G.C.E. O/L Grade 11 ICT

Lesson 5: Websites: Planning, HTML, Web Tools and Publishing

- 5.1 Planning a Website: Purpose, Audience, Content, Layout and Design
- 5.2 HTML Basics: Tags, Text, Images, Hyperlinks, Lists and Tables
- 5.3 Web Development Tools: Authoring Tools, Static and Dynamic Websites, CMS
- 5.4 Publishing a Website: Domain Names, Web Hosting, Uploading and Maintenance

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G.C.E. O/L Grade 11 ICT · Lesson 5

5.1 Planning a Website: Purpose, Audience, Content, Layout and Design

Syllabus 14.1. Before a builder makes a house, an architect draws a plan. A website is the same. In this note you will plan a website for **Sunrise College**: decide its **purpose** and **audience**, organise the **content** into a **site map**, draw a **wireframe**, choose **colours, fonts and media**, and write a simple **specification**. Good planning saves time and makes a site that people enjoy using.

1. Website, web page and home page

A **web page** is one document you see in a browser. A **website** is a group of linked web pages under one name, such as **www.sunrise.lk**. The first page you see is the **home page** (often called **index.html**). Every page has its own address called a **URL**.

Web page වෙබ් පිටුව	**Website** වෙබ් අඩවිය
Home page මුල් පිටුව	**URL** URL

2. The planning steps

Plan in this order. Each step answers one simple question. When the site is tested, you go back and improve – planning is a **cycle**, not a one-time job.

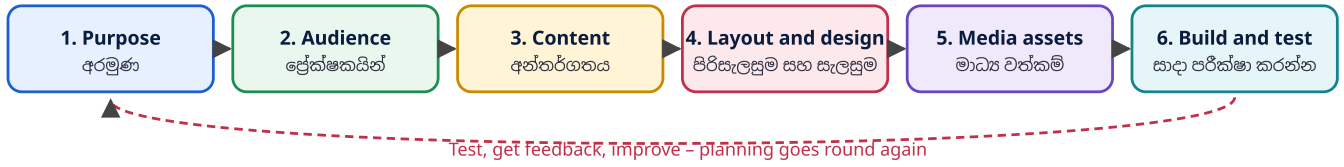


Figure 5.1 – The six planning steps. After testing, you go round again.

Step	Question it answers
Purpose	Why is the site needed? e.g. share school news
Audience	Who will use it? students, parents, old pupils
Content	What to say; group it into pages (site map)
Layout and design	Wireframe, colour scheme, fonts

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Media assets	Choose photos, logo, audio, video
Build and test	Make pages, test on phone and PC

3. Purpose and target audience

The **purpose** is the reason the website exists: to **inform** (school news), to **sell** (an online shop), to **teach** (e-learning), or to **entertain** (games). The **target audience** is the group of people who will use it. Know their **age, language, device and needs**. In Sri Lanka many visitors use **phones** and read **Sinhala, Tamil or English**.

Audience	What they need from the school site
Students	Timetables, notes, results, club news
Parents	Term dates, notices, contact details
Old pupils	History, events, how to help
New families	Admission, location, facilities

> 💡 Write the purpose in **one sentence**: “The Sunrise College site tells students and parents about school news, dates and clubs.” If a page does not help this purpose, leave it out.

4. Organising content – the site map

Content is everything on the site: text, photos, videos and files. Group it into pages, then draw a **site map** – a diagram that shows all pages and how they link, like a family tree. Our school site has **12 pages** in **3 levels**: the home page, 5 main pages (About us, Academics, Clubs, News, Contact), and sub-pages under some of them.

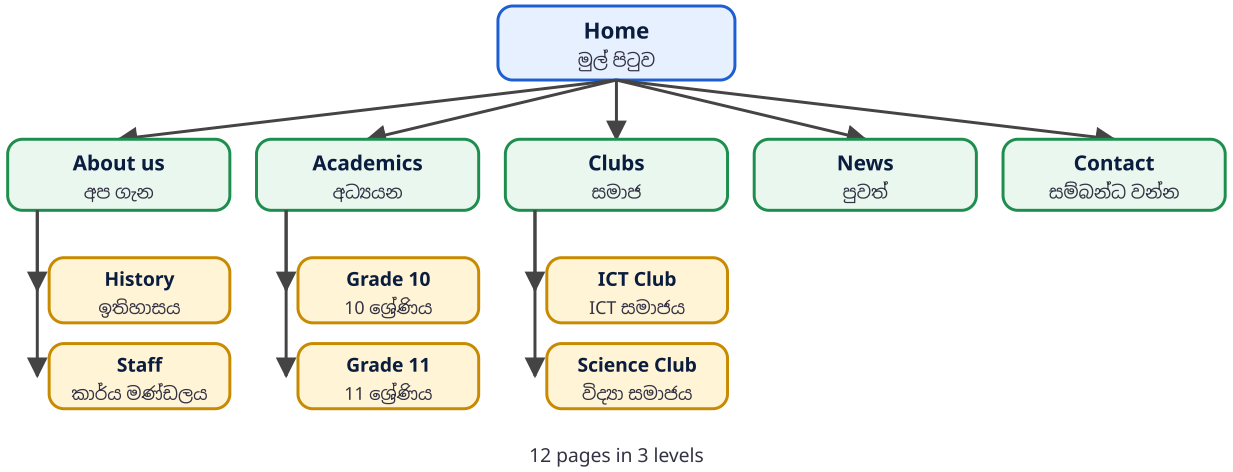


Figure 5.2 – Site map of the Sunrise College website (hierarchical structure).

Structure	How pages link	Good for
Linear	One after another, Next / Back	A step-by-step lesson or quiz

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Hierarchical (tree)	Home → main pages → sub-pages	Most school and business sites
Web (networked)	Any page can link to any page	Wikipedia, blogs

> 💡 Keep the menu short: **5 to 7 main pages**. A visitor should reach any page in **3 clicks** or fewer.

5. Layout – the wireframe

Layout is where things go on the page. A **wireframe** is a simple sketch of a page with boxes, drawn before any colour or photo is added. Most pages use the same parts: **header** (logo and name), **navigation menu**, **main content**, a **sidebar** and a **footer**. Using the **same layout on every page** (consistency) helps visitors feel at home.

