



General Certificate of Secondary Education
2023

Centre Number

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Candidate Number

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Digital Technology

Unit 2

Digital Authoring Concepts



[GDG21]

GDG21

THURSDAY 25 MAY, AFTERNOON

TIME

1 hour 30 minutes.

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 nine** 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 **6(c)**.



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

1 (a) A mail merge automatically inserts data into a word processed document using fields inserted from a

- A** table in a word processed application
- B** presentation application
- C** database application
- D** multimedia application

Answer _____ [1]

(b) A report footer can be described as text which appears

- A** as a label beside a field in a report
- B** at the end of a report to indicate there is no further data to view
- C** under the heading on a report
- D** at the bottom of each page on a report

Answer _____ [1]

(c) Select the statement which represents selection in scripting.

- A** FOR i = 1 to 100
- B** IF...THEN....ELSE
- C** WHILE....DO
- D** REPEAT....UNTIL

Answer _____ [1]





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[Turn over



28GDG2103

2 Tracy is developing a new website for a local estate agent.

She decides to develop a prototype first.

(a) Explain the term prototype.

[2]

(b) Give **two** advantages of involving an end user when developing a prototype for a new website.

1. _____

2. _____

[2]

(c) Circle the correct terms to complete the following sentences about developing a website.

A **storyboard / navigation structure diagram** shows how the pages in the website are linked together.

The **navigation structure diagram / storyboard** shows the content and layout of each page in the website.

A **user requirements document / timeline** shows the content of a short movie created for the website.

The **user requirements document / storyboard** acts as a contract between the website developer and their customer.

[4]



(d) The website needs to be interactive.

Apart from using navigation buttons, list **two** ways in which the website can be made interactive.

1. _____

2. _____

_____ [2]

The owners of the estate agent also need a relational database to keep track of bookings.

A relational database can help to improve data integrity and reduce data redundancy.

(e) Explain the terms:

(i) Data integrity

_____ [2]

(ii) Data redundancy

_____ [2]

[Turn over



The database will contain three tables.

- Viewer Table
- Property Table
- Booking Table

Tracy uses an ERD to show how the tables will be linked in the relational database.

(f) What do the letters ERD stand for?

_____ [1]

(g) List **two** types of relationship that can exist between tables.

1. _____

2. _____ [2]





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28GDG2107

3 GT Games are creating a new computer game.

They want the game to have a GUI (Graphical User Interface).

(a) In the table below, place a tick (✓) beside **three** statements that are TRUE about GUIs.

Statement	Tick (✓)
GUIs require a lot of processing power to run successfully	
Users can create their own short cuts	
They are the most suitable interface for expert users	
Memory requirements are low when running GUIs	
Dialogue boxes and wizards help users complete complex tasks	

[3]

(b) (i) Describe **one** advantage to the user of including high levels of interactivity in computer games.

[2]

(ii) Describe **one** disadvantage of including high levels of interactivity in computer games.

[2]



Some games use natural language interfaces.

(c) (i) Name **one** input device needed to support voice input in natural language interfaces.

_____ [1]

(ii) Use the words listed below to complete the sentences about inputting voice commands. (Not all words will be used.)

Feedback **Dictionary** **Analogue**
Digital **Key** **Recorded**

When the instructions are input into the digital device they are in _____ [1] format. Before the processor can

understand the instructions they must be converted into _____ [1] format. _____ [1]

words are identified in the instructions and compared to a set of commands stored in a _____ [1]. Once the correct commands have been identified the correct instruction can be carried out.

(iii) Complete the table below by stating whether each statement about a natural language interface is TRUE or FALSE.

Statement	TRUE / FALSE
Natural language instructions can be typed	
Speech input systems require no training to recognise users' voices	
Users do not need a lot of technical knowledge	
Background noise can be a problem if instructions are being spoken	

[4]

[Turn over



(d) Some devices use touchscreen interfaces.

Describe **three** disadvantages of using a touchscreen on a digital device.

1. _____

2. _____

3. _____

[6]





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28GDG2111

- 4 A primary school teacher is creating an app to help children aged 5–6 years to learn spellings.

The app must be accessible to the target audience.

- (a) Identify the target audience for the app.

_____ [1]

- (b) List **three** ways the app can be made accessible for 5–6 year old children.

1. _____

2. _____

3. _____

_____ [3]

- (c) Identify **two** ways the teacher can help make sure the app is cross-platform compatible (can run on different types of devices).

1. _____

2. _____

_____ [2]



(d) Below is a list of common file formats.

PDF AVI JPEG BMP

(i) Complete the table below by stating what the letters PDF and JPEG stand for.

