## 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** |
| 3712 |  | Jake Foster |
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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 | Decision Maths Learning tool (Dijkstra) |
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| Project type | | problem  investigation |
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| **Outline description**  Generates a random graph and gets the user to find the shortest path using Dijkstra. It will then check the users working with Dijkstra’s to see if they are correct. The results and time taken is recorded in a database. There is a leaderboard to see fastest times. |

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 | Page 3 – 12  Good research, that pulls out the relevant info.. a range of techniques used. Certainly at least well scoped.  The requirements don’t work if stood alone from the rest of the project.. It never actually states what the system needs to do.. all the individual components are sound and fit with research.  Happy with the modelling strong Level 2 |
| 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: 6** |

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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 | Page 13 - 21  Clear UI design for the student.. is there any teacher interaction?  Good process design showing the development of the key algorithm  Class diagram is included but imperfect.  If there is just one table then a Mysql DB seems a little ott. So DDL might be missing elements.. the Normalisation process infers there are 3 tables .. but no ER diagram…  I would still say the design is just adequate as most of the key elements are included |
| 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: 7** |

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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 | Page 22 - 44  The system seems to meet everything in the requirements.  Is it everything I would expect for a package like this??? Not really…a level of feedback and teacher monitoring should be included.. but as minor additions in terms of processing..  Still Level 3 |
| 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: 12** |

**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 | page 22-44  a-level maths/ tree traversal  The GUI graph is a well implemented run-time generated set of ui objects and quite tricky. Not just a standard VB form! page 37  OOP has composition and whilst not optimal is sensible.  Simple SQL but effectively does what required : page 24 – 27  Bubble sort….  So a mix of Table1 group A and group B…..  Coding style is a mix too..  Good naming(mostly), clear structures and modules.. easy to read, sound exception handling.  Some hard coded filenames and some reparative code lets it down.. middle of band 2 from Table 2  Overall middle of L2 would seem a little harsh but can’t quite move to L3 (even the bottom) so toppish of L2 |
| 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: 17** |

**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 | Page 45 – 47  A reasonable run through everything at least once.  Testing of the marking could have done with the hand tracing being shown.. although it is correct.  Really more than one graph should have been tested with values.  We don’t see a full run through 3 and 5 questions.  He has shown core requirements but superficially. We can see the system works and is quite robust. Not L4.. only just L3  Video link: <https://youtu.be/dBzsE6lsniI> |
| 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 | Page 48 - 51  Good consideration of requirements. Clear user feedback, analysis and future improvements are both quite brief. |
| 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 50 /75** |
| **Concluding comments: This was a moderated project with good agreement between teacher’s marks. A good effort throughout with a decent solution backed up by sound documentation.** |
| **Signed: Date:** |