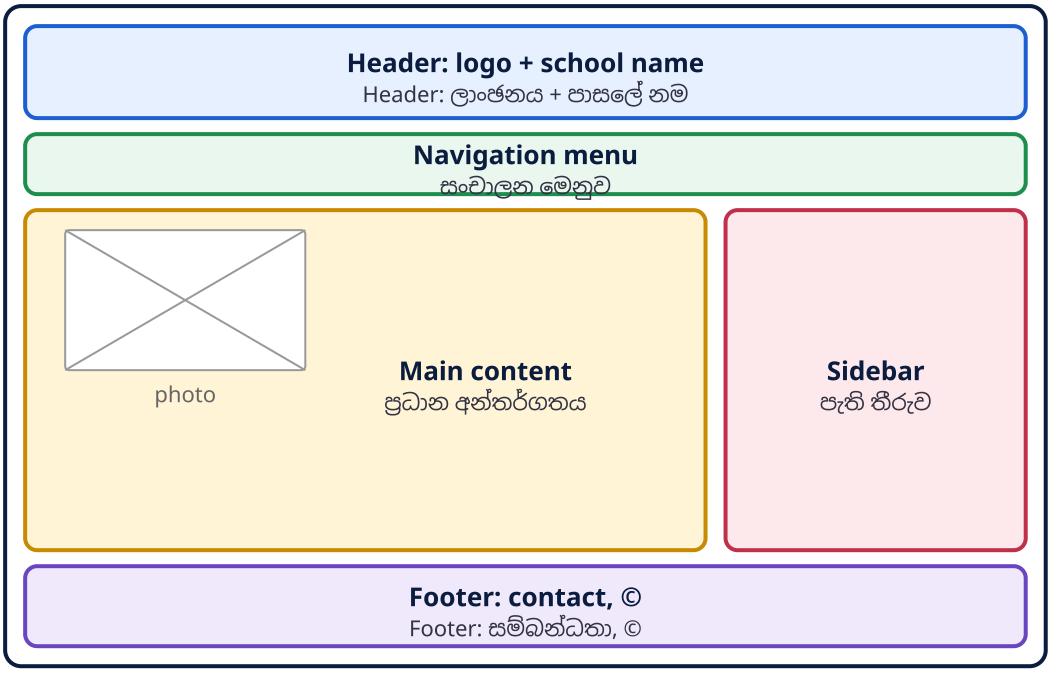


Figure 5.3 – A wireframe of the home page: header, menu, main content, sidebar and footer.

6. Colour scheme

A **colour scheme** is a small set of colours used across the whole site – usually **2 or 3 main colours** plus white or grey. Take them from the school badge. Colours on the web are written as **hex codes** like **#0B1D3F** (Red 0B, Green 1D, Blue 3F).

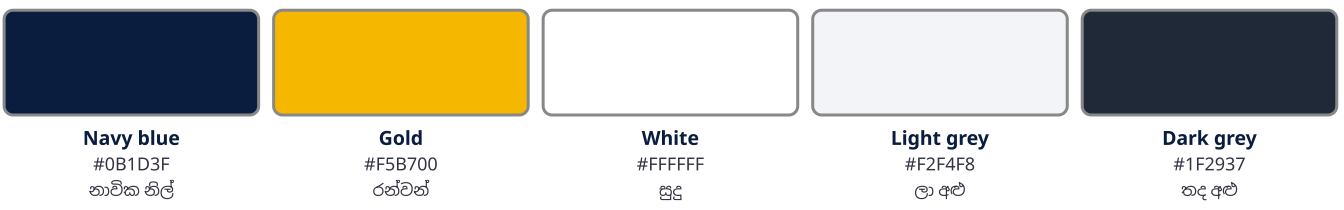


Figure 5.4 – The colour scheme of the school website with hex codes.

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Colour	Hex	RGB	Used for
Navy blue	#0B1D3F	11, 29, 63	Header, menu, headings
Gold	#F5B700	245, 183, 0	Buttons and highlights only
White	#FFFFFF	255, 255, 255	Page background
Light grey	#F2F4F8	242, 244, 248	Boxes and table rows
Dark grey	#1F2937	31, 41, 55	Body text

Text must stand out from its background. This is called **contrast**. Web rules (**WCAG**) ask for a contrast ratio of at least **4.5 : 1** for normal text. Look at the checks below: gold text on white fails, so gold is used only for buttons with navy text.

Text	Background	Contrast	Result
Dark grey	White	14.7 : 1	✔ Easy to read
White	Navy blue	16.6 : 1	✔ Easy to read
Navy blue	Gold	9.2 : 1	✔ Easy to read
Gold	White	1.8 : 1	✘ Too pale – do not use
Dark grey	Light grey	13.3 : 1	✔ Easy to read

7. Fonts and text

- Use **one or two fonts** only – one for headings, one for body text.
- **Sans-serif** fonts (Arial, Noto Sans) are easy to read on screens. For Sinhala use a Unicode font such as **Noto Sans Sinhala** or **Iskoola Pota**.
- Body text about **16 px**; headings bigger. Short paragraphs and clear headings help people scan.
- Do not write whole sentences in CAPITALS, and do not underline words that are not links.

8. Media assets

Media assets are the photos, logo, icons, audio and video files the site needs. Collect them before you build. Make photos **small for the web** (for example 1200 px wide, JPEG or WebP, under 300 KB) so pages load fast on mobile data. Use your own photos or ones you have **permission** to use, and give every picture **alt text** for blind users.

9. User needs and usability

Easy to find
සොයා ගැනීමට පහසුයි

Fast
වේගවත්

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Works on phones දුරකථනවල ක්‍රියා කරයි	**For everyone** සැමට
Up to date යාවත්කාලීනයි	**Safe** ආරක්ෂිතයි

10. Writing the specification

A **specification** is a short written list of what the finished site must have. The client (the principal) and the developer (the ICT club) both agree to it. Here is a simple one:

Item	Sunrise College website
Purpose	Share school news, dates and club activities
Audience	Students, parents, old pupils
Pages	12 pages, 3 levels (see site map)
Languages	Sinhala and English
Design	Navy and gold scheme, Noto Sans fonts
Devices	Phones, tablets and computers (responsive)
Updates	News every week by the ICT club

NEW 2026 **2026:** Most visitors now arrive on a **phone**, so plan **mobile first**: design the small screen, then the big one. Also plan for **accessibility** (alt text, contrast, keyboard use) and **HTTPS**. AI tools can suggest a site map or draft text, but **you** must check facts and photos before publishing.

Key Words

Website – A group of linked web pages under one name.	**Home page** – The first page of a website, often index.html.
URL – The address of a web page.	**Purpose** – The reason a website is made.
Target audience – The people the website is made for.	**Site map** – A diagram of all pages and how they link.
Wireframe – A simple box sketch of a page layout.	**Navigation** – The menu and links used to move between pages.
Colour scheme – The small set of colours used on all pages.	**Contrast** – How much text stands out from its background.

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Media assets – Photos, logos, audio and video used on the site.

Specification – A written list of what the finished site must have.

Sample Q&A

1. What is the difference between a web page and a website?

> **Answer:** A web page is one document; a website is many linked pages under one name.

2. Why must you know the target audience?

> **Answer:** So the content, language, design and device suit the people who will use the site.

3. How many pages are in the school site map, and how many levels?

> **Answer:** 12 pages in 3 levels.

