Specialist software - SP - Unit 6

Activities supporting the assessment of this award

(To be linked to e.g. Greenfoot, JavaScript or other CAS supporting applications)

Assessor's guide to interpreting the criteria

General Information

QCF general description for Level 2 qualifications

The full details of the descriptions of Level 2 of the QCF are provided from this link [1].

QCF Level 2 is referenced to EQF level 3

In interpreting these levels in the context of these units, the following guidance should be used.

Complexity

The context for Level 2 projects and the associated assessment will be sets of straightforward tasks with a clearly structured and defined brief. The following example is for the use of JavaScript as the target Specialist Software. It is not mandatory, just there to give an idea of the type of activity that can be used.

Example - Here is a JavaScript game called "Ship" [2] the player has to guess letters to make up a word. If they guess wrong the ship begins to sink. Improve the game by using new graphic images or change the game so that it uses a different set of words. Your assessor will provide guidance for whichever task you choose. You will need to study the code for the original game in your web browser and work out which part of the program handles the things you want to change. You can work with friends to solve your problems but you must demonstrate to your assessor that you have learnt how to make the modifications and could use what you have learnt to tackle similar tasks in the future.

There is also a good set of free tools and tutorials to make animation here [3]. It may be too complex for L2 to make an animation, but they could design a character following the tutorials and take it forward into L3 as a more complete project.

In addition for Level 2, the guidance from e-skills for this unit is

- the software tools and functions involved will at times be non-routine or unfamiliar
- the choice and use of input, manipulation and output techniques will need to take account of a number of factors or elements and at times be multi-step
- the user will take some responsibility for inputting, manipulating and outputting the information.

Requirements

- Standards must be confirmed by a trained Gold Level Assessor

- Assessors must at a minimum record assessment judgements as entries in the on-line mark book on the INGOTs.org certification site.

- Routine evidence of work used for judging assessment outcomes in the candidates' records of their day to day work will be available from their e-portfolios and on-line work. Assessors should ensure that relevant web pages are available to their account manager on request by supply of the URL.

- When the candidate provides evidence of matching all the criteria to the specification, subject to the guidance below, the assessor can request the award using the link on the certification site. The Account Manager will request a random sample of evidence from candidates' work that verifies the assessor's judgement.

- When the Account Manager is satisfied that the evidence is sufficient to safely make an award, the candidate's success will be confirmed and the unit certificate will be printable from the web site.

- This unit at Level 2 should take an average level 2 learner 30 hours of work to complete.

Assessment Method

Assessors can score each of the criteria N, L, S, or H. N indicates no evidence and is the default starting position. L indicates some capability but secure capability has not yet been achieved to meet the criterion in the context of the general description of level 2 qualifications above and the assessor guidance below. S indicates that the candidate can match the criterion to its required specification. H indicates performance that goes beyond the expected in at least some aspects. Candidates are required to achieve at least "S" on all the criteria to achieve the unit. They should demonstrate a complete and fully working system that incorporates the secure application of the criteria, including original elements and a clear standard of documentation to explain how their application works.

Expansion of the assessment criteria

1. Input and combine information using specialist software

1.1 I can input relevant information accurately so that it is ready for processing

Any input of new instructions or adaptation of existing ones and or related data that is needed to fulfil their plans constitutes relevant information. In the context of programming, the source code can be treated as information.

Evidence: from candidates' portfolio web pages.

Additional Guidance:

The candidate's plans should focus on the relevant information needed to create their application. Consideration should be given to the reason for choosing the particular software development tools taking account of open standards and open systems. The data found from a range of sources which are formally identified and documented will be organised accurately in a digital presentation environment, normally a web page so that they can be easily shared and communicated. The data should be appropriate for the task informing the design of the application. Level 2 will be characterised by the requirement for structured help and support using the general description of

Level 2 qualifications in the QCF.

1.2 I can select and use appropriate techniques to link and combine information of different forms or from different sources within the software applications

The candidate must show within their programming that there are elements of combining different information and that they can use applications to prepare information for use with their program.

Evidence: from completed working applications and associated documentation

Additional Guidance

The candidate's application should use sequencing of instructions to combine digital information that may have been created and formatted in other applications in useful ways. For example, matching text data in a file created from a text editor with graphics produced in an image processing package or sounds produced in a digital audio editor. Level 2 will be characterised by the requirement for less structured help than for level 1 and support using the general description of Level 2 qualifications in the QCF.

