National 5
coursework
assessment task

Qualifications Scotland
Teisteanasan Alba

National 5 Computing Science Assignment Assessment task

This document provides information for teachers and lecturers about the coursework component of this course in terms of the skills, knowledge and understanding that are assessed. It must be read in conjunction with the course specification.

Valid for session 2025-26 only.

This assessment is given to centres in strictest confidence. You must keep it in a secure place until it is used.

This edition: January 2026

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Introduction

This document contains instructions for teachers and lecturers, and instructions for candidates for the National 5 Computing Science assignment. You must read it in conjunction with the course specification.

This assignment has 40 marks out of a total of 120 marks available for the course assessment.

This is one of two course assessment components. The other component is a question paper.

Instructions for teachers and lecturers

This assessment applies to the assignment for National 5 Computing Science for the academic session 2025–26.

The task is valid for 2025–26 only. Once complete, you must send the assignment responses to Qualifications Scotland to be marked.

You must conduct the assignment under a high degree of supervision and control. This means:

- candidates must be supervised throughout the session(s)
- candidates must not have access to email or mobile phones
- candidates must complete their work independently — no group work is permitted
- candidates must not interact with each other
- with no interruption for targeted learning and teaching
- in a classroom environment

You can use any integrated development environments (IDEs) that enables candidates to generate evidence — this includes online IDEs. However, IDEs must have a facility that prevents candidates accessing their files and tasks outside the supervised classroom environment.

Time

Candidates have 6 hours to carry out the assignment, starting at an appropriate point in the course, after all content has been delivered. It is not anticipated that this is a continuous 6-hour session, although it can be, but conducted over several shorter sessions. This is at your discretion.

You have a responsibility to manage candidates' work, distributing it at the beginning and collecting it in at the end of each session, and storing it securely in between. This activity does not count towards the total time permitted for candidates to complete the assignment.

Candidates are prompted to print their work at appropriate stages of the tasks. They can print on an ongoing basis or save their work and print it later. Whatever approach they take, time for printing is not part of the 6 hours permitted for the assignment.

Resources

Each candidate must have access to a computer system with a high-level (textual) programming language and **either**:

- a database application or software that can create, edit and run SQL
- software that can create, edit and run HTML and CSS

This is an open-book assessment. Candidates can access resources such as programming manuals, class notes, textbooks and programs they have written throughout the course. These may be online resources.

You must not create learning and teaching tasks that make use of constructs required in the assessment task, **with the specific purpose of developing a solution that candidates can access during the assignment**.

You can provide candidates with templates, however these templates must only contain general starter code used in learning and teaching (for example, a web page that contains the HTML, title and body elements) — templates must not be tailored to this year's task.

There may be instances where restriction of network use is prohibited (for example, a local authority-managed network with specific limitations). However, it remains your professional responsibility to make every effort to meet the assessment conditions.

Reasonable assistance

The assignment consists of three independent tasks. They are designed in a way that does not require you to provide support to candidates, other than to ensure that they have access to the necessary resources. Candidates can complete the tasks in any order.

Once the assignment is complete, you must not return it to the candidate for further work to improve their mark. You must not provide feedback to candidates or offer an opinion on the perceived quality or completeness of the assignment response, at any stage.

You can provide reasonable assistance to support candidates with the following aspects of their assignments:

- printing, collating and labelling their evidence to ensure it is in the format specified by Qualifications Scotland
- ensuring any pages that do not contain candidate evidence are discarded and page order matches the order of the tasks
- ensuring candidates have all the materials and equipment required to complete the assignment — this includes any files provided by Qualifications Scotland
- ensuring candidates understand the conditions of assessment and any administrative arrangements around the submission and storage of evidence, and the provision of files
- technical support

Evidence

All candidate evidence (whether handwritten or created electronically) must be submitted to Qualifications Scotland in a paper-based format. The evidence checklist details all evidence to be gathered. You can use it to ensure you submit all evidence to Qualifications Scotland.

You should advise candidates that evidence, especially code, must be clear and legible. This is particularly important when pasting screenshots into a document.

There is no need for evidence to be printed single-sided or in colour.

If evidence is handwritten, candidates must use a blue or black pen.