4. What is a wireframe?

> **Answer:** A simple box sketch showing where the header, menu, content and footer go.

5. Why is gold text on a white background a poor choice?

> **Answer:** Its contrast is only 1.8 : 1, below the 4.5 : 1 needed, so it is hard to read.

6. Give two things a website specification should include.

> **Answer:** Any two: purpose, audience, list of pages, languages, design, devices, update plan.

MCQ

1. The first step in planning a website is to decide its

A. purpose
B. fonts
C. host
D. colours

2. The group of people a website is made for is its

A. administrator
B. web host
C. target audience
D. domain

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3. A diagram showing all pages of a site and how they link is a

A. wireframe
B. storyboard
C. site map
D. flowchart of code

4. A simple box sketch of where things go on one page is a

A. wireframe
B. site map
C. specification
D. colour scheme

5. In the school site map, how many pages are there?

A. 3
B. 12
C. 6
D. 5

6. A site where every page links in a tree from the home page has a

A. single-page structure
B. random structure
C. linear structure
D. hierarchical structure

7. The hex code #FFFFFF is

A. blue
B. red
C. white
D. black

8. The minimum contrast ratio for normal text (WCAG) is

A. 10 : 1
B. 4.5 : 1
C. 1 : 1
D. 2 : 1

9. Which colour pair is hardest to read?

A. Gold text on white
B. White text on navy
C. Navy text on gold
D. Dark grey text on white

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10. Which font is best for Sinhala text on a website?

A. Any decorative font
B. Wingdings
C. Noto Sans Sinhala (Unicode)
D. FM Abhaya (non-Unicode)

11. Why should photos be made small before putting them on a website?

A. Colours become brighter
B. They need no alt text
C. They become vector
D. Pages load faster

12. Alt text for an image mainly helps

A. blind users using screen readers
B. the page get a URL
C. the image change colour
D. the image load faster

13. Using the same header and menu on every page gives

A. compression
B. consistency
C. animation
D. encryption

14. A written list of what the finished site must have is the

A. domain name
B. source code
C. site map
D. specification

15. “Mobile first” design means

A. build only an app
B. design for the phone screen first
C. never use computers
D. use only images

Structured Questions

1. List the six steps of planning a website in order. *(2 marks)*

> Purpose, Audience, Content, Layout and design, Media assets, Build and test.

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2. Your school wants a website. Give its purpose and two groups in its target audience. *(2 marks)*

> Purpose: to share school news, dates and club activities. Audience: students and parents (also old pupils, new families).

3. Draw a wireframe for a home page and label four parts. *(2 marks)*

> A box diagram with: header (logo, name), navigation menu, main content, sidebar, footer (any four labelled).

4. Give three rules for choosing colours and fonts for a website. *(3 marks)*

> 2–3 main colours used on every page; strong contrast (at least 4.5 : 1); one or two easy sans-serif fonts, Unicode for Sinhala.

5. Explain why a site map is drawn before building a website. *(2 marks)*

> It shows every page and link, so no page is forgotten, the menu is planned and visitors can reach pages in few clicks.

Summary

- Website = linked pages; home page = index.html; each page has a URL.
- Plan: purpose → audience → content → layout → media → build and test.
- Purpose = why; audience = who (age, language, device).
- Site map shows all pages; structures: linear, hierarchical, web.
- Wireframe = header, menu, content, sidebar, footer.
- Colour scheme of 2–3 colours; contrast at least 4.5 : 1.
- 1–2 sans-serif fonts; Unicode for Sinhala; small, credited photos with alt text.
- Specification = agreed list; plan mobile first, accessible and HTTPS.

MCQ answer key – 5.1

1. **A** – First decide why the site is needed; everything else follows.
2. **C** – The target audience is who will use the site.
3. **C** – A site map shows the page structure.
4. **A** – A wireframe shows the layout of one page.
5. **B** – 1 home + 5 main + 6 sub-pages = 12.
6. **D** – Home → main pages → sub-pages is hierarchical.
7. **C** – FF FF FF = 255, 255, 255, all light on = white.
8. **B** – WCAG asks for at least 4.5 : 1.
9. **A** – Gold on white is only 1.8 : 1.
10. **C** – Unicode fonts show correctly on every device.
11. **D** – Small files load quickly, especially on mobile data.

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12. **A** – Screen readers read the alt text aloud.
13. **B** – Consistency makes a site easy to use.
14. **D** – The specification is agreed before building.
15. **B** – Most visitors use phones, so plan the small screen first.

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5.2 HTML Basics: Tags, Text, Images, Hyperlinks, Lists and Tables

Syllabus 14.2. Every web page is written in **HTML**. In this note you will learn what **hypertext** is, how an HTML document is built, and how to show **headings, paragraphs, coloured text, images, links, lists and tables**. Each example shows the **code** and, under it, the **result in the browser**. Type them in Notepad, save as **.html** and open in Chrome to try them yourself.

1. Hypertext and normal text

Normal text (like a printed book) is read from start to end in one order. **Hypertext** is text with **links** (hyperlinks). Click a link and you jump to another page, picture or site. **HTML** means **HyperText Markup Language** – a language of **tags** that tells the browser how to show the page. HTML is **not** a programming language; it has no loops or calculations.

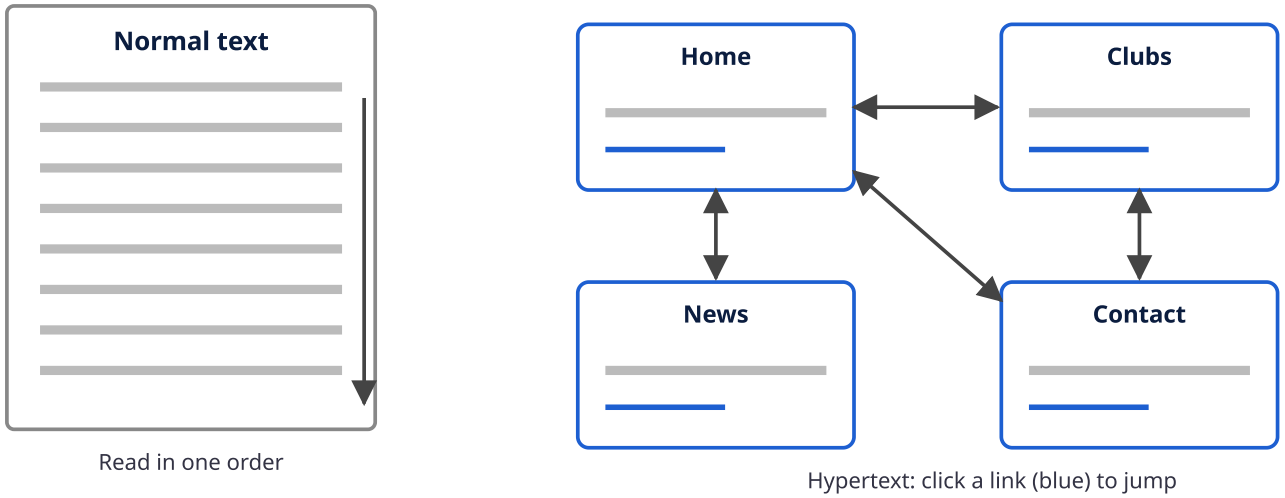


Figure 5.5 – Normal text is read in one order; hypertext lets you jump between pages using links.

