# James Knatt

### Complexity

The nature of a timetabling problem is inherently complex being at least O(n3). James approached it in a genuinely open way and his solution makes use of Lists, Recursion, Regex, bespoke file structure and is derived using computational approaches that are at least A-Level. Looking at his design and solution there are clearly more efficient solutions and his approach may not stand to being scaled up to a much larger data set. BUT I have no doubt that is a Fully Complex, Fully programed project.

### Analysis (10)

Extensive and well structured, clear comprehensive SMART objectives that can be clearly linked to the needs of the user derived from the Investigation. Proposal and justification of the solutions is weaker than the rest of the chapter. Overall Top Band

### Design (10)

Good top down overview to the solution. Interesting and effective Investigative approach to Algorithm design. Clear appropriate HCI, Regex and File designs. Overall Effective and when combined with evidence from the system maintenance chapter a detailed design. Top Band

### Tech Solution (18)

Clear evidence of a complete robust solution.. There are a few hard coded values that should really be being pulled from a settings file. The final coded solution isn’t the most elegant way of solving this problem but is still a highly appropriate approach. Clearly Top Band

### System Maintenance (6)

Could have been more efficiently written by referencing over parts of the project. Code is very readable and on the cusp of genuinely self-documenting, and is clearly commented when required. Modular structure is clear. With clear explanation of all elements of the solution. If the evidence from other chapters is included then this is clearly Top Band

### Testing (8)

Good Plan, including TEX for input, clear screenshot evidence. White box and hand tracing for algorithm testing. There is proof from the evidence that the system is both complete, robust and reliable. The thorough approach allows full marks to be awarded.

### User Guide (10)

In AppendixD. From the content I can see no reason not to give full marks and it comprehensively complies with all criteria. Whilst there might be an argument to drop 1 mark for QWOC on balance I can’t justify that there is a negative impact on the work; Thus Full Marks

### Appraisal (6)

Well-reasoned and detail explanation of how well the objectives have been met. Clear genuine user feedback which has been insightfully analysed. Full and realistic overview of the possible extensions and improvements.

Moderation notes:

Although This project was joint top for the centre it was not fully moderated. However the chapters that were awarded full mark were cheked by the Head of department to validate the assessment decisions

# Andrew Burton

### Complexity

The Nature of this project leads to a Part Programmed Part Package solution. The size and complexity of the data does lead to this requiring a complex solution. Andrews use of runtime created lists of data objects Regex validation, a remote database server, and significantly complex SQL statements leads to the judgement that the problem and solution is complex.

### Analysis (10)

Comprehensive and well-structured Investigation, Objectives well supported by analysis. Slightly favouring berdth over depth in terms of quality. Overall just Top Band

### Design (11)

Very detailed design. Clearly effective. Comfortably top band

### Tech Solution (18)

Clear evidence of a complete robust solution. Wide Range of SQL statements. The lists of runtime objects are limited to the holding of data, more use of encapsulated processing could have been made however this is a minor criticism in the context of a PP project. The normalisation of data is just short of optimal. However overall Clearly top band.

### System Maintenance (6)

Lacking in referencing to other parts of the project.. Andrew chose to reproduce evidence for this section.. Code is very readable and on the fall just short of self-documenting, however is clearly commented when required. Modular structure is clear. With clear explanation of most elements of the solution. He is missing set-up of the remote database. Just Top Band

### Testing (8)

Very Full Plan, including TEX for input, clear screenshot evidence. There is proof from the evidence that the system is both complete, robust and reliable. The thorough approach allows full marks to be awarded.

### User Guide (10)

From the content, I can see no reason not to give full marks and it comprehensively complies with all criteria. QWOC is clearly top band; Thus Full Marks

### Appraisal (5)

The justification and reasoning behind his appraisal is a little binary in its approach so only hits the middle band of marks. Clear genuine user feedback which has been analysed and a realistic overview of the possible extensions and improvements. Allow all 3 of the additional marking points to be awarded.

### Moderation Notes:

As the top Scoring project this was moderated. No discrepancies in the marking bands and agreement well within tolerance of the overall score. Individual sections were scored within a mark and no adjustment was made.

# Toby Devlin

### Complexity

At first glance this seams a fairly safe adequately complex data processing problem. However there are significant elements of complexity in the solution to justify marking it as a Complex data processing . The solution includes: elements of OOP, List data structures, Significantly complex SQL with joins and parameters, a remote database server, and the use of SMTP to send email. Whilst the final judgment wasn’t based on “box ticking” these features the sound use of these features did tip the balance when making the judgment. All three staff who assessed this project were happy that it was the correct call in the end.

### Analysis (9)

A structured investigation that should provide enough detail for him to discern the users needs. The system requirements and objectives are presented in a tabular format with interesting numbering system. Whilst this is not one of the presentation methods we promote student’s use it is nevertheless effective and I am confident it fulfils the requirement for a number list of SMART objectives.

### Design (8)

Clearly a feasable design. If evidence is taken from the implementation of the solution then the overall design is detailed. The design is also well shown to directly fit the problem analysed. Just falls short of the top band of marks due to the breadth and depth of processing design.