File format	Answer
PDF	
JPEG	

[2]

(ii) List **one** feature of the following file formats:

AVI _____
_____ [1]

BMP _____
_____ [1]

[Turn over



5 Many stores now operate online.

(a) List **two** interactive features provided on websites for online shoppers.

1. _____
2. _____ [2]

Social media applications provide a range of interactive features such as live streaming.

(b) (i) Identify **two** disadvantages of live streaming on social media.

1. _____
2. _____ [2]

(ii) Identify **one** advantage of using live streaming on social media.

_____ [1]

(iii) Identify **two** additional interactive features provided for users on social media applications.

1. _____
2. _____ [2]





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28GDG2115

6 Website applications are created using HTML.

(a) What do the letters HTML stand for?

[1]

(b) Insert the correct letter beside the HTML tags in the table below to match each tag with the correct description.

The first one has been done for you.

Description	
A	Displays text in an italic format
B	Can be used to contain <code><script></code> and other additional data about the page
C	Creates text for the page which is then displayed in the page tab in the browser
D	Used to make text stand out on a page by appearing darker
E	Used to contain all of the HTML elements that appear in a browser window
F	Indents text on the screen / HTML page
G	Creates a hyperlink
H	Used to create output such as 1. Name 1 2. Name 2
I	Used to create an unordered list

HTML Tag	Letter
<code><i></code>	A
<code><p></code>	
<code><a></code>	
<code><head></code>	
<code></code>	
<code><title></code>	
<code></code>	
<code><body></code>	
<code></code>	

[8]



(c) Web pages can also be created using authoring applications. Describe **three** advantages of using an authoring application to create a website.

[6]

[Turn over



- 7 KD Events are organising a charity run. Anyone running in the event can also buy t-shirts and caps.

A relational database is used to record the orders.

- (a) Complete the table below by stating whether each statement about a relational database application is TRUE or FALSE.

Statement	TRUE / FALSE
Forms can be used to create menus to help the user access different parts of the database	
Queries can be used to calculate additional data items	
The results of a query can only be displayed on a report	
Reports can be used to combine data from more than one database table	
Data can easily be added to a database using a report	
Data can easily be added to a database table using a form	
Macros are used to create lookup lists in database tables	

[7]



Part of the relational database is shown below.

RunnerTBL

RunnerID	Surname	FirstName	Address	PostCode
1001	Hall	Grahame	12, Green Road, Bangor	BT20 7UJ
1002	Brown	Tiffany	43, Abbey View, Newry	BT35 9SD
1003	Brien	Peter	9, Blake's Road, Dromore	BT25 1AA
1004	Duncan	Alison	63, Navar Street, Dromore	BT26 8AH
1005	Matthews	Steven	17, First Avenue, Armagh	BT37 9IJ

ProductTBL

ProductID	Description	SellingPrice	NumInStock
TPinkS	T-shirt Pink Small	£10.99	143
TGreenS	T-shirt Green Small	£10.99	98
TBlueS	T-shirt Blue Small	£10.99	112
CPinkS	Cap Pink Small	£5.99	94
CGreenS	Cap Green Small	£5.99	87
CBlueS	Cap Blue Small	£5.99	121
TPinkM	T-shirt Pink Medium	£12.99	143
TGreenM	T-shirt Green Medium	£12.99	98
TBlueM	T-shirt Blue Medium	£12.99	112
CPinkM	Cap Pink Medium	£6.99	94
CGreenM	Cap Green Medium	£6.99	87
CBlueM	Cap Blue Medium	£6.99	121

OrderTBL

OrderID	RunnerID	ProductID	Quantity
P001	1001	CGreenS	1
P002	1001	TPinkM	2
P003	1003	CGreenS	1
P004	1004	TPinkM	3
P005	1002	CGreenS	2
P006	1002	TBlueM	1
P007	1005	CBlueS	3

[Turn over



(b) Relational databases use key fields and foreign key fields.

(i) What is the purpose of a key field in a database?

_____ [1]

(ii) Identify **one** foreign key field used in the OrderTBL.

_____ [1]

KD Events use a query to retrieve this list of orders (shown in **Fig. 1**).

OrderID	RunnerID	Surname	ProductID	Description	SellingPrice	Quantity
P001	1001	Hall	CGreenS	Cap Green Small	£5.99	1
P002	1001	Hall	TPinkM	T-shirt Pink Medium	£12.99	2
P003	1003	Brien	CGreenS	Cap Green Small	£5.99	1
P004	1004	Duncan	TPinkM	T-shirt Pink Medium	£12.99	3
P005	1002	Brown	CGreenS	Cap Green Small	£5.99	2
P006	1002	Brown	TBlueM	T-shirt Blue Medium	£12.99	1
P007	1005	Matthews	CBlueS	Cap Blue Small	£5.99	3

Fig. 1



(c) Complete the query design below which would help KD Events to produce the results shown in **Fig. 1**.