When packaging, ensure that:

- each assignment is accompanied by an Qualifications Scotland A4 flyleaf
- all completed task sheets and additional evidence of screenshots or printouts from development environments are included and ordered in line with the task
- sheets that do not contain candidate evidence are removed
- candidates' SCNs are on every page
- the flyleaf and candidate evidence are stapled together in the top left corner

Alteration or adaptation

The tasks are in PDF and Word formats. Each task is available as a separate file from the secure site. Word files allow candidates to word process their responses to parts of the task.

You must not adapt the assignment in any way that changes the instructions to the candidate and/or the nature and content of the tasks. However, you can make changes to font size, type and colour and to the size of diagrams for candidates with different assessment needs, for example, visual impairment.

If you are concerned that any particular adaptation changes the nature and/or the content of the task, please contact our Assessment Arrangements Team for advice as soon as possible at aarequests@qualifications.gov.scot.

Submission

Each page for submission has the number of the assignment task that it refers to, for example 1a, and contains space for candidates to complete their candidate number. Any other pages submitted, for example, prints of program listings or screenshots, must have this information added to them.

Only submit pages that contain candidate evidence. Ensure the page order matches the order of the task.

Specific instructions for teachers and lecturers: 2025-26

All candidates must complete task 1 (software design and development) and **either** task 2 (database design and development) **or** task 3 (web design and development).

It is at your discretion how you approach this optionality in assessment. The task your candidates complete might be pre-determined by your progress through the course, or you may be able to let candidates choose which task to complete.

You must follow these specific instructions and ensure that candidates are aware of what you will give them at each stage in the assessment.

Print each task on single-sided paper, where applicable:

- this allows candidates to refer to information on other pages
- this helps you manage tasks that are split into more than one part

Task 1 — part A requires candidates to identify processes and design part of the program solution. They must submit their evidence to you before you issue part B.

Task 1 — part B is a separate section. This ensures that candidates are not able to access part A and change their responses. Candidates must still have access to the problem description during part B.

Task 2 — part A requires candidates to create functional requirements and complete the analysis of inputs. They must submit their evidence to you before you issue part B.

Task 2 — part B is a separate section that requires candidates to complete a data dictionary. They must submit their evidence to you before you issue part C. Candidates must still have access to the database analysis during part B.

Task 2 — part C is a separate section. This ensures that candidates are not able to access part A and part B and change their responses.

A Microsoft Access file (adventureWorld.accdb) is provided for candidates to use in part C. If your centre uses a different database management system, you can create the relational database using the CSV files or the text files provided.

If using the CSV files, you should set up all tables, fields and validation shown in the data dictionaries below. Referential integrity should also be enforced.

The text files contain SQL create and insert statements for each table. If you use the text files, you must add validation shown in the data dictionaries below. Different database environments use different data types and methods of validation. You may have to make minor modifications to the database to account for these differences.

Entity name: Customer

Attribute name	Key	Type	Size	Required	Validation
customerID	PK	Text	10	Y	
customerName		Text	100	Y	
email		Text	200	Y	
telephone		Text	11	Y	
member		Boolean		Y	
expirationDate		Date		N	

Entity name: Booking

Attribute name	Key	Type	Size	Required	Validation
bookingID	PK	Number		Y	
bookingDate		Date		Y	
children		Number		Y	Range: >= 1
adults		Number		Y	Range: >= 1
sessionType		Text	14	Y	Restricted choice: 45 min, 90 min, birthday party
area		Text	10	Y	Restricted choice: adventure, toddler, soft
customerID	FK	Text	10	Y	Existing customerID from Customer table

Task 3 — part A requires candidates to create functional requirements and complete a wireframe diagram. They must submit their evidence to you before you issue part B.

Task 3 — part B is a separate section. This ensures that candidates are not able to access part A and change their responses.

A folder titled 'WDD' is provided. This contains the CSS, HTML and media files candidates need to complete this task. These files should remain in the folder and should not be renamed. However, the case of suffixes may be changed if the environment you work in requires them to be lower or upper case.

Candidates **do not** need to print completed web pages in colour.

Instructions for candidates

This assessment applies to the assignment for National 5 Computing Science.

This assignment has 40 marks out of a total of 120 marks available for the course assessment.

It assesses the following skills, knowledge and understanding:

- applying aspects of computational thinking across a range of contexts
- analysing problems within computing science across a range of contemporary contexts
- designing, implementing, testing and evaluating digital solutions (including computer programs) to problems across a range of contemporary contexts
- demonstrating skills in computer programming
- applying computing science concepts and techniques to create solutions across a range of contexts

Your teacher or lecturer will let you know if there are any specific conditions for doing this assessment.

