



**General Certificate of Secondary Education
2020**

Digital Technology
Unit 3:
Digital Authoring Practice

**MARK
SCHEME**

Task Guidance

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1 Designing a solution using appropriate tools [13 marks]

(a) Multimedia solution

The design for the multimedia element of the solution should include:

- identification of the user requirements and target audience for the proposed solution;
- navigational structure diagrams;
- detailed storyboards for all elements of the solution (pages, video and animation). Storyboards should also include detail of any interactive and accessibility elements used throughout the package;
- detail of images (including image source) and sound files used within the package;
- description of any scripted elements used within the package;
- description of any accessibility elements used within the package; and
- evidence of prototyping to include A/B testing and the use of user feedback in refining the solution throughout the design process.

1 (a) Designing a multimedia solution using appropriate tools	Marks
The candidate has successfully designed a high quality multimedia solution. User requirements and target audience needs have been clearly identified. Detailed planning for third party implementation is evident through: navigational structure diagrams, storyboarding (showing all elements including pages, video/animation and interactive/accessibility features). Details of all images/sound sources and scripted elements have been included. Prototyping and the use of feedback in refining the solution is evident.	[5]–[6]
The candidate has successfully designed a multimedia solution. User requirements have been identified. Planning for third party implementation is evident through: navigational structure diagrams, storyboarding (showing the majority of all elements including pages, video/animation and interactive/accessibility features). Prototyping has been attempted and there is some feedback in refining the solution.	[3]–[4]
The candidate has designed a limited multimedia solution. User requirements have been poorly identified. Some planning is evident through: navigational structure diagrams and storyboarding.	[1]–[2]
Not worthy of credit.	[0]

[6]

6

(b) Database solution

The file required for this task can be downloaded from the CCEA website (www.rewardinglearning.org.uk/mirrosites/digital_technology/revised_gcse/). The filename is skitrip.xlsx. The file is available in Excel format but centres may adapt the format to suit their own needs. Data should be imported as appropriate.

The design for the database element of the solution should include:

- identification of user requirements;
- details of all input, output and processing elements, including;
 - appropriate use of field lengths, validation, lookup lists and input masks;
 - front end user interface;
 - form design;
 - report design (incorporating grouping, sorting, calculations, headers and footers);
 - query design (simple and complex queries);
 - ERD; and
 - macro design.

1 (b) Designing a database solution using appropriate tools	Marks
The candidate has successfully designed an appropriately structured relational database with all relevant fields. There is detailed planning of required database features, for example linking tables illustrated using an ERD, key fields, validation checks and data capture forms. User requirements have been clearly identified with details of all input, output and processing included. The front end user interface, forms, reports (grouping, sorting, calculations), queries (complex) and macros have been designed to allow for third party implementation.	[5]–[7]
The candidate has designed an adequate relational database with some relevant fields. The candidate has planned some database features appropriately for example two to three of the following: reference to how the tables in the solution are limited, key fields, validation checks and data capture forms. User requirements have been identified with details of most input, output and processing included. The front end user interface, forms, reports (grouping, sorting), queries (simple) have been designed to an acceptable standard.	[3]–[4]
The candidate has designed a database with limited or no use of appropriate fields. User requirements have not been clearly identified, with limited reference to input, output and processing.	[1]–[2]
Not worthy of credit.	[0]

[7]

7

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2 Building the solution [27 marks]

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(a) Multimedia solution

Use the following features of a multimedia authoring package to support the creation of an interactive solution from the design document. The solution should demonstrate an understanding of accessibility issues.

The multimedia solution should include the use of:

- templates (including a form);
- hypertext which supports internal and external navigational links;
- optimised media types, which should include:
 - an original video;
 - an original animation; and
 - appropriate sound;
- scripted elements which aid the interactivity of the solution; and
- accessibility elements.