Feature	Normal text	Hypertext
Reading order	Start to end, in one order	Jump anywhere by clicking links
Links	None	Links to other pages, files and sites
Media	Usually text only	Text with images, audio and video
Example	A printed textbook page	A web page, Wikipedia

2. Tags, elements and attributes

A **tag** is a word inside angle brackets, like . Most tags come in pairs: an **opening tag** and a **closing tag** with a slash. The opening tag, the content and the closing tag together make an

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element. Some tags have no closing tag; they are **empty elements**, such as <br>, <hr> and <img>. An **attribute** gives extra information inside the opening tag: <img src="logo.png" alt="School logo">. Here src and alt are attributes; their values go in double quotes.

- HTML5 tags are **not case-sensitive**, but always write them in **lowercase**.
- Close tags in the **reverse order** you opened them: Hi.
- Save the file with the extension **.html** (or .htm). The home page is usually **index.html**.
- Extra spaces and new lines in the code are shown as **one space**. Use <br> or <p> for new lines.

3. The structure of an HTML document

Every HTML page has the same skeleton. **<!DOCTYPE html>** tells the browser it is HTML5. **<html>** holds the whole page. The **<head>** holds information about the page that is **not shown** on it, such as the **<title>** (the text on the browser tab). The **<body>** holds **everything you see** on the page.

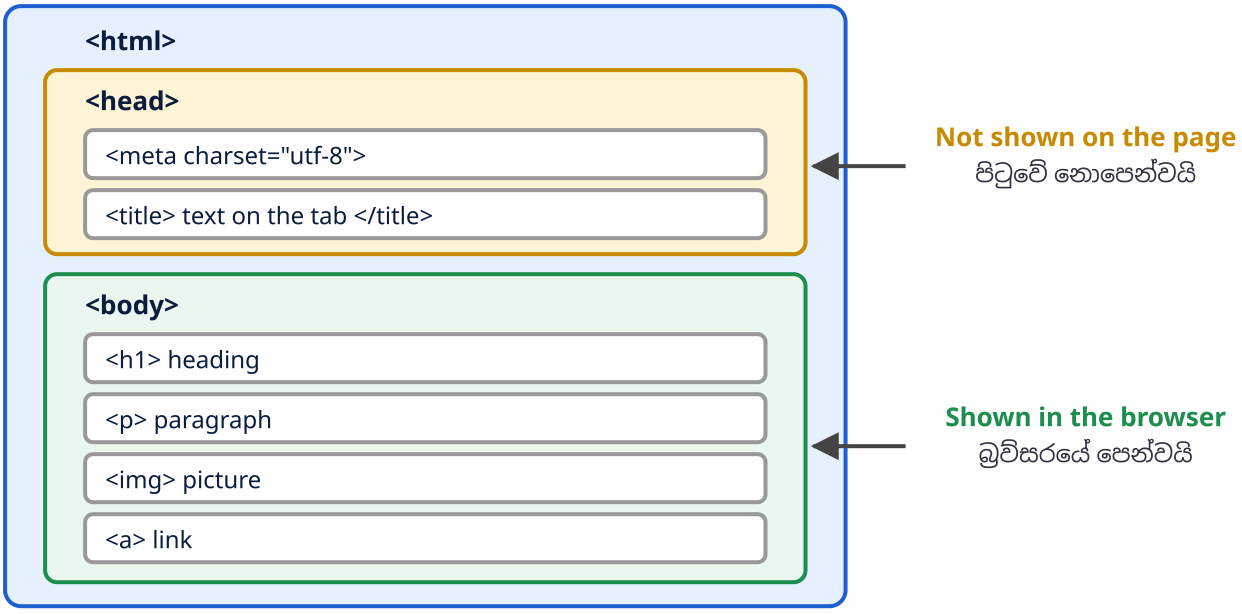


Figure 5.6 – The head holds information about the page; the body holds what is shown.

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HTML: A complete HTML document

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>Sunrise College</title>
</head>
<body>
  <h1>Welcome to Sunrise College</h1>
  <p>We are a mixed school in Kandy.</p>
</body>
</html>
```

▶ **Result in the browser**

Welcome to Sunrise College

We are a mixed school in Kandy.

💡 The title appears on the browser **tab** and in **Google search results**, not on the page itself. Write a clear title for every page.

4. Headings, paragraphs and line breaks

There are six heading levels: **<h1>** (biggest, use once for the main title) down to **<h6>** (smallest). **<p>** makes a paragraph with a space above and below. **
** breaks the line without a new paragraph, and **<hr>** draws a horizontal line across the page. In the examples below the <html>, <head> and <body> tags are left out to keep them short – they go inside <body>.

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HTML: Headings, paragraphs, line breaks and a line

```
<h1>ICT Club</h1>
<h2>Meeting times</h2>
<p>We meet every Wednesday<br>
from 2.00 pm to 3.30 pm<br>
in the computer lab.</p>
<hr>
<p>New members are welcome.</p>
```

▶ **Result in the browser**

ICT Club

Meeting times

We meet every Wednesday
from 2.00 pm to 3.30 pm
in the computer lab.

New members are welcome.

5. Formatting text and colour

Tag	Result
... or ...	Bold (strong = important)
... or ...	Italic (em = emphasis)
<u> ... </u>	Underline
_{...}	Subscript: H_2O
^{...}	Superscript: 2^3
<mark> ... </mark>	Highlight

To change **colour, size or font**, HTML5 uses the **style** attribute (this is **CSS**). Colours can be names (blue, red) or hex codes (#C0304A).

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HTML: Text format and colour