In this assessment, you have to complete two short practical tasks.

You must complete task 1 (software design and development) and **either** task 2 (database design and development) **or** task 3 (web design and development).

You may complete the tasks in any order.

Advice on how to plan your time

You have 6 hours to complete the assignment. Marks are allocated as follows:

♦ Task 1 — software design and development	25 marks	(63% of total)
AND EITHER		
♦ Task 2 — database design and development	15 marks	(37% of total)
OR		
♦ Task 3 — web design and development	15 marks	(37% of total)

You can use this split as a guide when planning your time for each of the two tasks.

Advice on gathering evidence

As you complete each task, you must gather evidence as instructed.

Your evidence, especially code, must be clear and legible. This is particularly important when you paste screenshots into a document. You can print code from the software environment or copy and paste this into other packages such as notepad or Word.

Use the evidence checklist provided to make sure you submit everything necessary at the end of the assignment. Make sure you include your candidate number on all your evidence.

Evidence may take the form of printouts of code, screenshots, typed answers, handwritten answers or drawings of diagrams and designs.

You must use a blue or black pen for any handwritten answers.

Only submit pages that contain your answers. Order the pages in the same order as the task.

Advice on assistance

This is an open-book assessment. This means that you can use:

- any classroom resource as a form of reference (for example programming manuals, class notes and textbooks) — these may be online resources
- any files you have previously created throughout the course

The tasks are designed so you can complete them independently, without any support from your teacher or lecturer. This means that you:

- cannot ask how to complete any of the tasks
- cannot access any assignment files outside the classroom

Computing Science assessment task: evidence checklist

You should complete the checklist for task 1 and **either** task 2 **or** task 3.

Task 1 — software design and development

Task	Evidence	Tick
1a	Completed task sheet showing additional processes	
1b	Completed task sheet showing your design	
1c	Printout of your program code	
1d	Completed task sheet showing expected output	
1e	Completed task sheet with your evaluation	

Task 2 — database design and development

Task	Evidence	Tick
2a	Completed task sheet with two functional requirements	
2b	Completed task sheet showing the completed analysis of the inputs	
2c	Completed task sheet showing the completed data dictionary	
2d (i)	Printout of implemented SQL statement Printout of the output	
2d (ii)	Printout of implemented SQL statement Printout of the updated table	
2d (iii)	Printout of implemented SQL statement Printout of the output	
2e	Completed task sheet stating reasons why the SQL statement does not produce the expected output	

Task 3 — web design and development

Task 3	Evidence	Tick
3a	Completed task sheet with two functional requirements	
3b	Completed task sheet with your wireframe design	
3c	Printout of edited code for monopolies.html and styles.css Printout of web page as viewed in a browser	
3d	Completed task sheet with your description of how JavaScript onmouseover event could improve your web page	
3e	Completed task sheet with your evaluation	

Please follow the steps below before handing your evidence to your teacher or lecturer:

- Check you have completed all parts of task 1 and **either** task 2 **or** 3.
- Label any printouts and screenshots with the task number (for example 1a, 2a).
- Clearly display your candidate number on each printout.
- Discard any pages that do not contain evidence.
- Order the pages in the same order as the task.

Task 1: software design and development

A ski centre measures the amount of new snowfall every day. They require a program to analyse the snowfall data.

Problem description

The program will allow ski centre staff to enter a valid daily measurement of new snow in centimetres (between 0 and 60). Each measurement greater than or equal to 0.5 cm will be stored and used to calculate the:

- total of the stored snowfall measurements
- number of snowfall measurements included and not included in the analysis
- average snowfall.

When the user enters that 0 cm of snow fell, the program will display the results of the analysis.

For any analysis of the data to be worthwhile, a total of at least 10 cm of snow must fall over a period of at least five days.

Examples of inputs and outputs

Example 1

```
Enter snowfall (in cm): 10.5
Enter snowfall (in cm): 0.3
Enter snowfall (in cm): 12.0
Enter snowfall (in cm): 5.6
Enter snowfall (in cm): 0.2
Enter snowfall (in cm): 0

The number of days snowfall lasted was: 5
2 days were not included in the calculations
The 3 stored measurements were as follows:
10.5
12.0
5.6
The average of the stored measurements is: 9.37
```

Example 2

```
Enter snowfall (in cm): 5.2
Enter snowfall (in cm): -2.4
Try again. Your value must be between 0 and 60: 0.3
Enter snowfall (in cm): 0

Not enough data for analysis.
```

Task 1: software design and development (part A)

1a Complete the table by identifying two additional processes.

