



General Certificate of Secondary Education  
2025

Centre Number

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Candidate Number

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# Digital Technology

Unit 2

Digital Authoring Concepts

<b>MV18</b>
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[GDG21]

**TUESDAY 3 JUNE, AFTERNOON**

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## **Time**

1 hour 30 minutes, plus your additional time allowance.

## **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 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 at the end of each question indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in Question 5.

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

**1 (a)** Some files can be stored as PDFs. What do the letters PDF stand for? [1 mark]

- A** Portable Data Format
- B** Portable Data File
- C** Portable Document File
- D** Portable Document Format

Answer \_\_\_\_\_

**(b)** Plugins can sometimes be used with digital applications. What is a plugin? [1 mark]

- A** A file type that helps a user log in to their digital device
- B** A piece of software that provides additional features for an application
- C** A security task the user needs to complete before they install an application
- D** A tool used to help create websites on a tablet computer

Answer \_\_\_\_\_

**(c)** Web developers use HTML to create web pages. What do the letters HTML stand for? [1 mark]

- A** HyperText Markup Link
- B** HyperText Multi Links
- C** HyperText Markup Language
- D** HyperText Multi Language

Answer \_\_\_\_\_

**(d)** Select the statement which correctly describes a cross-platform application. [1 mark]

- A** An application that can run on only one type of digital device
- B** An application which runs on one operating system or digital device
- C** An application that can run on many digital devices and operating systems
- D** An application that is only available to run on a web browser

Answer \_\_\_\_\_

**(e)** Select the database feature used to present output to a user in an easy to understand format. [1 mark]

- A** Form
- B** Header
- C** Macro
- D** Report

Answer \_\_\_\_\_

**(f)** Select the feature used to link database and word processing applications to help create personalised output for customers or other clients. [1 mark]

- A** Macro
- B** Mail merge
- C** Report
- D** Form

Answer \_\_\_\_\_

**(g)** Select the database feature used to allow users to input data into a database table. [1 mark]

**A** Report

**B** Form

**C** Macro

**D** Field

Answer \_\_\_\_\_

**(h)** Select the file format used for storing sound recordings. [1 mark]

**A** avi

**B** mp3

**C** png

**D** rtf

Answer \_\_\_\_\_

2 (a) Storyboards are often used when developing digital systems.

In the table below, place a tick (✓) beside **four** statements that are **True** about storyboards. [4 marks]

Statement	Tick (✓)
Storyboards contain details about background colours and images	
Storyboards use arrows to show how pages in an application are linked together	
Storyboards include details of headings used to store data	
A storyboard is a diagram detailing content such as text location and location of headings	
A storyboard can be used to show the user where images will be located	
Storyboards provide details of input devices used to interact with the applications	
Storyboards show where navigation buttons are located on a screen	

(b) When developing new systems, the target audience must be identified.

What does the term target audience mean? [2 marks]

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(c) Developers use a range of design elements when designing multimedia applications.

Draw a line to match the design elements provided in the list below with the correct purpose. (Each purpose can be used once only) [4 marks]

**Design Elements**

**Purpose**

Timeline

Shows the various pathways a user can move through in an application

Prototype

Provides the user with a partially completed solution

Navigational structure diagram

A table containing a list of file names, file types and where the files were originally created

Image sources

A series of images used to show the order of scenes in a movie or animation

(d) When developing database applications, developers will often use a data dictionary. Identify **three** items a developer would include in a data dictionary. [3 marks]

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**3** Human-computer interfaces help users communicate with digital devices.

Interfaces can take a number of different forms.

**(a)** One interface type is a GUI. What do the letters GUI stand for? [1 mark]

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**(b)** Describe each of the following parts of a WIMP interface. [8 marks]

Window \_\_\_\_\_

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Icon \_\_\_\_\_

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Menu \_\_\_\_\_

---

---

Pointer \_\_\_\_\_

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Some digital systems use natural language interfaces to allow users to type or speak instructions in everyday language.

**(c) (i)** Identify **two** advantages of natural language interfaces. [2 marks]

1. \_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

**(ii)** Identify **two** disadvantages of natural language interfaces. [2 marks]

1. \_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

(d) Other types of user interfaces include motion tracking interfaces and touch screens.

