes for investigative projects.</p> <p>Problem partly modelled and of some use in subsequent stages.</p>	1-3	<p>Perhaps in the analysis stage consideration should be taken to explain what will be meant by gravity (just a drop rather than any acceleration) and spread (what do we mean by this?)</p> <p>The analysis does provide some scope for the project but not enough. There is limited dialogue with users (perhaps some 8-15 years olds could have been involved) – who is Robin? Whilst there is prototyping (ignored) there is no modelling of the proposed system. The objectives listed are good but perhaps limit the full complexity of the project.</p>
	No evidence presented	0	Mark awarded: 4

Documented design		
Level	Criteria	Mark
4	Fully or nearly fully articulated design for a real problem, that describes how all or almost all of the key aspects of the solution/investigation are to be structured/are structured.	10-12
3	Adequately articulated design for a real problem that describes how most of the key aspects of the solution/investigation are to be structured/are structured.	7-9
2	Partially articulated design for a real problem that describes how some aspects of the solution/investigation are to be structured/are structured.	4-6
1	Inadequate articulation of the design of the solution so that it is difficult to obtain a picture of how the solution/investigation is to be structured/is structured without resorting to looking directly at the programmed solution.	1-3
	No evidence presented	0
		Mark awarded: 5
<p>Page 10 – sketch of HCI but no real annotation as to what each element will do. Could there also be some details/definitions as to how this will be done in tkinter.</p> <p>Page 11-OOP used but could actually describe what each class will be used for (lacks details)</p> <p>Page 13 – a diagram to show the interactions but is hard to follow due to lack of arrow heads and some conflicting labels</p> <p>Page 13 – nice to see how the data structure will be used to allow an ‘undo’ ability</p> <p>Page 15 to 18 – key algorithms are presented as code with comments rather than full detail about how they work.</p> <p>No real design out / detail about how the gravity and spread interactions will work (in terms of positions on the grid and the calculations to be used – would be nice to have a sketch of before / after for a couple of small frames)</p> <p>Describes how some aspects are to be structured but lacking some key parts like analysing the interactions / spread / gravity</p>		

Technical solution – completeness			
Level	Criteria	Mark	Comments/evidence
3	A system that meets almost all of the requirements of a solution/an investigation (ignoring any requirements that go beyond the demands of A-level).	11-15	Project meets the requirements set out in the analysis stage and these are suitable for an A-level project.
2	A system that achieves many of the requirements but not all. The marks at the top end of the band are for systems that include some of the most important requirements.	6-10	
1	A system that tackles some aspects of the problem or investigation.	1-5	
	No evidence presented	0	Mark awarded: 15

NOTES:

Completeness is not only about how well a solution meets the objectives set by the student but also what an expected technical solution might perform for this particular project.

Technical solution – techniques used		
Level	Criteria	Mark
3	The techniques used are appropriate and demonstrate a level of technical skill equivalent to those listed in Group A in Table 1 . Program(s) demonstrate(s) that the skill required for this level has been applied sufficiently to demonstrate proficiency.	19-27
2	The techniques used are appropriate and demonstrate a level of technical skill equivalent to those listed in Group B in Table 1 . Program(s) demonstrate(s) that the skill required for this level has been applied sufficiently to demonstrate proficiency.	10-18
1	The techniques used demonstrate a level of technical skill equivalent to those listed in Group C in Table 1 . Program(s) demonstrate(s) that the skill required for this level has been applied sufficiently to demonstrate proficiency.	1-9
NOTES: The mark to be awarded, within the level, should be decided upon using these factors: (1) The extent to which the criteria for the level have been achieved (2) The quality of the coding style that the student has demonstrated (3) The effectiveness of the solution. It would be beneficial for these to also be referred to in the comments/evidence section. Table 1 referred to is on pages 95-96 of the specification (version 1.4 December 2016) Continue on a separate sheet if necessary		Mark awarded: 20

Comments/evidence

Technical Skills:
Solution makes good use of threading and some nice algorithms for block interactions. Use of a stack to hold 'list of blocks' which allows an undo functionality.
Makes use of an OOP model but the sub-classes add little to the parent class.

Group A – stack defined (trivial) but used appropriately in solution (p24)
Group A – dynamic generation of objects (but model not that complex) (p28)
Group B – use of files (reading/writing) (p29)
Group B – interactions of objects (p33 – explosion for example)

Coding Style:
Lacks commenting especially later on in the code where the interactions occur.

Use of defensive programming (p33)
All interactions seem to be not actually part of the classes – could this have been done better?

Testing Level		Criteria	Mark	Comments/evidence
4		Clear evidence, in the form of carefully selected representative samples, that thorough testing has been carried out. This demonstrates the robustness of the complete or nearly complete solution/thoroughness of investigation and that the requirements of the solution/investigation have been achieved.	7-8	Good use made of a video to test the solution with test plan clearly setting out time periods and detail. Missing a test of the whole system to show real interactions. Could something have been built and then gravity/interactions shown in a bit more depth with more blocks working on the screen?
3		Extensive testing has been carried out, but the evidence presented in the form of representative samples does not make clear that all of the core requirements of the solution/investigation have been achieved. This may be due to some key aspects not being tested or because the evidence is not always presented clearly.	5-6	There is evidence that the main requirements of the solution have been achieved. There is not much evidence that it all works together and something substantial could be built. Therefore placed into level 3.
2		Evidence in the form of representative samples of moderately extensive testing, but falling short of demonstrating that the requirements of the solution/investigation have been achieved and the solution is robust/investigation thorough. The evidence presented is explained.	3-4	
1		A small number of tests have been carried out, which demonstrate that some parts of the solution work/some outcomes of the investigation are achieved. The evidence presented may not be entirely clear.	1-2	
		No evidence presented	0	Mark awarded: 6

Evaluation		
Level	Criteria	Mark
4	<p>Full consideration given to how well the outcome meets all of its requirements.</p> <p>How the outcome could be improved if the problem was revisited is discussed and given detailed consideration. Independent feedback obtained of a useful and realistic nature, evaluated and discussed in a meaningful way.</p>	4
3	<p>Full or nearly full consideration given to how well the outcome meets all of its requirements.</p> <p>How the outcome could be improved if the problem was revisited is discussed but consideration given is limited. Independent feedback obtained of a useful and realistic nature but is not evaluated and discussed in a meaningful way, if at all.</p>	3
2	<p>The outcome is discussed but not all aspects are fully addressed either by omission or because some of the requirements have not been met and those requirements not met have been ignored in the evaluation.</p> <p>No independent feedback obtained or if obtained is not sufficiently useful or realistic to be evaluated in a meaningful way even if attempted.</p>	2
1	<p>Some of the outcomes are assessed but only in a superficial way.</p> <p>No independent feedback obtained or if obtained is so basic as to be not worthy of evaluation.</p>	1
	No evidence presented	0
		Mark awarded: 3

End user feedback is present but a bit superficial. It is aimed at 8-15 year olds and would have been good to have seen a range of feedback and perhaps some images of the creations made.

Some good observations made by the student about current status of game and considerations for improvement.

Total mark	53 / 75
Concluding comments:	<p>A project that has led to a good amount of technical skills being shown but perhaps is limited by the ambition of the student. Would have perhaps expected the implementation to have more code but what has been coded does demonstrate Group A skills. Perhaps if electricity had been implemented or a block with more complex interactions this would have forced the student to design this out more carefully and then implement. Currently this does have a weak analysis and design section.</p>
Signed:	Date: