## AQA Logo

## 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.

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| **Centre number** |  | **Centre name** |
| 64395 |  | Godalming College |
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| --- | --- | --- |
| **Candidate number** |  | **Candidate’s full name** |
| 3572 |  | Elenor Taylor |
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**Section one - the project**

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

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| Project title | Is it possible to display a correlation between CO2 emissions and health expenditure computationally |
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| Project type | | problem  investigation |
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| **Outline description** |

To be completed by the teacher:

From the given description the project is at a standard required for A-level Yes/~~No~~

**Section two – project assessment**

To be completed by the teacher

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| **Analysis** | | | |
| **Level** | **Criteria** | **Mark** | **Comments/evidence** |
| 3 | 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. | 7-9 | Clear initial research that sets out clearly the direction of the investigation. 🡪Page7  Clear discussion of the data to be handled and the processes that could be employed. Some formal techniques employed (IPSO DataFlow Doc Specification)  Requirements (page 19) are well broken down to be specific and measurable with sufficient detail to be useful  Parsing the data file is discussed on pages 21/22  Overall this must be near to fully scoped. |
| 2 | 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.  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.  Problem sufficiently well modelled to be of use in subsequent stages. | 4-6 |
| 1 | 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.  Some attempt to consider, through dialogue, the needs of the intended users of the system, or recipients of the outcomes for investigative projects.  Problem partly modelled and of some use in subsequent stages. | 1-3 |
|  | No evidence presented | 0 | **Mark awarded: 8** |

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| **Documented design** | | | |
| **Level** | **Criteria** | **Mark** | **Comments/evidence** |
| 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 | UI. Clearly designed/back designed using Visual studio tools. There is useful discussion around the UI but lacks specific annotation  Top level design: sound class diagram but no clear flow through the system  Process: sound pseudo code for the algorithms used. The discussion around which sort to use is ‘by the by’  Storage: the actual method that the data will be extracted from the file, is side stepped. But there is a clear discussion on the general process.  Just misses out on Level 4, but clearly adequate with most key aspects described. |
| 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: 9** |

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| **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 | Requirements are all met with a very few partial omissions. There is no doubt that this is what could be expected of an A-level project.  Would it be reasonable to expect storage of the results for future use. Should there be automation for specific options (i.e. the 1 in the project title?  Looking at the advice from the standardisation meeting I shouldn’t dock marks in this section because of possibilities  Thus full marks |
| 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.

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| **Technical solution – techniques used** | | | |
| **Level** | **Criteria** | **Mark** | **Comments/evidence** |
| 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 | Table 1 Group A   * Complex OOP Model (although some inheritance is a little shoehorned) * Dynamic generation of lists of objects taken from parsed text files * ( e.g. page 35) * Handling of a large and non-uniform data set. * Application of A-Level standard algorithms(page 37) * Recursive sort used within spearman correlation * Lists   Table 2   * File paths parameterised (apart from the settings file called fileLocations.txt) * Readable self documenting code * Good use of types * All input and IO trapped for exceptions. * Strong UI and validation leading to defensive code * Code is well modularised with sound interfaces * Just a few examples of lazy default naming of form objects   No credit given for the use of Visual studio graphing especially as it sometimes scales so poorly.  Effectiveness is high. There is a discrepancy between correlation values but I’m unsure if this is significant. The lack of storage of results is a small effectiveness issue  Certainly top 1/3rd of top band |
| 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 |
|  | No evidence presented | 0 | **Mark awarded: 25** |

**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

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| **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 list of test supported by a thorough video (first 2 mins are a code walkthrough) and the timings in the table are skewed but fine if you are work through the whole thing.  youtu.be.com/i0mEJVpFYgI  url here in clearer font  Whole system is tested, with the processing tested against “hand” calculations . should have split the requirements into created features of the system.  There should have been at least a few more correlations tested, with the summary text being tested to see if it correctly states the strength for poor corrilations  There are elements that should have been “whitebox” tested e.g.  the removal of null data (page 49)  Comfortable that this is still extensive,… but only just. |
| 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 |
| 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: 5** |

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| **Evaluation** | | | |
| **Level** | **Criteria** | **Mark** | **Comments/evidence** |
| 4 | Full consideration given to how well the outcome meets all of its requirements.  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. | 4 | Testing is displayed per requirement with comments and future developments where appropriate.  3rd party feedback is useful Page 51  Summary of future developments follows on well.  The lack of depth overall and the slightly cursory nature of the requirements evaluation stops this being Level 4 |
| 3 | Full or nearly full consideration given to how well the outcome meets all of its requirements.  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. | 3 |
| 2 | 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.  No independent feedback obtained or if obtained is not sufficiently useful or realistic to be evaluated in a meaningfully way even if attempted. | 2 |
| 1 | Some of the outcomes are assessed but only in a superficial way.  No independent feedback obtained or if obtained is so basic as to be not worthy of evaluation. | 1 |
|  | No evidence presented | 0 | **Mark awarded: 3** |

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| **Total mark /75** |
| **Concluding comments:** |
| **Signed: Date:** |