```
<p>This is <b>bold</b>, this is <i>italic</i>
and this is <u>underlined</u>.</p>
<p>H<sub>2</sub>O and 2<sup>3</sup> = 8</p>
<p style="color:blue;">Blue text</p>
<p style="color:#C0304A; font-size:24px;">Big red text</p>
<p style="background-color:yellow;">Yellow background</p>
<p style="font-family:Arial;">Arial font</p>
```

▶ **Result in the browser**

This is **bold**, this is *italic* and this is underlined.

H_2O and $2^3 = 8$

Blue text

Big red text

Yellow background

Arial font

Old HTML 4 (do not use)	HTML5 way (CSS style)	Job
<font color="red">	style="color:red;"	Text colour
<font size="5">	style="font-size:24px;"	Text size
<body bgcolor="yellow">	<body style="background-color:yellow;">	Page background
	style="text-align:center;"	Centre text

💡 Older textbooks and past papers use <font color="red"> and <body bgcolor="yellow">. Know what they mean, but write the **style** version in new pages – <font> and were removed in HTML5.

6. Inserting images

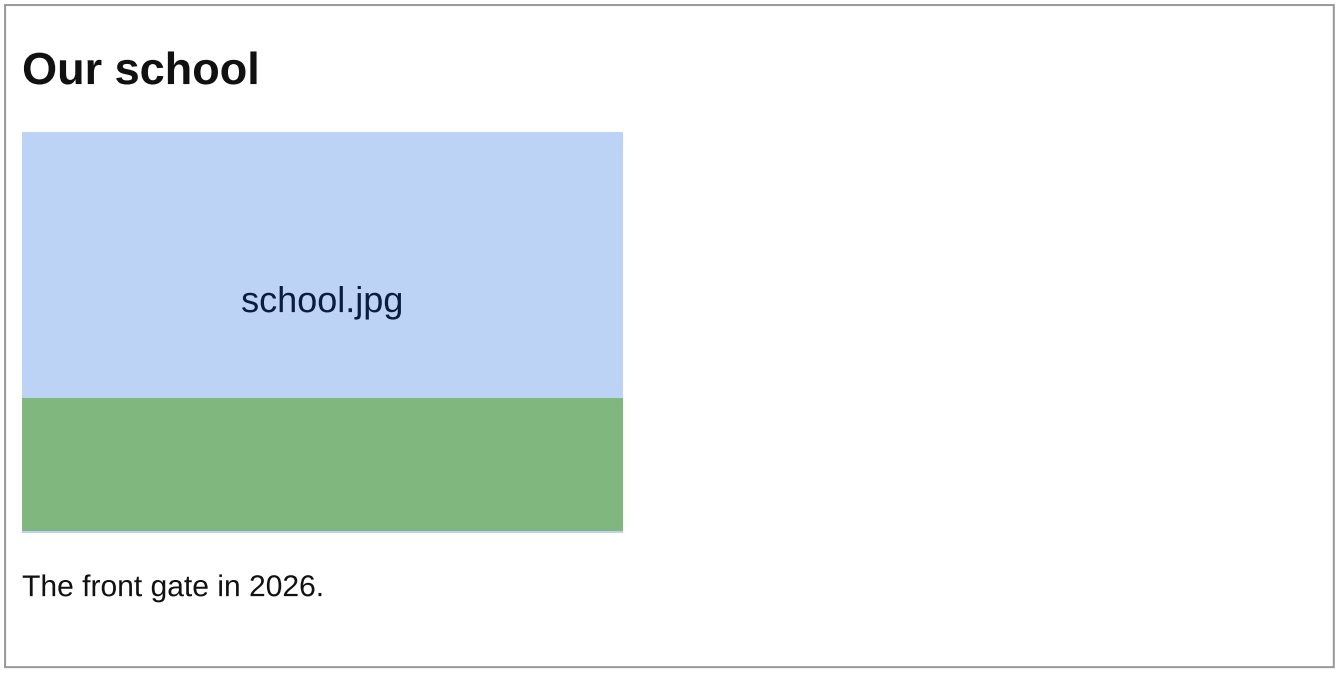
The **<img>** tag puts a picture on the page. It is an empty element. **src** is the file name or address of the picture, **alt** is the text read by screen readers (and shown if the picture cannot load), and **width** and **height** set the size in pixels. Keep the picture in the **same folder** as the page, or write the folder: src="images/school.jpg".

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HTML: Inserting an image

```
<h2>Our school</h2>
<img src="school.jpg" alt="Front gate of Sunrise College"
     width="300" height="200">
<p>The front gate in 2026.</p>
```

▶ **Result in the browser**



7. Hyperlinks

The **<a>** (anchor) tag makes a link. The **href** attribute is where the link goes; the text between <a> and is what the user clicks. An **absolute** link has the full address (https://...). A **relative** link points to a page in your own site (about.html). **target="_blank"** opens a new tab, **mailto:** opens e-mail, and **#name** jumps to a part of the same page that has id="name".

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HTML: Hyperlinks

```
<p><a href="https://www.moe.gov.lk">Ministry of Education</a></p>
<p><a href="about.html">About our school</a></p>
<p><a href="https://www.e-thaksalawa.moe.gov.lk" target="_blank">e-thaksalawa (new tab)</a>
</p>
<p><a href="mailto:info@sunrise.lk">E-mail us</a></p>
<p><a href="#top">Back to top</a></p>
```

▶ **Result in the browser**

Ministry of Education

About our school

e-thaksalawa (new tab)

E-mail us

Back to top

💡 Links are usually **blue and underlined**; a visited link turns **purple**. You can also make a picture a link: put the <img> inside <a> … .

8. Lists

<ul> makes an **unordered list** with bullets (•). **<ol>** makes an **ordered list** with numbers (1, 2, 3). Each item goes in **<li>**. You can put a list inside an <li> to make a **nested list**. Use type="A" or type="i" on <ol> for letters or Roman numbers.

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HTML: Ordered, unordered and nested lists

```
<h3>Clubs</h3>
<ul>
  <li>ICT Club</li>
  <li>Science Club
    <ul>
      <li>Robotics</li>
      <li>Astronomy</li>
    </ul>
  </li>
</ul>
<h3>Steps to log in</h3>
<ol>
  <li>Open the browser</li>
  <li>Type the address</li>
  <li>Enter your password</li>
</ol>
```

▶ **Result in the browser**

Clubs

- ICT Club
- Science Club
  - Robotics
  - Astronomy

Steps to log in

1. Open the browser
2. Type the address
3. Enter your password

9. Tables

A table is built **row by row**. **<table>** holds the table, **<tr>** is one table row, **<th>** is a heading cell (bold and centred) and **<td>** is a data cell. **<caption>** gives the table a title. **colspan="3"** joins three cells across; **rowspan="2"** joins two cells down. border="1" draws the lines (in new pages CSS borders are better).

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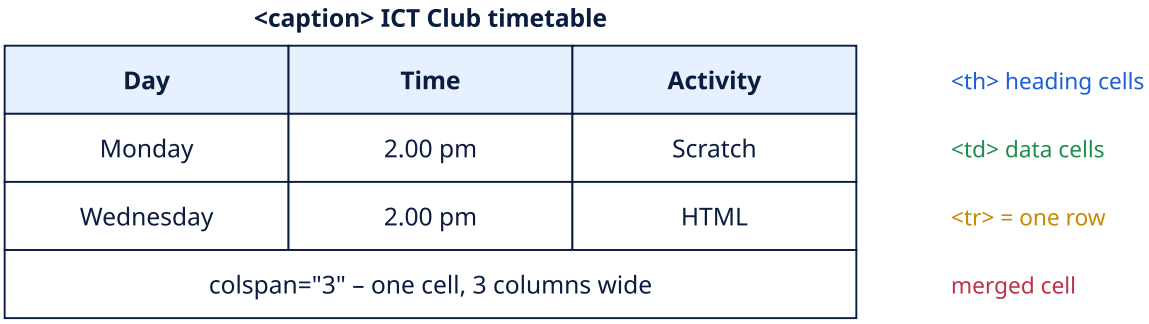


Figure 5.7 – Parts of a table: tr rows, th heading cells, td data cells and a colspan cell.

HTML: A table