2 (a) Building the multimedia solution	Marks
The candidate has produced a high quality multimedia solution which is highly suitable for the target audience. The solution makes effective use of: templates, hypertext, optimised media, appropriate sound, original video, original animation. Scripted elements aid the interactivity of the solution. A range of accessibility elements are included.	[11]–[13]
The candidate has produced a good quality multimedia solution which is suitable for the target audience. The solution makes use of: templates, hypertext, optimised media, sound, original video or animation. Scripted elements have been used. An accessibility element is included.	[7]–[10]
The candidate has produced a good quality multimedia solution which is suitable for the target audience. The solution makes use of: templates, hypertext, optimised media, sound, original video or animation.	[4]–[6]
The candidate has produced a basic quality multimedia solution. The solution makes use of: templates, hypertext, optimised media, video or animation and sound.	[1]–[3]
Not worthy of credit.	[0]

[13]

13

(b) Database solution

Use the following features of a database application to support the creation of an interactive solution which meets the user requirements identified in the design stage.

The database solution should include the use of:

- tables with appropriate length checks, validation, use of lookup lists and input masks;
- appropriate relationships between tables;
- forms for data input;
- a menu system for ease of navigation;
- complex and simple queries;
- reports incorporating the use of grouping, sorting, calculations and headers and footers where appropriate; and
- macros for process automation.

2 (b) Building the database solution	Marks
The candidate has produced an excellent database solution which is highly suitable for the target audience. Tables are linked with appropriate relationships, have appropriate validation, lookup lists and input masks. Forms and navigation are user friendly and intuitive. Complex queries using two or more criteria and logical operators have been implemented. Reports incorporate the use of grouping, sorting, calculations and headers/footers.	[11]–[14]
The candidate has produced a very good database solution which is suitable for the target audience. Tables are linked, have appropriate validation, lookup lists and input masks. Forms and navigation are user friendly and intuitive. Queries using two or more criteria and logical operators have been implemented. Reports incorporate the use of grouping, sorting and headers/footers.	[7]–[10]
The candidate has produced a good database solution which is suitable for the target audience. Tables have appropriate validation, lookup lists and input masks. Forms and navigation are logical. Queries using criteria and/or logical operators have been implemented. Reports incorporate the use headers/footers.	[4]–[6]
The candidate has produced a basic database solution. Tables have some validation, lookup lists and/or input masks. Forms, navigation, basic queries and reports have been attempted.	[1]–[3]
Not worthy of credit.	[0]

[14]

14

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3 Testing the database solution [10 marks]

Create an effective test plan derived from database user requirements which:

- is presented in tabular format;
- tests all navigational elements, all interactive elements;
- utilises appropriate test data;
- shows expected output;
- identifies errors;
- reflects the general robustness of the system for use in evaluation; and
- measures the extent to which the user requirements have been met.

Test the solution using the test plan created and document the observed outcomes from each test.

3 Testing the database solution	Marks
The candidate has successfully designed a detailed test plan derived from user requirements. The test plan is well structured in tabular format and incorporates a range of tests. Testing data includes valid, invalid and extreme data. Errors are clearly identified and testing reflects the general robustness of the system.	[8]–[10]
The candidate has successfully designed a test plan derived from user requirements. The test plan is structured in tabular format and incorporates a range of tests. Testing data includes valid, invalid and/or extreme data. Errors are identified and testing reflects the general robustness of the system.	[4]–[7]
The candidate has successfully designed a partial test plan. The test plan has some structured in tabular format. Testing data includes valid and invalid data.	[1]–[3]
Not worthy of credit.	[0]

[10]

10

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4 Evaluating the multimedia and database solution [10 marks]

Evaluate the solution in terms of:

- user requirements;
- performance and robustness;
- refinements required; and
- improvements to the solution.

All documentation should be saved as one PDF.

Testing of the multimedia solution is NOT required.

4 Evaluating the multimedia and database solution	Marks
The candidate has produced a well-structured evaluation of both solutions with clear reflection on the extent to which the user requirements have been met. Performance and robustness issues have been included. Refinements are clearly identified.	[8]–[10]
The candidate has produced a good evaluation of both solutions with reflection on the extent to which the user requirements have been met. Performance and robustness issues have been included. Some refinements are identified.	[4]–[7]
The candidate has produced an evaluation of the database or multimedia solution with limited reflection on the extent to which user requirements have been met. No performance and robustness issues have been included. No refinements are identified.	[1]–[3]
Not worthy of credit.	[0]

[10]

Total marks [60]

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10

60