Version 1.0: 0810

General Certificate of Education

Applied Information and Communication Technology 8751, 8753, 8756, 8759

IT09 Software Development

Report on the Examination

2010 examination – June series

Further copies of this Report are available to download from the AQA Website: www.aqa.org.uk

Set and published by the Assessment and Qualifications Alliance.

The Assessment and Qualifications Alliance (AQA) is a company limited by guarantee registered in England and Wales (company number 3644723) and a registered charity (registered charity number 1073334). Registered address: AQA, Devas Street, Manchester M15 6EX

Unit 9: Software Development (IT09)

The format of the examination is an AQA-set assignment, for which candidates are allowed time for research and design work (the Investigation Time), then a period of Controlled Conditions during which candidates are expected to produce their software system and an evaluation of the product and their own performance.

Commentaries on exemplar work from previous series' may be accessed through the Subject Manager at AQA.

General Comments

Some candidates produced software systems that did not address the task set. These candidates were unable to access the full range of marks and often scored low marks.

The Task

The task given for this examination series was:

"A client wishes to be able to use a software system to record data about customers and the products/services that they purchase.

The client wishes to be able to add and amend data held about specific customers. They also wish to be able to analyse the customer data stored and identify their most popular products/services by area using a graphical format.

The software system should be designed for a clearly specified client and meet the requirements of that client. It should also take into account the ICT skills of the intended user(s)."

Items (a) to (g) of the task are produced during the Investigation Time, whilst items (h) to (m) are produced during the Controlled Conditions.

Items (a) to (f) produced during Investigation Time

Many candidates did not appear to spend enough time thinking about who they would be creating the system for. This was shown in the generally poor marks awarded for items (b) to (e). This poor understanding had a detrimental effect on their performance in later items in the task.

Item (a)

Many candidates produced a time plan that listed the tasks to be undertaken. Some broke those tasks down into subtasks. Most candidates included an estimate of the time required to carry out the tasks. Those who provided a task based time plan, listed in a logical order, and time estimates for each task were awarded two marks. Candidates who only reiterated the items written in the Candidate Booklet were not awarded any marks. Candidates whose plans were broken down into tasks, but had not listed them in a logical order were awarded one mark.

Item (b)

Most candidates did describe some kind of relevant organisation and a person within the organisation as their client, but did not describe why the software system in the task was required. Some explained why a system was required but not why the items specified in the task were necessary, such as a graphical representation of the most popular products or services. Those who did were awarded one mark. A clear description of both was necessary for two marks. Some candidates appeared to completely ignore the task and described various types of organisation or individuals that did not fit the task set.

Item (c)

Most candidates were awarded one mark for identifying an intended user or users and relevant IT skills, or lack of them. Some candidates used phrases such as 'Level 2 IT skills' which are not meaningful in this context and so were not awarded marks. A substantial number talked about visual problems, which are not directly related to the skill level, but may have an impact on the design of the interface. These candidates were awarded a mark with benefit of the doubt. Very few clearly indicated how the relevant skills of their user would affect the design of their system.

Item (d)

It was rare for candidates to provide a comprehensive list of client needs, which included all aspects of the task set. Many neglected to describe what the graphical representation of the most popular product or service would be used for and so were only awarded one mark. Those who did provide a description sometimes produced excellent reasons for their use. It was very rare for candidates to explain how their proposed system would meet these client needs and so gain maximum marks.

Most candidates stated what inputs and outputs were required to achieve the task set. Those whose proposed systems did not include the items required to achieve the task set were not awarded more than one mark. A good number of candidates provided a specification of the inputs (looking not only at the data input, but also actions requiring choices from lists, button presses and so on) and of the outputs – providing drawn designs for the system's interface. These candidates achieved the second or third marks available, depending on the quality of the work submitted.

There were some good pseudocode descriptions of the processing necessary, with some process flow charts and some good narrative descriptions. To achieve the third mark the description of processing must be agreed with the client.

Item (e)

Most candidates produced evaluation criteria that included qualitative and quantitative measures. Some were comprehensive, thus ensuring that they were appropriate to assess if the client needs had been met. These were awarded three marks. Some explained their criteria and so achieved the fourth mark. Candidates who restated the client requirements, just renaming them as evaluation criteria were only awarded one mark.