```
<table border="1">
  <caption>ICT Club timetable</caption>
  <tr>
    <th>Day</th>
    <th>Time</th>
    <th>Activity</th>
  </tr>
  <tr>
    <td>Monday</td>
    <td>2.00 pm</td>
    <td>Scratch</td>
  </tr>
  <tr>
    <td>Wednesday</td>
    <td>2.00 pm</td>
    <td>HTML</td>
  </tr>
  <tr>
    <td colspan="3">All Grade 10 and 11 students are welcome</td>
  </tr>
</table>
```

▶ Result in the browser

ICT Club timetable

Day	Time	Activity
Monday	2.00 pm	Scratch
Wednesday	2.00 pm	HTML
All Grade 10 and 11 students are welcome		

10. Tag summary

Tag	Use	Empty?
<html>	Whole web page	No
<head>	Information about the page	No

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<title>	Text on the browser tab	No
<body>	Everything shown on the page	No
<h1> … <h6>	Headings (h1 biggest)	No
<p>	Paragraph	No
 	Line break	Yes
<hr>	Horizontal line	Yes
<b> /	Bold / important text	No
<i> /	Italic / emphasis	No
<u>	Underline	No
<img>	Image	Yes
<a>	Hyperlink	No
	Lists	No
<table> <tr> <th> <td>	Tables	No

NEW 2026 **2026:** Modern pages use **HTML5** with **CSS** for all colours and layout. Add <meta name="viewport"> so the page fits phones, always give images **alt** text, and check your code with the free **W3C Validator** (validator.w3.org). AI assistants can write HTML for you, but you must still **read and test** it – they sometimes use old tags.

Key Words

Hypertext – Text with links that jump to other pages.

HTML – HyperText Markup Language: tags that describe a web page.

Tag – A keyword in angle brackets, such as <p>.

Element – Opening tag + content + closing tag.

Empty element – A tag with no closing tag, e.g.
, <img>.

Attribute – Extra information in an opening tag, e.g. src, href.

<head> – Part with page information that is not shown, e.g. the title.

<body> – Part that holds everything shown on the page.

Hyperlink – A clickable link made with <a href>.

Relative link – A link to a file in the same site, e.g. about.html.

<li> – One item in an ordered or unordered list.

colspan – Attribute that joins table cells across columns.

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Sample Q&A

1. What does HTML stand for?

> **Answer:** HyperText Markup Language.

2. What is the difference between <head> and <body>?

> **Answer:** <head> holds page information that is not shown (title); <body> holds what is shown.

3. Write the tag to show the picture cat.png with the alt text “Our cat”.

> **Answer:** <img src="cat.png" alt="Our cat">

4. Write a link to https://www.moe.gov.lk with the text “MOE”.

> **Answer:** MOE

5. Which tags make a numbered list?

> **Answer:** with each item in <li>.

6. What do <tr>, <th> and <td> mean?

> **Answer:** Table row, table heading cell, table data cell.

MCQ

1. HTML stands for

A. Home Tool Markup Language
B. HyperText Markup Language
C. HyperText Making Links
D. High Text Machine Language

2. Text that contains links to other pages is called

A. subtext
B. cipher text
C. plain text
D. hypertext

3. The text on the browser tab comes from the

A. <title> tag
B. <body> tag
C. <h1> tag
D. <p> tag

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4. Which part holds everything shown on the page?

A. <!DOCTYPE html>
B. <body>
C. <title>
D. <head>

5. Which is an empty element (no closing tag)?

A.
B.
C.
D. <b>

6. Which heading is the largest?

A. <h3>
B. <h6>
C. <h1>
D. <head>

7. Which code makes red text in HTML5?

A. Hi
B. Hi
C. Hi
D. <red>Hi</red>

8. In H₂O the 2 is shown

A. underlined
B. bold
C. higher (superscript)
D. lower and smaller (subscript)

9. In <img src="a.jpg" alt="Gate">, alt is

A. a file name
B. an attribute
C. a tag
D. an element

10. Which attribute of <a> gives the link address?

A. href
B. link
C. alt
D. src

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11. target="_blank" in a link makes it

A. open e-mail
B. download a file
C. open in a new tab
D. turn blank

12. Which tag makes a bulleted list?

A.
B. <dl>
C.
D.

13. A table cell that is a heading uses

A. <thead-cell>
B. <th>
C. <td>
D. <tr>

14. To join three cells across one row, use

A. rowspan="3"
B. cols="3"
C. merge="3"
D. colspan="3"

15. How many <td> cells are in the ICT Club timetable example?

A. 6
B. 3
C. 7
D. 9

Structured Questions

1. Write the basic structure of an HTML5 page with the title “My Club”. *(2 marks)*

> <!DOCTYPE html> <html lang="en"> <head> <meta charset="utf-8"> <title>My Club</title> </head> <body> … </body> </html>

2. Give two differences between hypertext and normal text. *(2 marks)*

> Hypertext has links and can be read in any order; normal text has no links and is read start to end. Hypertext can also include images, audio and video.

3. Write HTML for an ordered list of three fruits. *(2 marks)*

> Mango Banana Papaya

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4. Write HTML to show photo.jpg 200 pixels wide, and make it a link to gallery.html. *(2 marks)*