### Tech Solution (15)

There is evidence of a working system. The degree to which the solution is robust and the number of objectives not met, lead the decision that this doesn’t hit the top band of marks, despite the number of technical features employed. The complexity of the SQL commands and data structure within the database, with the successful employment of oop techniques to store data in the program leave it near the top of the second band.

### System Maintenance (6)

Very good clarity of code with insightful annotation. Clear database setup, and oop structure, and email settings. Reproduces evidence rather than referencing but only just fall short of full marks.

### Testing (7)

VERY EXHAUSTIVE. Maybe at the expense of clarity lots of simple tests BUT all inputs are tested with TEX data. Following a clear plan Key elements of processing and all SQL commands are tested with screenshots . Some whitebox testing is shown

### User Guide (9)

Clearly hits Top Band as all criteria met. Nothing major in the QWC to mark down the section. There is a title missing on page 77 “Errors and Troubleshooting”, this and the overall formatting prohibit the awarding of full marks for this section.

### Appraisal (4)

All of the objectives are reviewed with good reasoning but lacking a little detail. There is no reason to doubt the user feedback as the centre in confident that the student has maintained regular contact with the user. The analysis and development of idea form the feedback is too limited to award all 3 marks overall 2+2.

### Moderation Notes:

This Project generated significant discussion both in terms of the complexity of the project and the marking of certain elements. Once the complexity was agreed to be a complex data processing problem. The debate became much more subtle in terms of mark range, mainly centring on some of the slightly novel presentation techniques Toby had adopted. Marks where adjusted in 4 sections with the Head of Department blind marking the whole project for reference.

# George Povydysh

### Complexity

Whilst there are elements of the initial problem that could clearly be a complex programming problem, It is clear from the design and evidence of implementation that the reality is a solid adequately complex data processing project. Even though he has attempted to implement his solution using OOP techniques, regex and a remote database the solution as a whole does not merit being assessed as complex. The lack of complexity in his SQL statements and the naivety in the way the data is normalised further confirms this judgment.

### Analysis (6)

Just falls short of top band for AC

### Design (6)

Ditto

### Tech Solution (11)

The majority of processing objective have been met if the system is considered to be adequately complex. The system is functional but not totally robust and without the elements of the initial scope that would deem it to be complex.

### System Maintenance (5)

The code is well written and clear. As well as good naming and use of structure George has added clear comments and further explanation where required. Almost all elements are excellently described, although he had omitted the database settings (other than within his code) despite this faux-pas the quality of the rest of the maintenance section is worth full marks for the AC criteria

### Testing (6)

A reasonable test plan including the use of data sets. In/out well tested for TEX. Testing of some database functionality but left as just short of top band as the screen shots do not fully evidence the robustness of the solution.

### User Guide (5)

Overall a basic attempt at each criteria. The Assessment of QWOC justifies the 3rd scoring band with the content just about fulfilling the criteria for this band also.

### Appraisal (3)

Good attempt at discussing the SMART objectives set deserving of the 2nd band. User feedback whilst sought and evidenced was not analysed in nearly enough detail. And scored just 1/3

### Moderation Notes:

As a project probably on the C/D grade boundary Georg’s project was moderated. Blind marking by two teachers. With the Head of department independently verifying the assessment judgments. There was generally good agreement with a 1 mark discrepancy in 3 sections. Debate was had about how generous to be with the user guides problematic page numbering, but this only swayed a member of staff by 1 mark.

# Toran Nicol

### Complexity

The problem is synonymous to many business related financial data issues faced by businesses who need to make use of the same data for many different functions. The initial discussions promised to provide a fully complex programming problem with elements of data processing. The candidate chose to take the project down a Data Processing route and didn’t have the motivation to develop the skills to fully engage with the project. Despite the incomplete nature of the solution the problem remains adequately complex

### Analysis (5)

Structured investigation and analysis but clearly fall short of being comprehensive.

### Design (3)

Less than feasible but some elements of detail included

### Tech Solution (4)

The system show potential with some key elements working

### System Maintenance (2)

Even taking evidence form the rest of the project it is clear that this section is limited to the bottom marking band

### Testing (4)

There is a clear band and an attempt at TEX data. Screenshots are clear but obviously limited by the size of the overall system.

### User Guide (1)

As user guide has been included that justifies the award of 1 mark

### Appraisal (0)

Not included

### Moderation Notes:

As a project that is clearly unlikely to reach the E-Grade boundary and not our lowest scoring project this was not moderated. Although as is the general policy marked by the teacher who was not the nominal mentor for the project.