Draw a line to match each of the activities listed below with the interface that could best help a user complete the task described. (Each interface can be used once only) [4 marks]

### Activities

Playing a virtual tennis match with a friend using a computer game

Selecting an app and sending a message to a friend on a mobile phone

Using spoken instructions to make a telephone call on a mobile phone when driving a car

Launching a word processing program on a desktop computer

### Interface

GUI

motion tracking

natural language interface

touch screen

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**(Questions continue overleaf)**

- 4 (a) Pampered Pets offers a pet minding service. They use a relational database to keep track of the animals booked in each day.

List **three** types of relationship used to link tables in a database. [3 marks]

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

- (b) An ERD is used to show the links between tables in databases that contain more than one table.

What do the letters ERD stand for? [1 mark]

\_\_\_\_\_

- (c) Pampered Pets takes bookings for one or more days at a time.

Part of each of the three tables in the database are shown opposite and on page 14.

# OwnerTBL

OwnerID	FirstName	SecondName	HouseNum	Street	Town	PostCode
OW0001	Jack	Smith	56	Main Street	Belfast	BT4 6YH
OW0002	Ann	Black	54	Bridge End	Bangor	BT19 8YH
OW0003	Brian	Brown	8	South Street	Lisburn	BT27 4RF
OW0004	Joan	Jones	23	Prince Avenue	Belfast	BT3 9JJ
OW0005	Simon	White	15	West Road	Belfast	BT2 8SB
OW0006	Alex	Smythe	12	Riverdale Place	Bangor	BT20 9OP

## PetTBL

<b>PetID</b>	<b>PetName</b>	<b>PetType</b>	<b>OwnerID</b>
PT0001	Fluffy	Cat	OW0001
PT0002	Barney	Large Dog	OW0002
PT0003	Rusty	Small Dog	OW0002
PT0004	Moz	Medium Dog	OW0003
PT0005	Tabby	Cat	OW0001
PT0006	Buster	Small Dog	OW0006
PT0007	Rex	Large Dog	OW0004
PT0008	Prince	Cat	OW0004
PT0009	Basil	Cat	OW0005

## BookingTBL

<b>BookingID</b>	<b>PetID</b>	<b>StartDate</b>	<b>NumDays</b>
BK0001	PT0001	13/01/2025	3
BK0002	PT0001	20/01/2025	2
BK0003	PT0005	27/01/2025	1
BK0004	PT0001	14/02/2025	3
BK0005	PT0003	15/02/2025	1
BK0006	PT0001	22/02/2025	2
BK0007	PT0002	14/03/2025	1
BK0008	PT0006	15/03/2025	2
BK0009	PT0009	21/03/2025	2

Tables in a relational database can contain primary and foreign keys.

In the table below, state whether each field from the database is an example of a primary key or a foreign key.  
[3 marks]

<b>Field Name</b>	<b>Field Location</b>	<b>Primary Key / Foreign Key</b>
BookingID	BookingTBL	
PetID	BookingTBL	
OwnerID	OwnerTBL	

(d) The owner of Pampered Pets uses queries to get useful information from their database.

(i) Which **two** tables in the Pampered Pets database were used to create a query that produces the output shown below. [2 marks]

FirstName ▼	SecondName ▼	PetName ▼	PetType ▼
Jack	Smith	Fluffy	Cat
Jack	Smith	Tabby	Cat
Ann	Black	Barney	Large Dog
Ann	Black	Rusty	Small Dog
Brian	Brown	Moz	Medium Dog
Joan	Jones	Rex	Large Dog
Joan	Jones	Prince	Cat
Simon	White	Basil	Cat
Alex	Smythe	Buster	Small Dog

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- (ii) Complete the query design shown below to help Pampered Pets display details about customers who are cat owners from Belfast. [2 marks]

Field	FirstName	SecondName	PetName	PetType	Town
Criteria					

(iii) Complete the query design shown below to help Pampered Pets display details about customers from Bangor or Lisburn who own cats. [4 marks]

Field	FirstName	SecondName	PetName	PetType	Town
Criteria					
or					

(iv) Pampered Pets wants to use a query to calculate the total cost of each pet's stay. The fee is £20.00 per day.