> <img src="photo.jpg" alt="Photo" width="200">

5. Explain the use of <tr>, <th>, <td> and colspan in a table. *(4 marks)*

> <tr> starts a row; <th> is a bold heading cell; <td> is a normal data cell; colspan makes one cell stretch across several columns.

Summary

- Hypertext = text with links; HTML = HyperText Markup Language (tags, not a program).
- Element = <tag> content </tag>; empty elements: <br>, <hr>, <img>.
- Structure: <!DOCTYPE html>, <html>, <head> + <title>, <body>.
- Headings <h1>–<h6>; <p> paragraph;
 line break; <hr> line.
- <b>, <i>, <u>, <sub>, <sup>; colour with style="color:...".
- <img src alt width height>; always give alt text.
- <a href>: absolute, relative, mailto:, #id, target="_blank".
- / + ; <table>, <tr>, <th>, <td>, colspan, rowspan.

MCQ answer key – 5.2

1. **B** – Hypertext + markup (tags) language.
2. **D** – Hypertext has hyperlinks.
3. **A** – <title> is in the head and shows on the tab.
4. **B** – The body is the visible part.
5. **A** –
 only breaks the line, so it has no content.
6. **C** – h1 is the biggest; h6 the smallest.
7. **A** – HTML5 uses the CSS style attribute.
8. **D** – <sub> is subscript.
9. **B** – alt gives extra information inside the tag.
10. **A** – href = hypertext reference.
11. **C** – _blank means a new tab or window.
12. **C** – ul = unordered list with bullets.
13. **B** – th = table heading cell.
14. **D** – colspan joins columns across.
15. **C** – Two rows of 3 data cells + 1 colspan cell = 7.

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G.C.E. O/L Grade 11 ICT · Lesson 5

5.3 Web Development Tools: Authoring Tools, Static and Dynamic Websites, CMS

Syllabus 14.3. You do not have to type every tag by hand. In this note you will meet **web authoring tools** – text editors, **WYSIWYG** editors, website builders and a **Content Management System (CMS)** like WordPress. You will learn how they help with **text, layout, multimedia and links**, the difference between **static and dynamic** websites, and how a team of **Creators, Editors, Publishers, Administrators and Users** works together on a CMS.

1. What is a web authoring tool?

A **web authoring tool** is software used to **create and edit web pages**. Some let you type the code; others let you design visually and write the code for you. All of them save pages as HTML (with CSS and pictures) that a browser can show.

Type	Examples	How it works
Text editor	Notepad, Notepad++, VS Code	You type the HTML code yourself
WYSIWYG editor	Dreamweaver, BlueGriffon, Google Sites	Design like a word processor; code is made for you
CMS	WordPress, Joomla, Drupal	Add content in a dashboard; many people can work together
Website builder (AI)	Wix, Google Sites, WordPress AI	Drag and drop; AI can draft pages from a prompt

2. Text editor or WYSIWYG?

WYSIWYG means **What You See Is What You Get**. You type, add pictures and drag boxes like in a word processor, and the tool writes the HTML. Most WYSIWYG tools have a **Design view**, a **Code view** and a **Split view** (both). A **text editor** gives full control and teaches you HTML, but is slower for beginners.

	Text editor	WYSIWYG editor
Skill needed	Must know HTML	Little or no HTML
Speed	Slower to build	Fast to build
Control of code	Full, clean code	Extra code may be added
Examples	Notepad, VS Code	Dreamweaver, BlueGriffon

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3. What the tools help you do

Text formatting පෙළ හැඩගැන්වීම	**Page layout** පිටු පිරිසැලසුම
Multimedia බහුමාධ්‍ය	**Hyperlinks** අධිසබැඳි
Preview පෙරදසුන	**Upload** Upload

4. Page layout with HTML5 and CSS

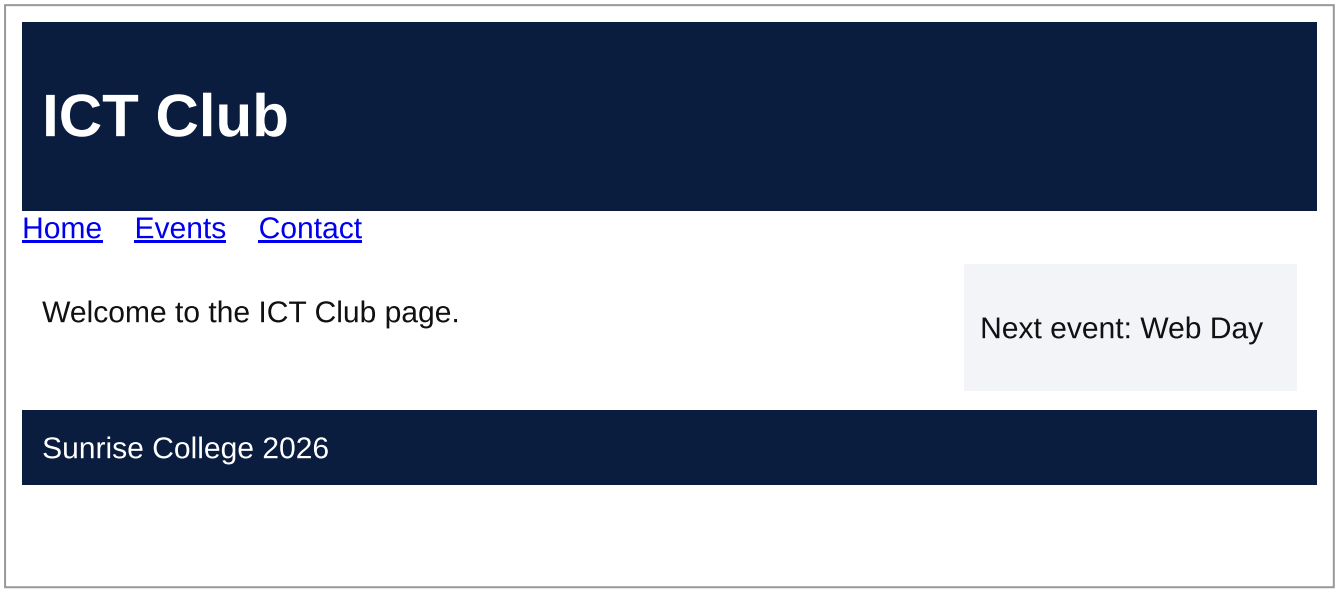
HTML5 has **meaning (semantic) tags** for the parts of a page: **<header>, <nav>, <main>, <aside>** and **<footer>** – the same boxes as the wireframe in note 5.1. **CSS** then places them. The example below puts main and aside **side by side on a computer**, and the @media rule puts them **one under the other on a phone**. This is called **responsive design**.

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HTML: A page layout that works on phones (HTML5 + CSS)

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <title>ICT Club</title>
  <style>
    body { margin: 0; font-family: Arial, sans-serif; }
    header, footer { background: #0B1D3F; color: white; padding: 10px; }
    nav a { margin-right: 12px; }
    .box { display: flex; gap: 10px; padding: 10px; }
    main { flex: 3; }
    aside { flex: 1; background: #F2F4F8; padding: 8px; }
    @media (max-width: 600px) { .box { flex-direction: column; } }
  </style>
</head>
<body>
  <header><h1>ICT Club</h1></header>
  <nav><a href="#">Home</a> <a href="#">Events</a> <a href="#">Contact</a></nav>
  <div class="box">
    <main><p>Welcome to the ICT Club page.</p></main>
    <aside><p>Next event: Web Day</p></aside>
  </div>
  <footer>Sunrise College 2026</footer>
</body>
</html>
```