(2 marks)

Input(s)
Daily snowfall measurements
Process(es)
Calculate the total of stored snowfall measurements Calculate the number of snowfall measurements not included in the analysis Calculate the average snowfall
Output(s)
Number of days snowfall lasted Number of days that were not included in the calculations Each stored measurement Average snowfall or Not enough data for analysis

Candidate number_____

1b The program will display the stored snowfall measurements.

Design how this could be implemented. You can use a flowchart, structure diagram or pseudocode design.

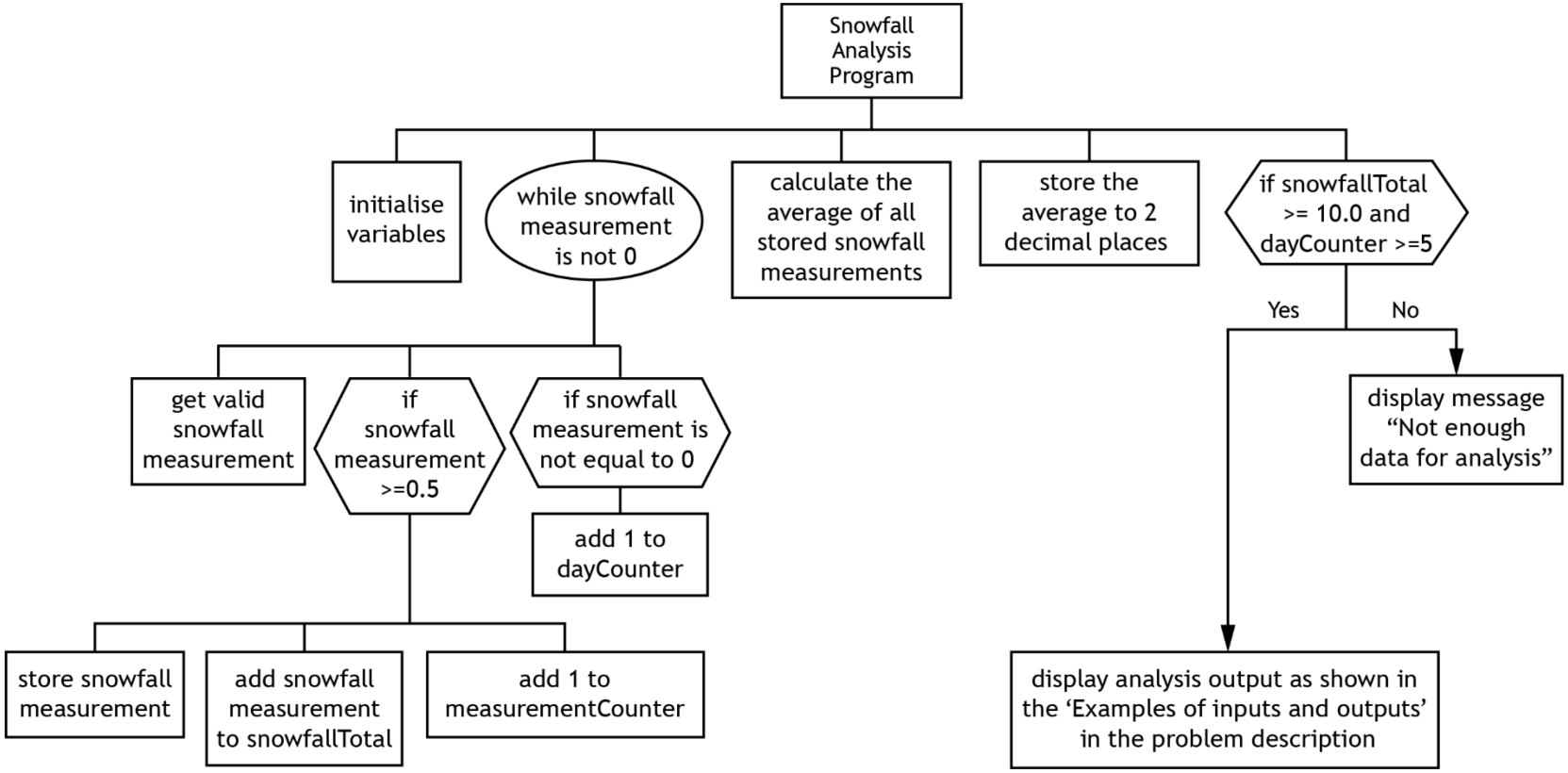
(3 marks)

- Check your answers carefully, as you cannot return to part A after you hand it in.
- When you are ready, hand part A to your teacher or lecturer and collect part B.