Complete the statement below to help them calculate this cost. [3 marks]

Field	FirstName	SecondName	PetName	StartDate	NumDays	TotalCost:
Criteria						

TotalCost: \_\_\_\_\_ [1 mark]  
 \_\_\_\_\_ [1 mark]  
 \_\_\_\_\_ [1 mark]

(e) Some databases use SQL to create queries.

What do the letters SQL stand for? [1 mark]

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(f) (i) Complete the following SQL statement to help the owners search for the full names and postcodes of all customers from Belfast. [1 mark for each]

**Select** \_\_\_\_\_

**From** \_\_\_\_\_

**Where** \_\_\_\_\_

(ii) Complete the following SQL statement to help the owners search for the PetID of all pets booked with them after 20 March 2025.

**Select** PetID

**From** \_\_\_\_\_

[1 mark]

**Where** StartDate \_\_\_\_\_

[1 mark]

[1 mark]



**6** Applications such as e-commerce (online shopping), social media and gaming contain interactive multimedia features.

**(a) (i)** Explain what is meant by the term multimedia.  
[2 marks]

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**(ii)** Explain what is meant by the term interactive.  
[2 marks]

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**(Questions continue overleaf)**

(b) Complete the table below by including **one** advantage and **one** disadvantage of the features used in each of the applications shown. [4 marks for each application]

<b>E-commerce</b>		
<b>Feature</b>	<b>Advantage</b>	<b>Disadvantage</b>
Online payment		
Image display tools e.g. 360° image rotation / video		

Social media		
Feature	Advantage	Disadvantage
Check-in facilities/ Location sharing		
Creating pages and advertisements to promote a product or event		

(c) Many gaming applications now allow users to play interactive games online.

Describe **two** disadvantages of online interactive gaming.  
[4 marks]

1. \_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

7 (a) Websites contain hypertext. Complete the table below by stating whether each statement about hypertext is **True** or **False**. [5 marks]

Statement	True / False
It is text that appears on screen when a user rolls over an image on a web page	
It is a link you can click on to open a document on a web page	
It is code you can use to create a web page	
It is text used to create links to other content on a web page	
It is information that can be used to provide users with feedback when filling out a form on a web page	

(b) (i) State **one** reason why developers are encouraged to use folders to manage the content they will add to a web page. [1 mark]

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(ii) State **one** additional piece of advice you would give to a web developer to help them correctly identify images, videos and other content they are adding to a web page. [1 mark]

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(c) Identify **two** features which can be added to websites to help make them more accessible for users with additional needs. [2 marks]

1. \_\_\_\_\_

---

2. \_\_\_\_\_

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(d) Use the words listed below to complete the sentences about how code is implemented in script used on web pages. [4 marks]  
(Each of the words provided will be used once only).










**repetition**  
**selection**  
**sequencing**  
**condition**

Programs can be designed in a way that some lines of code only need to run if a certain \_\_\_\_\_ is met, this is an example of \_\_\_\_\_ .

When lines of code are executed repeatedly, this is an example of \_\_\_\_\_ .

When lines of code run one after another from beginning to end, this is known as \_\_\_\_\_ .

- 8 (a) Sam has created the following web pages and folders as part of a website for a local business.

-  assets
-  images
-  Templates
-  bookings
-  contactus
-  facilities
-  index
-  playonline
-  rooms

The image customer.jpg is stored in the folder called images.

Insert the appropriate letter in the space provided to show which line of HTML code would be used to insert the image onto a web page. [1 mark]

- A** ``
- B** ``
- C** ``
- D** ``

Answer \_\_\_\_\_

**(b)** Sam is creating a website for a music tutor. The heading at the top of the website should be the largest sized text on the page.

Which heading style should Sam use, `<h1>` or `<h6>`?  
[1 mark]

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(c) The following list is added to a web page.

