



General Certificate of Secondary Education

Centre Number

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Candidate Number

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Digital Technology

Unit 2

Digital Authoring Concepts



[GDG21]

GDG21

Assessment

TIME

1 hour 30 minutes.

Assessment Level of Control:

Tick the relevant box (✓)

Controlled Conditions	
Other	

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

You must answer the questions in the spaces provided.

Do not write outside the boxed area on each page or on blank pages.

Complete in black ink only. **Do not write with a gel pen.**

Answer **all ten** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 120.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in Question **4(c)**.



For Question 1 insert the appropriate letter in the space provided.

1 (a) Select the correct HTML statement which will display the word "Heading" as Red text.

- A** <h1 style ="colr:red;"> Heading </h1>
- B** <h1 style ="col:red;"> Heading </h1>
- C** <h1 style ="colour:red;"> Heading </h1>
- D** <h1 style ="color:red;"> Heading </h1>

Answer _____ [1]

(b) Select the statement which correctly lists the type of data to be included in a test plan.

- A** correct data, incorrect date, null, extra data
- B** correct data, incorrect data, null data, extreme data
- C** correct data, incorrect data, white box data, extreme data
- D** correct data, incorrect data, null data, black box data

Answer _____ [1]





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[Turn over



28GDG2103

2 Jack is creating a shopping app for use on a smart phone.

Jack develops a prototype for the app.

(a) Place a tick (✓) beside the statement which correctly identifies the target audience for the application.

Statement	Tick (✓)
Smart phone company	
The shop's customers	
The app developers	

[1]

(b) Use the words below to complete the sentences about prototype development.
(Not all words will be used.)

processing feedback user requirements platform

Incomplete prototypes can be used to help discuss the

_____ with the end user.

Sometimes the prototype can be used to get _____

from the end user.

This is then used to make changes to the prototype until a completed version of

the application is produced.

[2]



Jack also wants to create a database to allow staff to process orders.

(c) Use the words in the list below to complete the table which identifies the tools used for each design task.

entity-relationship diagram wireframe data dictionary
navigation structure diagram

Design Task	Design Tool Used
A file containing details about the validation methods used and the structure of database tables	
Illustrates the pathway between hyperlinks and pages of a multimedia application	
A diagram which shows the layout of the pages/screens of a multimedia application	
Can show one-to-one, one-to-many or many-to-many links between database tables	

[4]

(d) Jack's application will operate using a Graphical User Interface on a touch screen device.

Identify three main features of a GUI.

1. _____

2. _____

3. _____

[3]

[Turn over



(e) State **two** advantages and **two** disadvantages of using a GUI.

Advantages

1. _____

2. _____
_____ [2]

Disadvantages

1. _____

2. _____
_____ [2]

(f) Apart from using a touch screen, identify **one** other method shoppers could use to provide input to their smart phone device when using the app.

_____ [1]





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28GDG2107

3 Developers make use of optimised graphics when producing online packages.

(a) Identify **two** ways in which optimised file types can help a developer creating a web-based application.

1. _____

2. _____
_____ [2]

(b) Circle the correct use for each of the optimised file types listed in the table below.

Optimised File Type	Use		
AVI	Video	Sound	Image
JPEG	Video	Sound	Image
MP3	Video	Sound	Image
PNG	Video	Sound	Image

[4]



(c) Developers often use plugins and PDF files to ensure their digital application operates on a range of platforms.

(i) Explain what is meant by a PDF file.

[2]

(ii) What is a plugin?

[2]



4 (a) Social media applications provide users with notifications, location check-ins and live-streaming facilities.

(i) Identify **one** disadvantage of providing location check-ins on a social media application.

_____ [1]

(ii) Identify **one** disadvantage of setting user notifications on a social media application.

_____ [1]

(iii) What does the term live-streaming mean?

_____ [2]

(iv) Social media applications allow users to upload and view a range of multimedia resources. How can this facility impact on the cost of a mobile telephone contract?

_____ [2]

(b) Describe **two** ways online gaming can impact upon the hardware requirements of the users device.

1. _____

2. _____

_____ [4]



(c) An e-commerce application makes use of interactive multimedia features. Name and describe **three** advantages and **three** disadvantages of the interactive features available to users of e-commerce applications.

Advantages

Disadvantages

[6]

[Turn over



5 Multimedia authoring applications allow developers to use hypertext and scripting to make applications interactive.

(a) (i) Explain the term multimedia authoring.

[2]

(ii) Explain how hypertext is used in multimedia authoring.

[2]

(b) Script can be added to web pages using selection and sequencing statements.

Examine each of the examples of code below and state whether each includes an example of selection or sequencing.