Field Name	OrderID	RunnerID					
Table Name	OrderTBL						

[2]

(d) KD Events would like a list containing only the names and addresses of all customers who have ordered items worth more than £10.00.

Field Name	Surname				SellingPrice
Table Name	RunnerTBL				
Criteria					
Show	TRUE				

(Show is set to TRUE as this field needs to be displayed in the results of the query)

[4]

(e) KD Events would like to create a query to search for customers from Dromore.

Explain how they would need to change the address field in RunnerTBL to make this query possible.

[2]

[Turn over



Some queries are produced using SQL.

- (f) Place a tick (✓) beside the statement which correctly describes what the letters SQL stand for.

SQL stands for	Tick (✓)
Statement Query Language	
Structured Query Listing	
Structured Query Language	
Statement Query Listing	

[1]

- (g) Write a SQL statement which would produce a list containing ProductID and Description from ProductTBL where the NumInStock is 100 or less.

ProductTBL

ProductID	Description	SellingPrice	NumInStock
TPinkS	T-shirt Pink Small	£10.99	143
TGreenS	T-shirt Green Small	£10.99	98
TBlueS	T-shirt Blue Small	£10.99	112
CPinkS	Cap Pink Small	£5.99	94
CGreenS	Cap Green Small	£5.99	87
CBlueS	Cap Blue Small	£5.99	121
TPinkM	T-shirt Pink Medium	£12.99	143
TGreenM	T-shirt Green Medium	£12.99	98

SELECT _____ [1]

FROM _____ [1]

WHERE _____ [2]



KD Events have created the following report from their database.

Orders Summary

Runner ID	Order ID	FirstName	Surname	ProductID	Description	SellingPrice	Quantity	ItemTotal
1001								
	P002	Grahame	Hall	TPinkM	T-shirt Pink Med	£12.99	2	£25.98
	P001	Grahame	Hall	CGreenS	Cap Green Small	£5.99	1	£5.99
1002								
	P006	Tiffany	Brown	TBlueM	T-shirt Blue Med	£12.99	1	£12.99
	P005	Tiffany	Brown	CGreenS	Cap Green Small	£5.99	2	£11.98
1003								
	P003	Peter	Brien	CGreenS	Cap Green Small	£5.99	1	£5.99
1004								
	P004	Alison	Duncan	TPinkM	T-shirt Pink Med	£12.99	3	£38.97
1005								
	P007	Steven	Matthews	CBlueS	Cap Blue Small	£5.99	3	£17.97

(h) Complete the table below by stating whether each statement about the above report is TRUE or FALSE.

Statement	TRUE / FALSE
The information in the report is grouped by RunnerID and then ordered by Quantity purchased	
The Information in the report contains data from all of the tables in the database	
The Quantity and SellingPrice fields are used to calculate the data in the ItemTotal column	
The field headings in the report have been inserted using field headings from the data tables	
The field headings must be added to a report header if they are to be repeated on each page	

[5]

[Turn over



8 Jack has created a multimedia package for a local pet food shop.

Some of the user requirements for the package include: -

- A home page with images of staff
- A page showing the products which the shop sells
- A form to book pets into the grooming parlour
- A form page to place orders for products
- Hyperlinks to all of the vet's surgeries in the area
- Navigation buttons to let the user move between each of the four pages in the website

Jack creates a test plan for the package.

(a) Use the words below to decide what type of test Jack is carrying out in each description.

Some terms may be used more than once.

White box	Black box	System	Alpha	Beta
Description	Test type			
A version of the application is given to some customers to test				
All staff images load correctly on the home page				
Test scripted elements used for validation on a booking form				
Total orders are displayed in currency format				
A version of the application is given to some employees to test				
Hyperlinks should take users to the correct vet's websites				

[6]



(b) Some developers use A/B testing.

(i) Describe how Jack could use A/B testing.

[2]

(ii) Give Jack **one** advantage and **one** disadvantage of using A/B testing.

Advantage _____

Disadvantage _____

[2]

(c) Describe how Jack could test that navigation buttons on the website take users to the correct page.

[2]

[Turn over



9 Evaluation is an important part of application development.

(a) Describe how each of the following documents can be used by the developer when they are evaluating the application.

(i) User requirements

[2]

(ii) Design documents

[2]

(b) Complete the table below by stating whether each statement about evaluation is TRUE or FALSE.

Statement	TRUE / FALSE
Evaluation is only carried out at the end of the development process	
Evaluation can help ensure all user requirements are met	
Evaluation can be used to help get feedback from the end user	

[3]





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For Examiner's use only	
Question Number	Marks
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Total Marks	
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Examiner Number

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