Candidate number_____

Task 1: software design and development (part B)

Program design (structure diagram)



1c Using the problem description and the program design, implement the program in a language of your choice.

Ensure the program matches the design given.

Print evidence of your program code.

(15 marks)

1d Complete the expected output below for the following normal test data:

- Snowfall 1: 5.01
- Snowfall 2: 0.22
- Snowfall 3: 70.3
- Re-entered snowfall 3: 0.48
- Snowfall 4: 4.9
- Snowfall 5: 1.14
- Snowfall 6: 0

(2 marks)

Expected output
…… The number of days snowfall lasted was: …… …… days were not included in the calculations The …… stored measurements were as follows: The average of the stored measurements is: ……

Candidate number_____

1e With reference to your code, evaluate your program by commenting on the following:

Fitness for purpose	**(1 mark)**
Efficient use of programming constructs	**(1 mark)**
Readability	**(1 mark)**

Candidate number_____

Task 2: database design and development

Adventure World is a play centre for children under 12. They offer soft play, adventure and toddler areas for children to explore. Customers can book 45-minute, 90-minute or birthday party sessions.

Adventure World wants to create a database to manage their booking system more efficiently. The database will store each customer's ID, name, email, telephone number, annual membership status and membership expiry date.

For each booking, the database will store a booking ID, date, the number of children and adults attending, session type, and play area required. A minimum of one child and one adult is required for each booking.

The database will be used to manage bookings, identify frequent customers and notify members about their membership expiry. It will also allow the company to analyse area usage.

Task 2: database design and development (part A)

2a Create two functional requirements that would require a search of the database.

(2 marks)

Functional requirement 1
Functional requirement 2

2b The information will be stored in a database under two headings: Customer and Booking.

Use the problem description to complete the analysis of inputs below for Customer and Booking:

(1 mark)

Customer	**Booking**
customerID customerName email telephone	bookingID customerID bookingDate children adults

- Check your answers carefully, as you cannot return to part A after you hand it in.
- When you are ready, hand in part A to your teacher or lecturer and collect part B.

Candidate number_____

Task 2: database design and development (part B)

2c Using the information provided in the database analysis, complete the four missing validation rules for the Booking table.

(2 marks)

Entity name: Booking

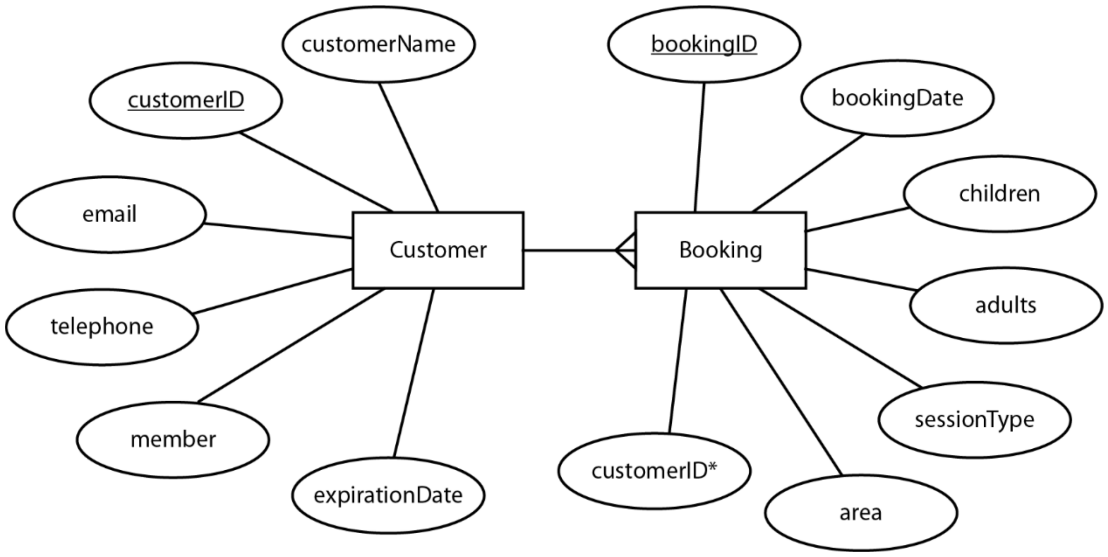
Attribute name	Key	Type	Size	Required	Validation
bookingID	PK	Number		Y	
bookingDate		Date		Y	
children		Number		Y	
adults		Number		Y	
sessionType		Text	14	Y	
area		Text	10	Y	
customerID	FK	Text	10	Y	Existing customerID from Customer table