(i) `<script>
var ans, x, y;
x=20;
y=10;
ans= x - y;
Output (ans);
</script>`

[1]

(ii) `<script>
var membertype = "";
if (age < 18) {
 membertype = "Junior";
} else {
 membertype = "Senior";
}
</script>`

[1]



(iii) The examples used in parts (i) and (ii) show the use of the <script> </script> tag to include the scripted elements in the body of the HTML.

Identify **one** other way scripted elements can be included in a HTML application.

_____ [1]

(c) Repetition can be implemented using the while statement and the do ... while statement. The structure of each statement is shown below.

```
while (condition){  
    Statement(s) to be executed;  
}
```

Example A

```
do{  
    Statement(s) to be executed;  
} while (condition);
```

Example B

In the table below state whether each statement is **True** or **False**.

Statement	True or False
In Example A the 'statements to be executed' will be carried out at least once	
In Example B the 'statements to be executed' may never be carried out	
In Example B the 'statements to be executed' will be carried out more than once	

[3]

(d) Multimedia applications are often said to be event-driven.

Explain the term event-driven.

_____ [2]

[Turn over



6 Joan is creating a website for a local charity. The website will include a range of multimedia resources.

(a) Joan creates an image source table, part of which can be seen below.

File Name	Image description	Image size (height * width)	File size
Logo.bmp	Charity logo	50*50 pixels	40 Kb

(i) Identify **one** problem with the image type Joan has used for her logo.

_____ [1]

(ii) Give **one** reason why including the following in the image source table can help Joan with the planning of her website.

Image size

_____ [1]

File size

_____ [1]

(b) Joan creates a movie timeline for her video before creating it.

List **four** pieces of information Joan would include in her movie timeline.

1. _____

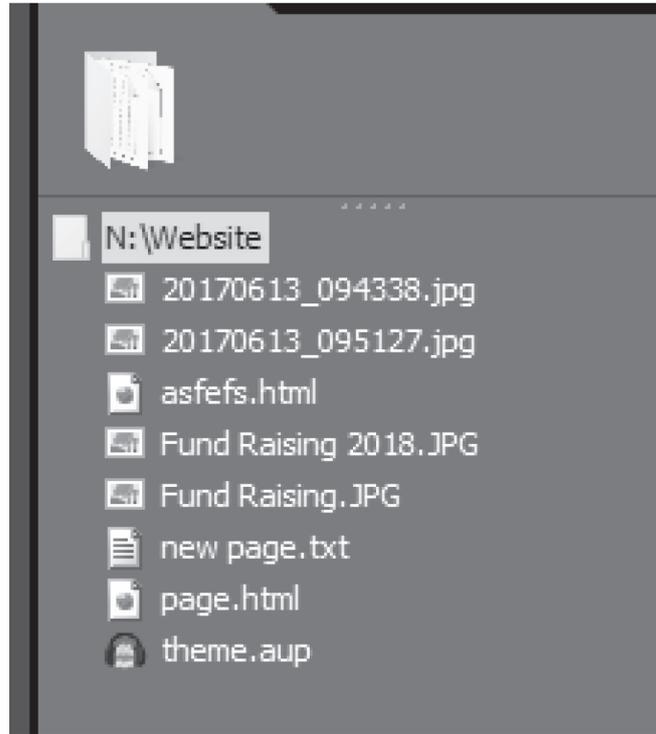
2. _____

3. _____

4. _____ [4]



(c) The image below shows some of the web pages Joan has created and some of the files used in creating her website.



Describe **two** ways in which Joan could improve the organisation of this content.

1. _____

2. _____

_____ [4]

[Turn over



7 Developers use HTML to create websites.

(a) What do the letters HTML stand for?

_____ [1]

(b) Complete the table below by circling TRUE or FALSE for each statement.

Tag	Statement 1	Statement 2	Statement 3
<title> </title>	Provides a title for a web page when it is added to browser favourites TRUE / FALSE	Displays a title for a web page at the top of the browser window TRUE / FALSE	Displays a graphic banner at the top of the web page when it is loaded TRUE / FALSE
<p> </p>	Displays a paragraph of text in a different font from the remainder of the text on a web page TRUE / FALSE	Adds space to a web page around the start and end of a paragraph of text TRUE / FALSE	Highlights text on a web page which is used to locate the page using a search engine TRUE / FALSE
<body> </body>	Is the first tag which appears on the HTML document TRUE / FALSE	Is the last tag which appears on the HTML document TRUE / FALSE	Contains all of the visible content of the web page TRUE / FALSE

[9]



(c) (i) Complete the end tag used to create the hyperlink to a web page.

<ahref="http://www.myweb.com">

 <_____>

[1]

(ii) What are the dimensions of the image when it is displayed on the web page?

_____ [1]

(iii) What HTML tag is used to display the image in the browser window?

_____ [1]

(iv) What part of the above HTML code is used to display a text based message to the user when they roll over the image with a cursor?