- Coffee
- Tea
- Milk

Insert the appropriate letter in the space provided to show which of the following sections of HTML code would be used to create this list. [1 mark]

<pre>&lt;ol&gt;   &lt;li&gt;Coffee&lt;/li&gt;   &lt;li&gt;Tea&lt;/li&gt;   &lt;li&gt;Milk&lt;/li&gt; &lt;/ol&gt;</pre>	<pre>&lt;ul&gt;   &lt;li&gt;Coffee&lt;/li&gt;   &lt;li&gt;Tea&lt;/li&gt;   &lt;li&gt;Milk&lt;/li&gt; &lt;/ul&gt;</pre>
<b>A</b>	<b>B</b>

Answer \_\_\_\_\_

(d) The table shown below is added to a web page.

**Music Lesson Schedule (1 May 2025)**

<b>Student</b>	<b>Instrument</b>	<b>Lesson Time</b>
Sam	Clarinet	09:00
Alex	Piano	10:00
Jean	Flute	11:00

Insert the appropriate letter in the space provided to show which of the sections of HTML code opposite would be used to create this table. [1 mark]

Answer \_\_\_\_\_

<h2>Music Lesson Schedule (1 May 2025)</h2>

<table bg color = "white" border = "1">

<tr>

<th>Student</th>

<th>Instrument</th>

<th>Lesson Time</th>

</tr>

<tr>

<td>Sam</td>

<td>Alex</td>

<td>Jean</td>

</tr>

<tr>

<td>Clarinete</td>

<td>Piano</td>

<td>Flute</td>

</tr>

<tr>

<td>9:00</td>

<td>10:00</td>

<td>11:00</td>

</tr>

</table>

A

<h2>Music Lesson Schedule (1 May 2025)</h2>

<table bg color = "white" border = "1">

<tr>

<th>Student</th>

<th>Instrument</th>

<th>Lesson Time</th>

</tr>

<tr>

<td>Sam</td>

<td>Clarinete</td>

<td>9:00</td>

</tr>

<tr>

<td>Alex</td>

<td>Piano</td>

<td>10:00</td>

</tr>

<tr>

<td>Jean</td>

<td>Flute</td>

<td>11:00</td>

</tr>

</table>

B

- (e) Explain why the file, which is shown below, is not suitable for displaying an image on a webpage.  
[2 marks]

location\_image.bmp

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- (f) The text shown below appears on a web page as a hyperlink to [www.mywebsite.com](http://www.mywebsite.com).

MyWebsite

Insert the appropriate letter in the space provided to show which line of HTML code would be used to correctly add the hyperlink to the web page. [1 mark]

- A** `<a href="www.mywebsite.com"> Mywebsite</a>`
- B** `<href="www.mywebsite.com"> Mywebsite</href>`
- C** `<a href="www.mywebsite.com"> MyWebsite</a>`
- D** `<href="www.mywebsite.com"> MyWebsite</href>`

Answer \_\_\_\_\_

**(g)** Some multimedia packages operate using event programming.  
Explain what is meant by the term event programming.  
[2 marks]

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**(h)** Some web developers use CSS to control how content is displayed on web pages.  
What do the letters CSS stand for? [1 mark]

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- 9 (a)** Most application developers take an iterative approach to testing.  
What does the term iterative testing mean? [2 marks]

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(b) The terms listed below are related to testing and evaluating multimedia applications.

Using the terms in the list below, choose one term that best matches the definition or process in the left-hand column (not all terms will be used). [5 marks]

- Black box testing**
- Navigation Testing**
- User requirements**
- A/B Testing**
- System testing**
- White box testing**
- Alpha testing**
- Beta testing**

<b>Definition / Process</b>	<b>Term</b>
Creating two versions of the same application to get feedback from a group of end users	
A document that contains a list of tasks an application should be able to carry out	
Ensuring an application provides the correct input and output	
A process carried out by a programmer to ensure the code works correctly	
Checking that all links to external web pages take the user to the required location	

(c) How can a developer evaluate a multimedia application that contains a number of images? [2 marks]

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(d) Identify **three** types of data you would expect to see included in an effective test plan. [3 marks]

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

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**This is the end of the question paper**

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For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	

<b>Total Marks</b>	
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Examiner Number

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