General Certificate of Education
January 2008
Advanced Award
12 Unit Award

APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY **IT09/PM**
Unit 9 Software Development

1 November 2007 to 21 January 2008

AQA-set Assignment – Candidate Booklet

To be given to candidates on or after 1 November 2007

Time allowed

- Investigation time
- 20 hours under controlled conditions

Unit 9: Software Development (IT09)
The Assignment - Candidate Booklet

Introduction

You should read this booklet together with the unit specification for *Unit 9: Software Development.*

To complete this assignment you must produce a software system to meet the needs of a client, and produce documentation of the work you have done to meet the requirements of this unit.

The work will be completed in two stages:

- investigation time, during which you will carry out analysis and design
- 20 hours of controlled conditions, during which you will implement and test your software system.

There are 70 marks available for this assignment. This is the only form of assessment for this unit. This assignment will be marked externally. You will be awarded marks according to the quality of the work you complete. There are details of what you are required to produce in the *What you should hand in* section of this booklet.

1 The task

For this assignment, you will need to create a software system to meet the needs of a client.

A client wishes to use a computerised display in the window of its premises to show the public information from its database of products and/or services.

The product/service information should be displayed in a random order of the products/services on offer and loop continuously until the client stops the program. The client should be able to add and remove products/services from the system.

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 user(s).

This system may be created using one or both of the following methods:

- an object-oriented programming language
- a database using SQL or other database programming language.

You must **not** use a spreadsheet package to produce your solution.

You should choose a client who will offer you sufficient scope to meet all of the requirements outlined in the specification for this unit. You must also consider the time available to you to implement the system.

You should discuss your choice of client with your teacher/tutor. He/she will help you to choose a suitable client. It is important that you choose a client that is accessible to you. This might be an individual, community group, local business, or public service organisation.

You may need to contact more than one person or organisation to see whether they would be willing to act as the client for your assignment. You are advised to show the letters or emails to your teacher/tutor before sending them in order to make sure that they are appropriate.

If you have difficulty contacting a suitable client, you should discuss this with your teacher/tutor as soon as possible. You must **not** act as your own client or use another student as the client for your assignment.

2 What you should hand in

When you have completed the assignment, you should hand in the following.

Completed during the investigation time:

(a) A time plan to show how you initially intended to complete the work for this assignment (for both the investigation time and the 20 hours of controlled conditions). Your plan should indicate time allocated to each task. *(up to 2 marks)*

(b) Background information about the client and identification of the intended user(s) of the system, including the skill levels of the user(s), and how this will affect your designs. *(up to 4 marks)*

(c) A software specification, agreed with the client, including a list of client needs. *(up to 9 marks)*

(d) Evaluation criteria to be used to test that the software system meets the client needs. *(up to 4 marks)*

(e) A detailed design for a modular software system, showing that you have used standard design methods. This should be sufficient for use by a competent third party to implement your system. The design produced should also include information about any error handling techniques that will be used. *(up to 9 marks)*

(f) Evidence of a testing strategy for your software system. This should include a full test plan, and appropriate sets of test data for modular and system testing. *(up to 4 marks)*

Completed during the controlled conditions:

(g) Evidence that the implementation of your completed software system has been fully tested using the tests described in (f), including evidence of the results produced. *(up to 8 marks)*

(h) Documentation to show how the modular software system you have designed has been implemented, including annotated listings of the program code and data structures used. The annotation should indicate the key features of your system such as program control structures, objects and events. *(up to 13 marks)*

(i) Sufficient instructions to allow a new user to install your software system, access it and use its main features. *(up to 2 marks)*

(j) An evaluation of your software system based on the client needs (c) and user skills (b), as well as the evaluation criteria (d). *(up to 7 marks)*

(k) Your initial time plan (a), updated by hand to show how you actually used your time during the investigation time and the controlled conditions. *(up to 2 marks)*

(l) An evaluation of your own performance in completing the work, including your use of the time available. *(up to 2 marks)*

In addition, the Quality of Written Communication throughout the assignment will be assessed. *(up to 4 marks)*

(Total = 70 marks)

Your documentation should provide evidence of planning and managing work effectively, such as using version numbering, and appropriate file and folder names.

The work that you hand in should be organised in an appropriate order and page numbered. You should put your name, centre number and candidate number on each page. The work should be kept securely together e.g. using treasury tags. Plastic wallets and ring binders must **not** be used. Each of the items (a)–(l) should be clearly identified.

3 The investigation time

The investigation time begins when you are handed this booklet. During the investigation time, you should carry out all of the research, planning and design work needed to create your software system in the controlled sessions.

By the end of the investigation time, you should have produced the items (a)–(f) of *What you should hand in*.

The work must be in hard copy format (i.e. printed or handwritten on paper) and placed in your preparatory folder. The folder must be handed to your teacher before the start of the controlled conditions.

4 Preparatory folder

This folder should contain, in hard copy format, all of the items (a)–(f) which you should have completed before you start your work under controlled conditions.

You must **not** include any material in your preparatory folder that attempts items (g)–(l).

All material in your preparatory folder must be checked by your teacher before you can use it in the controlled sessions. At the end of each controlled session, your teacher will collect in your preparatory folder and return it to you at the start of the next session.

After the start of the first controlled session you will **not** be allowed to bring in, or submit to your teacher, any further materials.

5 The controlled conditions

'Controlled conditions' means 'examination conditions'. You **must** work independently and in silence.

During the 20 hours controlled conditions, you will be using your preparatory folder to produce the items (g)–(l) of *What you should hand in*. Your teacher will tell you in advance when the 20 hours have been timetabled.

During the controlled conditions, you must **not**:

- communicate in any way with anyone, except the invigilator in the case of equipment failure
- access the Internet or any intranet
- have access to any material except your preparatory folder
- take in textbooks or photocopies of parts of textbooks
- copy type
- have access to removable media such as CD-ROMs or USB memory sticks.

The work must be completed by the end of the 20 hours of controlled conditions. The work must be submitted on paper as the examiner will **not** look at work submitted on electronic media such as CD-ROMs or USB memory sticks.

Your final work for submission should consist of hard copy of the items in (a)–(l) of *What you should hand in*.

6 Points to consider

- There is no requirement for you to submit work that has been printed in colour. However, you should annotate (where appropriate) any black and white printouts to indicate to the examiner the colours that you have used in your software system.

- This unit is assessed by an external examiner who will not have seen your software system working, and who must rely on your documentation to award marks. It is, therefore, essential that your documentation is complete, accurate, readable and logically organised.

- Planning and monitoring should not be neglected. They are an important aspect of any project work. It is very unlikely that anyone could produce a piece of work of this complexity without having to modify their plans several times. These changes should be fully documented. If a test fails, for instance, you will need to correct the problem and this should be reflected not only in your test results, but also in your time plan.

- Make sure that you include printouts that are annotated, so that it is clear to the examiner what you are trying to show. Do not be afraid to write on printouts by hand; you will not be penalised for handwritten annotation. In fact, where particularly relevant, this may help the examiner to award marks.

- Make sure that printouts of screen shots are large enough to be legible.

END OF CANDIDATE BOOKLET

There are no instructions printed on this page

There are no instructions printed on this page

There are no instructions printed on this page