- Check your answers carefully, as you cannot return to part B after you hand it in.
- When you are ready, hand in part B to your teacher or lecturer and collect part C.

Candidate number_____

Task 2: database design and development (part C)

2d Your teacher or lecturer will provide you with a completed database file. An entity relationship diagram of the database is shown below.



(i) Adventure World offers a discount for large birthday parties.

Implement an SQL statement that will show the name, email address and telephone number of customers who have booked a birthday party for 20 or more children. Sort the results showing the highest number of children first.

Print evidence of your SQL statement and the output from the query after it has been implemented.

(3 marks)

(ii) Grace Hopper (CUST007) makes a new booking for a 45-minute session in the soft play area on 15 March 2026. Ten children will attend with four adults. The bookingID will be 404.

Implement an SQL statement that will add this booking to the database.

Print evidence of your SQL statement and evidence clearly showing that the booking has been added.

(1 mark)

(iii) Adventure World changed the food menu for birthday party sessions in January 2026 and wants to contact members to get their feedback.

Implement an SQL statement to produce a list showing the name and email address of all members who booked a birthday party that took place in January 2026.

Print evidence of your SQL statement and the output from the query after it has been implemented.

(4 marks)

2e Adventure World wants to generate a list of bookings for the adventure and soft play areas. The database should display the bookingID, sessionType, area and customerID for bookings made in these areas.

The results should be sorted by the most recent booking first.

The following incorrect SQL statement is written:

```
SELECT bookingID, sessionType, area, Customer.customerID
FROM Booking, Customer
WHERE (area = 'adventure' AND area = 'soft')
ORDER BY bookingDate ASC;
```

Test this SQL statement.

State two reasons why this SQL statement does not produce the expected output.

(2 marks)

Reason 1
Reason 2

Candidate number_____

Task 3: web design and development (part A)

Monopolies barber shop wants a web page to promote their hair, beard and grooming services.

Customers would like to see:

- information on services (haircuts, trims, shaves, grooming) with a video clip of one of their barbers in action
- beard care tips with a list of five areas to consider (washing, conditioning, trimming, brushing and hydration)
- contact details about the shop
- a link to vote for Monopolies in the barber shop awards
- an attractive colour scheme and a logo

3a Create two functional requirements for this web page.

(2 marks)

Functional requirement 1
Functional requirement 2

Candidate number_____

3b Use the information provided to create a wireframe to show the layout of the web page.

(2 marks)

- Check your answers carefully, as you cannot return to part A after you hand it in.
- When you are ready, hand in part A to your teacher or lecturer and collect part B.

