AQA

General Certificate of Education

Applied Information and Communication Technology 8751, 8753, 8756, 8757 and 8759

IT09   Software Development

Report on the Examination

2009 examination - January series

Unit 9: Software Development (IT09)

This was the fifth series for the examination of this unit. 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 system and their own performance.

It is important that candidates make full use of the time available and good time planning will ensure that items such as the testing, user instructions and evaluation are not neglected or rushed. The marks allocated to each item in the Candidate Booklet should help in determining the time to be spent on each item listed for the task.

Centres are reminded that in addition to this report, there are a range of sources of support and guidance available for this unit, including a Teachers Guide and the Specification.

General Comments
The task set for this unit is provided by AQA in the Candidate Booklet, and is changed for each examination series. A significant number of candidates appeared to have used tasks from previous series, or to have devised their own. Marks are awarded for producing a software system that meets the requirements of the task set for the current series, and deviating from the task is likely to significantly restrict the number of marks available.

Centres are reminded that the task set by AQA is intended to form the assessment for this unit. It is essential that candidates have studied the items listed in the Specification and have had adequate experience of the software to be used, prior to attempting the set task. Only work produced independently by candidates should be included.

Centres should remind candidates that this unit is assessed using the items listed in the Candidate Booklet. Credit will only be given for work that meets the requirements of these items.

The Task
The task given for this examination series was to design and produce a system for a specified client to record enquiries received from customers about the products and/or services provided. The system should allow the user to record information about new enquiries from customers, and search existing information, for example, to identify customers who have made the most enquiries. The user should also be able to amend enquiries that have been made, indicating whether a response has been provided.

Although many candidates did make reference to enquiries from customers in their software systems, many did not include the ability to analyse the enquiries stored. Candidates should be reminded that they are expected to include all of the features listed in the task in their designs, even if they go on to only partially implement the software system.

Items (a) to (f) of the task should have been produced during the Investigation Time, whilst items (g) to (l) must only be produced during the Controlled Conditions.

Items produced during Investigation Time
Most candidates produced some form of outline list of tasks to be undertaken, although a significant number merely listed the items given in the Candidate Booklet. It is important that candidates break down the tasks set to show how they will attempt them, and that they understand what they will need to produce. Candidates are expected to consider the amount of time required to complete each of the tasks that they have identified. This should be reflected in their time plans, which should refer to hours to be spent on tasks, rather than a list of start and

end dates. Candidates should be encouraged to produce a single time plan that covers both Investigation Time and Controlled Conditions time (as stated in item (a) of the task), and annotate it by hand. This method provides a much fuller account of the changes that a candidate makes to their time planning, and provides them with useful reference material when attempting item (l).

Some descriptions of the background of the client did not really relate to the task set and the intended user(s) of the new software system specified in the task. Candidates attempted to identify the skill levels of the user(s), but often statements were very superficial referring to "not very skilled" or "novice" users. It is essential that candidates describe the skill level of users in relation to the software system that is to be produced, indicating clearly their practical skill level and their characteristics and how these would influence the design of an appropriate interface.

To gain full marks for evaluation criteria, candidates should clearly explain how the criteria are related to the requirements of their client (as described in item (c)). It is essential that the evaluation criteria produced by candidates are sufficient to allow them to make good critical judgments of the software system that they produce. It is not appropriate for candidates to use evaluation criteria as a checklist or "to do" list.
Candidates who have a clear understanding of the clients requirements and of the potential users of the system produce more appropriate evaluation criteria, which subsequently enable better testing and evaluation to be carried out.

Centres are advised to refer to the current version of the Specification (available on the AQA website) for a description of appropriate content for a software specification. Candidates should be reminded that there should not be any evidence of a prior implementation of their software system in any part of their software specification, as this is not design work.

There was little evidence of candidates using modular programming techniques in their software systems and although some had shown that they had broken down their design work using different techniques, they did not show how this had been followed through into their implementations. Centres are strongly advised to refer to the section on modular implementation in the Specification.

The majority of marks available for design work come from clearly annotating and explaining designs in relation to the client and users. A significant number of candidates did not include designs of their data structures in the work submitted.

Candidates should produce a testing strategy for their work, describing what elements of their software system are to be tested, how, and when. It should include testing of discrete modules using individual tests or short test plans, as well as testing of the completed (integrated) system. Testing should make use of the evaluation criteria identified for the solution.

Many candidates produced a single test plan with limited examples of test data. Test plans often referred to only one module of the system to be produced. Very few candidates provided any indication of when modules were to be tested, and how testing was to be used to prove that modules were processing data correctly after being integrated in to the software system.

Candidates should be reminded that their test strategy and test plans form part of the preparatory folder for this unit, and should be printed out or hand-written before the start of the Controlled Conditions. These documents can then be updated by hand as testing is undertaken during the Controlled Conditions.

Items produced during Controlled Conditions
The purpose of the documentation created during Controlled Conditions is to allow a third party to install, adapt and maintain the software system produced by the candidate. It should include information about how the software system was implemented, and should include appropriate comments within the program code to explain the programming techniques and features used.

Many candidates produced step-by-step guides showing how they created their software system, focussing on the mechanics of using their chosen development tool(s) rather than the features of their own software system. These often gained few or no marks.

It is not sufficient to use solely automated methods to generate the software system. Where candidates do use such methods, it is essential that they annotate the code produced to demonstrate an understanding of its meaning. To gain credit for using a range of program control structures or data structures, the majority should be user-defined, or include sufficient annotation to clearly show that the student has a good understanding of what the structure is for, and how it works.

Centres are reminded that candidates need to create a software system that meets the requirements outlined in the task for the current examination series.

The user documentation created by the majority of candidates was not done well. To gain marks, candidates need to describe how to install their system, how to access it, and how to use its main features.

Some candidates produced good evidence of how to access the key features of their software system, but did not provide instructions sufficient to allow their user to install the system. The term "install" was widely misinterpreted as "run", or in some cases "compile". This is not correct – the term refers to the process of transferring the completed (compiled) software system to the client's computer.

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