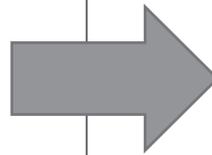
_____ [1]

[Turn over



(d) Complete the HTML code needed to create the display shown.

```
<!DOCTYPE html>
<_____> [1]
<body>
<p>List of Names :</p>
<_____> [1]
  <li>Simon</li>
  <li>Sarah</li>
  <li>Alex</li>
<_____> [1]
</body>
</html>
```



List of Names

1. Simon
2. Sarah
3. Alex

[3]





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28GDG2119

- 8 Elaine uses a relational database to keep track of her driving school lessons and students.

Part of the database is shown below.

StudentTbl

StudentID	Title	Firstname	Surname	HouseNumber	Street	Town	County	PostCode	TelephoneNum
1	Mr	Max	Caves	2	Main Street	Belfast	Co Down	BT4 8UJ	07789653258
2	Miss	Emma	Jones	5	High Street	Bangor	Co Down	BT19 8GF	07796532569
3	Mr	Jasun	Orr-Burn	23	Market Street	Lisburn	Co Down	BT25 9AY	07632548952
4	Mrs	Carly	Simon	12A	Kearns Road	Belfast	Co Down	BT4 8UJ	07736589851

LessonTbl

LessonID	StudentID	DateOfLesson	StartTime	Duration
1	1	1/1/19	13:00	2
2	1	7/1/19	13:00	1
3	2	2/1/19	15:00	1
4	3	3/1/19	14:00	1
5	1	14/1/19	13:00	2

- (a) Name the type of relationship Elaine must create between the two tables in her database.

_____ [1]

- (b) Give **one** reason why StudentID appears in both tables.

_____ [1]

- (c) Suggest a suitable data type for HouseNumber.

_____ [1]



(d) Elaine wants to ensure that lessons booked can only be 1–3 hours long.

Place a tick (✓) beside the validation rule which will allow her to do this.

Validation Rule	Tick (✓)
>1 OR <3	
>=1 OR <=3	
>1 AND <3	
>= 1 AND <=3	

[1]

(e) Elaine wants to produce a list of students who have booked 2 hour long lessons on 1 January 2019. Complete the criteria section for this query below.

Field:	Firstname	Surname	DateOfLesson	Duration
Table:	StudentTbl	StudentTbl	LessonTbl	LessonTbl
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			[1]	[1]
or:				

(f) Each lesson costs £15.00 per hour. Complete the query below to show how Elaine could calculate the total cost of a lesson for each student.

Field:	StudentID	Firstname	Surname	HouseNumber	Street	PostCode	DateOfLesson	StartTime	Duration	
Table:	StudentTbl	StudentTbl	StudentTbl	StudentTbl	StudentTbl	StudentTbl	LessonTbl	LessonTbl	LessonTbl	
Sort:										
Show:	<input checked="" type="checkbox"/>									
Criteria:										
or:										

Total Cost: [_____] * _____

[1] [1]

[Turn over



- (g) Complete the SQL statement below which allows Elaine to produce a list of names and telephone numbers for all of her students from Belfast.

_____ Firstname, Surname, TelephoneNum
_____ StudentTbl
_____ Town="Belfast"

[3]

- (h) Elaine uses a mail merge facility to send details regarding special offers to students.

reports data types field headings
key field personalised queries

Use the words listed above to complete the sentences describing the mail merge process. (Not all words will be used.)

Mail merge can be used to send _____ [1] letters to large numbers of people. Using a mail merge allows the user to add _____ [1] from a database table into a word processed document. During the mail merge process data from the database table is inserted into the completed letter. _____ [1] can also be used to select data as part of the mail merge process.



(i) Some databases may include macros. Explain the term macro.

[2]

(j) Relational databases are used to help improve data integrity. Explain the term data integrity.

[2]

(k) Complete the table below by stating whether each statement about data redundancy is TRUE or FALSE.

Statement	TRUE or FALSE
Data Redundancy is the unnecessary duplication of data in a database	[1]
Data Redundancy increases the file size of a database	[1]

[Turn over



9 (a) What do developers mean by taking an iterative approach to testing?

[2]

(b) Explain the following approaches to testing.

(i) System Testing

[2]

(ii) Beta Testing

[2]

(iii) Alpha Testing

[2]

(c) Apart from navigational elements, list **two** features of a multimedia application that a developer should fully test.

1. _____

2. _____

[2]



10 John is leading a project team involved in creating a new software package. He knows that evaluation is an important part of developing any system.

(a) What is the purpose of evaluation?

[2]

(b) Explain why John should evaluate the software application continuously.

[2]

(c) (i) State **one** way in which John can ensure that the solution meets the original design specification.

[1]

(ii) Describe how John can ensure that the solution operates on a number of platforms.

[2]

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