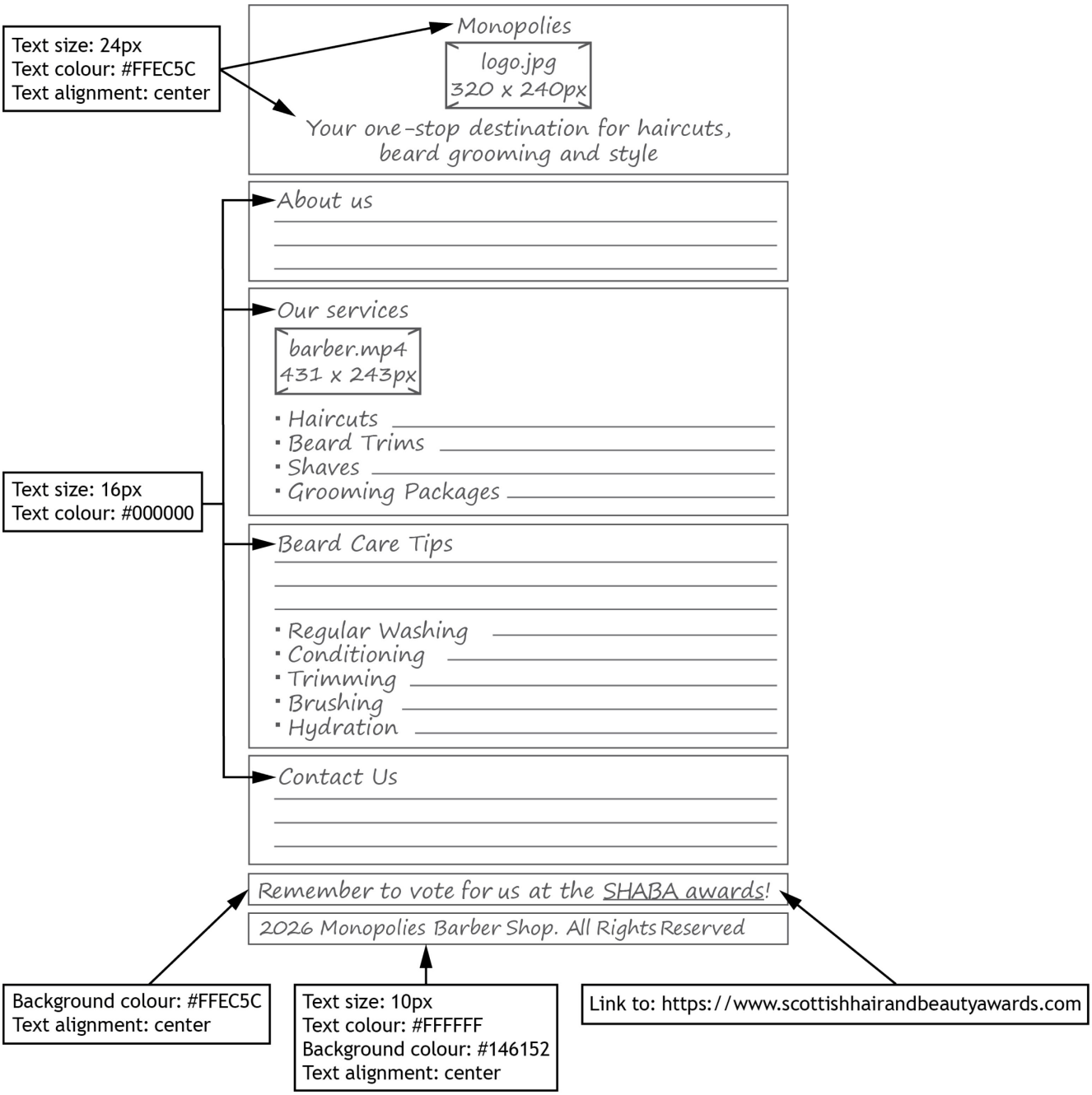
Candidate number_____

Task 3: web design and development (part B)

3c Monopolies would like to implement the wireframe shown below.

Unless another style is indicated by the wireframe, all text should be:

- Font: Arial
- Text size: 12px
- Text colour: #333333



Your teacher or lecturer will provide you with the partially complete 'monopolies.html' and 'styles.css' files, in addition to the logo.jpg and barber.mp4 media files.

Implement the design using HTML and CSS.

The web page should include a hyperlink to:
https://www.scottishhairandbeautyawards.com

(8 marks)

Print evidence of the following:

- the edited 'monopolies.html' file
- the edited 'styles.css' file
- web page as viewed in a web browser

3d Describe how the use of the onmouseover JavaScript event could improve your web page.

(1 mark)

Candidate number_____

3e Evaluate the fitness for purpose of your completed web page using the functional requirements below.

(2 marks)

Functional requirements

The web page should:

- display a company logo image
- display information about the company
- include a photo gallery featuring a variety of different hair and beard styles
- show information on the services provided: haircuts, trims, shaves and grooming
- play a video clip of a barber in action
- list five beard care tips with information on washing, conditioning, trimming, brushing and hydration
- include a 'contact us' section
- provide a hyperlink to the SHABA awards
- provide links to the company social media pages
- display a consistent font and colour scheme

Candidate number_____

Copyright acknowledgements

Electronic files:

MP4 Barber Shop - Miridda/Shutterstock.com

Administrative information

Published: January 2026 (version 1.0)

History of changes

Version	Description of change	Date

Security and confidentiality

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