Item (f)

Very few candidates specified in advance of the controlled conditions how they would manage their files, though those that did show an awareness of file management and showed that files had been managed sensibly were awarded one mark. Versions of work file, backups and sensible file and folder names were required to achieve the second mark.

Most candidates made a good attempt at producing designs for the interface of their system, showing the key features. These were awarded one mark. Very few explained how the design choices made related to the user needs, though better candidates did clearly note how the features would meet the user needs listed.

Some candidates showed that modular programming techniques would be used by describing reusable or public modules of code that they would write. Those who created simple navigation structure charts that did not show this modularity were not awarded marks. Most candidates appeared not to know what constituted modular programming techniques and did not attempt to address this item of the examination.

Most candidates provided some kind of data dictionary that defined the data structures necessary for their system. The majority of these were sufficiently detailed to be awarded two marks. A good number described typical items of data, or validation rules that would be necessary to allow a third party to implement the system.

Item (g)

Most candidates either produced a test strategy that showed how integration and system test would be conducted, or test plans that tested functionality. Very few produced both. It was disappointing that many candidates did not appear to understand how to carry out integration testing of the system as a whole. Instead they produced test plans that tested, for example, whether a new record could be added, but did not check whether this new record affected the graphical representation of the most popular product. Test plans should be produced with sets of normal, extreme and erroneous data to be used in testing in order for full marks to be awarded. Sets of data reduce the number of individual tests that need to be documented if, for example, a complete set of data is identified in order for a whole new record to be added.

Items (h) to (m) produced during Controlled Conditions

Candidates may only take printed or hand-written material in to Controlled Conditions, and additional material may not be brought in after the start of the first session of Controlled Conditions. Implementation of the planned software system must only be attempted under Controlled Conditions.

The majority of candidates in this examination series used Visual Basic to produce their software system. Most candidates provided evidence of using programming techniques to produce their system, with some extremely good examples being seen.

Item (h)

Most candidates provided good evidence of following their test plans and achieved two marks. Some showed what changes were needed to the solution, or the changes made, and were awarded three marks.

Very few candidates provided evidence of integration testing by, for example, adding a record, amending that record, checking whether the graphical representation reflected the additional or amended data.

If the software system produced did not perform all of the functions specified in the task then only one of the three marks available was awarded. Many candidates did not provide a graphical representation of data and so were only awarded one mark.

Item (i)

Most candidates had appropriately used some candidate defined program control structures, but few had used both repetition and selection structures which was necessary to achieve one mark. Even fewer explained their choice which is required for three marks, though the best candidates did give good explanations.

Most had also used appropriate candidate defined variable, object and procedure names.

Few had identified where modular programming techniques had been used.

It was clear, in the majority of scripts, that appropriate data types (both in the data structures and in the program variables) had been used. Few candidates explained the choice of these data types, particularly in the program variables) in order to achieve the third mark available.

Most candidates produced good annotated evidence of the key features of their software system and in many cases this was good enough for three marks to be awarded.

Item (j)

Approximately half of the candidates had produced instructions for installing the software system on the client's machine and instructions for using the software system. Most of these were awarded two marks. Of the other candidates most provided either installation instructions or instructions on using the software system and so were awarded one mark.

Item (k)

In this item the candidate's evaluation of their software system and the quality of written communication is assessed.

Stronger candidates used well written text to analyse the success of their software systems by comparing the results of testing with the evaluation criteria and the client needs. They used an appropriate form of presentation, often text combined with tabular information, an introduction and a conclusion. They also used appropriate vocabulary to explain some of the complex ideas in their analysis. On the whole their work in this section was well structured and coherent.

Weaker candidates tended to neglect the results of testing and often displayed poorly written English that was not in an appropriate format.

Item (l)

Candidates who had achieved full marks for item (a) often achieved full marks for this item. Weaker candidates tended not to explain alterations to their schedule in enough detail to achieve two marks.

Item (m)

Many candidates discussed their own performance in enough detail to achieve two marks, often discussing lessons learned and possible alternative approaches. Most candidates did achieve at least one mark.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the **Results statistics** page of the AQA Website.