1.3 I can respond appropriately to data entry error messages

The candidate should recognise simple error messages and use these to debug short simple pieces of code. They will need occasional help with more complex errors.

Evidence: observations by the assessor and working error free final program

Additional Guidance

It will help if the candidate refers to the debugging process when they evaluate their work. This can contribute to the unit on Improving Productivity Using IT.

2. Use appropriate structures to organise and retrieve information efficiently

2.1 I can describe what functions to apply to structure and layout information effectively

Candidates should show that they have considered which programming structures to use e.g. program loops, data arrays, functions and variables to handle input from the user and output effects to the screen appropriately in terms of structure, layout and style.

Evidence: from the candidate's portfolio pages and their final documented application.

Additional Guidance

They should document their choices in their portfolio explaining their approach to producing their application. At level 2 the requirement is simply to describe the functions they have used.

2.2 I can select, and use appropriate structures and/or layouts to organise information

Candidates should demonstrate that they have considered the efficiency of their application through a commentary in their portfolio describing the application development process. Level 2 candidates will need specific guidance so that they can "select" and use rather than originate the structures for example by modifying existing programs. Structures and layouts are then pre-defined for them but they can show that they understand these by modifying them to produce a different effect from the original. If they can write self-contained and meaningful applications self-sufficiently they are at least H in the grading system at level 2 against this criterion.

Evidence: from the candidate's portfolio pages and their final documented application.

Additional Guidance

2.3 I can apply local and/or legal guidelines and conventions for the storage and use of data where available

Candidates should show a basic understanding of copyright and licensing and appreciate that with Open Source software they are free to look at the code, modify it and develop their own applications from the data contained in the application. They should also know the value of backing up their work and storing it safely.

Evidence: comments in e-portfolios describing their work, assessor observations,

Additional Guidance

This could be, for example, handling text, images or sound files. If their applications outputs data they should consider the use of open file formats. They should know that if they use any copyright materials that are not licensed for sharing without permission, they are breaking the law. At level 2 they will be able to follow local conventions and observe copyright law but will need support in more complex file handling related to the specific application.

3.Use the functions of the software effectively to process and present information

3.1 I can select and use appropriate tools and techniques to edit, process and format information

Candidates should show that they can use program editing tools to support their work. Their program code should be clearly laid out with sufficient comments to allow one of their peers to follow their work.

Evidence: Documented program source code

Additional Guidance

The documentation should make it clear which parts of any code were taken from other people's work and what they have done to add to, improve or extend the application. They should use analysis of their work and consideration of their comments to improve their approach to tackling the problem. For level 2 the coding aspects will be straight forward and achieved through structured guidance.

3.2 I can check information meets needs, using IT tools and making corrections as necessary

Candidates should use peer review where possible to check that their work meets needs. They should respond graciously to feedback and use it to improve their products.

Evidence: Working program that meets needs. Description of process.

Additional Guidance

Discuss the development of their applications with their peers, checking the code fixing bugs and errors as they come to light. They should document bug fixes in their e-portfolio pages related to planning an/or evaluation. There should be a clear relationship between needs identified and their finished product.

3.3 I can select and use appropriate methods to present information

Candidates should document at least 3 evaluation points in the development of their application selecting an appropriate method to present information about their work.

Evidence: Presentation of the development process of their project

Additional Guidance

These should communicate clearly how they produced their application including comments from peer review where possible. This could be presented in any appropriate way such as an on-line presentation, video or web page. The final evaluation should ensure that there is a fully working application that at least partly meets the needs identified at the planning stage. For level 2 the requirement is only to select and use appropriate methods to present their program documentation and so direction can be provided. The work should be free from obvious errors such as spelling that can be picked up by checking and referred to in peer review.

Moderation/verification

The assessor should keep a record of assessment judgements made for each candidate and make notes of any significant issues for any candidate. They must be prepared to enter into dialogue with their Account Manager and provide their assessment records to the Account Manager through the on-line mark book. They should be prepared to provide evidence as a basis for their judgements through reference to candidate e-portfolios, final projects and through their signed witness statement associated with the criteria matching marks in the on-line markbook. Before authorizing certification, the Account Manager must be satisfied that the assessors judgements are sound.

Links
[1] http://theingots.org/community/QCF_levels
[2] http://ingotgames.org/ship/en/ship.htm
[3] https://morevnaproject.org/