# Robbie Ho

### Complexity

The student’s initial chosen solution was an Android app. Despite strong advice he chose not to include the considerable work he put into developing this (although it didn’t actually work on the device), He instead decided to re-build the system in VB towards the end of the project time available. His chosen solution is vb front end with an access database even this has to be inferred due to lack of evidence. At best the submitted solution can be assessed as **Limited complexity**

### Analysis (3)

Some Investigation with significant omissions (a couple of items are placed in the design section)

### Design (1)

Very limited, even with evidence taken from the user manual of “inferred design”

### Tech Solution (2)

Really the only evidence is of a HCI possibly with a Database connected

### System Maintenance (0)

None submitted even with the evidence of the user manual this is not worthy of a mark

### Testing (0)

None submitted

### User Guide (4)

As user guide has been included that attempts to walk the user the system. There is a Table of contents. The QWOC doesn’t limit the marks

### Appraisal (2)

There is an evaluation of the objectives, user feedback has been sought.

### Moderation Notes:

As the lowest scoring project this was independently marked and moderated by the Head of Department, The complexity of the project was discussed and whilst the mentoring teacher wished for adequate complexity to be used the printed evidence didn’t support this. Weather to award the single marks was discussed and a pragmatic approach was adopted over if the mark should be awarded for tech solution OR maintenance but not both and that the evidence from the user manual shouldn’t be used to judge several sections

# Zac Britton

### Complexity

The problem fits many of the characteristics of an adequately complex data processing problem. The solution has elements of complex data processing including: Regex, remote database server, SMTP and SMS communication, and a recursive sort. However even with these features the overall solution doesn’t meet the overall requirements for being fully complex data processing project. The simplicity of the (wide range of) SQL commands and the lack of other algorithms leave it at the top of the adequately complex criteria.

### Analysis (8)

Extensive structured investigation, Strong SMART objectives that meet the users needs as specified in the analysis Top Band of AC.. short of full marks.

### Design (8)

Initial Entity Relationship not normal, but the normalisation workings are clear. The final structure appears to have un-normalised elements. HCI design is good, and if reference is made to the system maintenance to infer further design then this can comfortably be classifies as effective.

### Tech Solution (12)

There is clear evidence that the majority of processing objectives have been met. There are some nice technical features to the project but as discussed in the complexity section above the central purpose of the system is slightly lacking in processing. There is a reliance on hard coded values, that should be held in a setting file. Falls just short of high technical competence.

### System Maintenance (3)

evidence is taken from the title section, design user guide and testing. Code is clear structured and readable but falls short of self documenting, comments are useful where employed. Details of database server, SMTP and SMS implementation are not detailed enough. Thus is not awarded top band.

### Testing (6)

Use of TEX data sets and a clear plan, screenshots are clear and overall the system appear to work well. There is too little evidence of processing and output to award the top band.

### User Guide (8)

All requirements addressed in detail. No reason to limit the marks awarded due to QWC. Full marks awarded

### Appraisal (5)

Evaluation of the SMART objectives is both reasoned and detailed. The centre is happy that the user feedback is genuine. Zac’s Analysis is thorough and he makes good suggestions for further improvement and extension

### Moderation Notes:

Sitting near last years C grade boundary this project was cross marked. There were only 3 sections where there was disagreement; each by a single mark and would have only affected the final score by a single mark.

# Jake Smith

### Complexity

The nature of a physical simulation to be modelled using directX led to the assumption that this would be a Fully Complex programming problem. The extent to which this initial scope was explored and the lack of storage leaves this short of fully complex, despite the inclusion of other complex technical features.

### Analysis (5)

Objectives are appropriate and largely SMART but fall short of being comprehensive. The investigation and analysis on which they are built is poorly evidenced. The user requirements can be inferred from the objectives, but it is impossible to fully judge due to the lack of documentation.

### Design (4)

Reasonable HCI and some algorithm design. With inferring further design from the evidence of the created system then this is just a feasible design.

### Tech Solution (11)

There is clear evidence that the solution worked. With the majority of processing objectives met. The successful use of directX to create the simulation purely from coding and a clear set of computer aided learning task is enough to secure the 3rd band.

### System Maintenance (3)

The scale of missing detail regarding the technical requirements of the system prohibits the top band. However the code is clearly readable and well commented in sections.

### Testing (4)

The system has little in the way of data I/O however it has been tested using planned TEX data. The screen shots evidence the tests clearly. The system that is shown to be reliable and robust. The lack of evidence regarding the testing of the directX interface and associated algorithms is a significant omission.

### User Guide (5)

Jake has addresses all requirements. Overall the guide is very brief lacks detail and reads as if it was rushed. Both QWC and content fit the 3rd scoring band

### Appraisal (4)

There is a detailed evaluation of the Objectives which are largely SMART. Genuine user feedback has been sought and analysed to a degree. There are some suggestions for improvement and extension but again they lack detail and justification.

### Moderation Notes:

The possible ambiguity around the complexity and the centres desire to fully moderate a project near the bottom of the grades led to this project being selected. It was blindly cross marked by two teachers and the head of department. Each person was asked to mark the project as if it was fully complex AND separately as if it was adequately complex. During the moderation meeting this project had the widest spread of marks allocated by different staff. With every section having a disagreement of 1 or 2 marks. Usually the discussions revolved around the extent to which this project met a criteria and once the complexity band was decided the final outcome differed by 4 marks overall.