▶ **Result in the browser**



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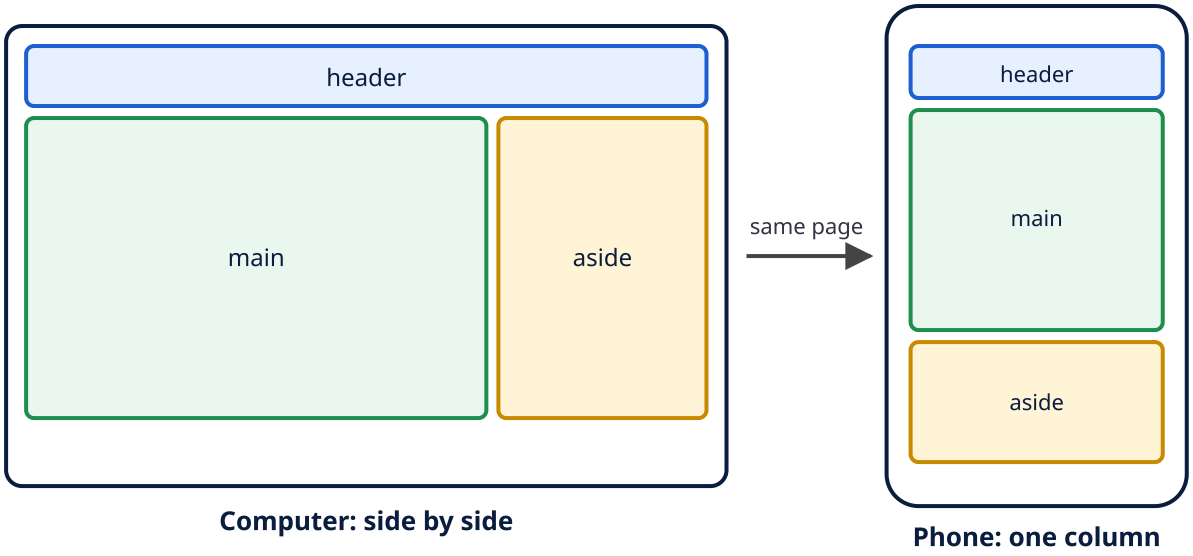


Figure 5.8 – Responsive design: the same page shows two columns on a computer and one column on a phone.

5. Multimedia building blocks

HTML5 can play sound and video **without plug-ins** (Flash is gone). **<audio controls>** shows a play bar for MP3 files and **<video controls>** shows a video player for MP4 files. You can also **embed** a YouTube video or a Google Map using the code the site gives you (an <iframe>).

HTML: Audio and video in HTML5

```
<h3>School song</h3>
<audio controls src="song.mp3"></audio>
<h3>Sports meet 2026</h3>
<video controls width="320" src="sports.mp4"></video>
```

▶ **Result in the browser**

School song

0:00 / 0:00

Sports meet 2026

0:00

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> 💡 Keep big videos on **YouTube** and embed them. This saves space on your own web host and plays smoothly on phones.

6. Static and dynamic websites

A **static website** sends the **same HTML file** to every visitor. To change it you edit the file and upload it again. A **dynamic website** builds the page **when someone asks for it**, using a **server program** (PHP, Python, Node.js) and a **database**. That is how the exam results site shows **your** result, or a shop shows **your** cart.

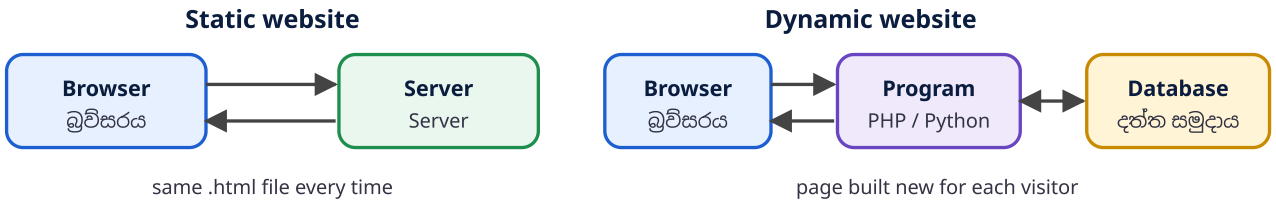


Figure 5.9 – A static site sends a ready file; a dynamic site builds the page from a program and a database.

	Static	Dynamic
Content	Same for every visitor	Can change for each visitor or time
Made with	HTML and CSS files	HTML + server program (PHP, Python) + database
Updating	Edit the file and upload again	Change content in the database / dashboard
Speed and cost	Fast, cheap hosting	Needs a server program and database
Example	A one-page club poster site	Exam results, online shop, Facebook

7. Content Management System (CMS)

A **CMS** is software on the web server that lets people **create, edit and publish content without writing HTML**. You log in to a **dashboard**, write a post like an e-mail, add photos and click **Publish**. The **design (theme)** is kept separate from the **content**, so the whole site can get a new look in minutes. Popular CMSs: **WordPress** (used by about 4 in 10 websites), **Joomla** and **Drupal**. A CMS site is a **dynamic** site.

- Many people can work on the site at the same time, each with their own login.
- **Themes** change the look; **plugins** add features (contact form, gallery, Sinhala and English).
- Content is stored in a **database**, so search and menus update by themselves.

8. Workflow – create, edit, publish, use

In a CMS, content moves through a **workflow**. A post starts as a **draft**, is checked, approved and then goes **live** for everyone to read. Later it is updated or removed.

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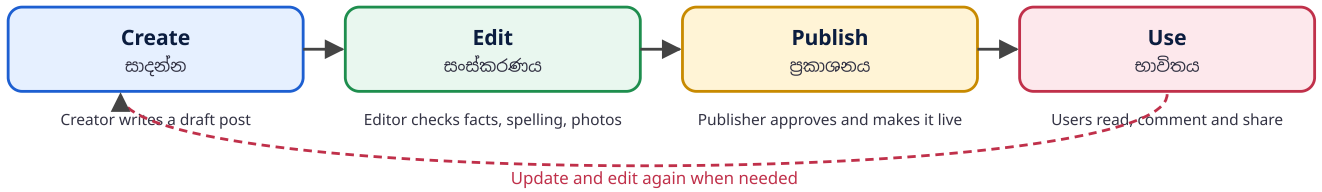


Figure 5.10 – Content workflow in a CMS: create, edit, publish and use, then update.

9. Roles and permissions

Each person gets a **role**. The role decides what they are **allowed** to do. This keeps the site safe – a student reporter cannot delete the whole site. In the school site: the **ICT club members** are Creators, the **ICT teacher** is the Editor, the **deputy principal** is the Publisher, the **web master** is the Administrator, and **students and parents** are Users.

Role	Create	Edit others	Publish	Manage site	Read
Creator	✔	–	–	–	✔
Editor	✔	✔	–	–	✔
Publisher	✔	✔	✔	–	✔
Administrator	✔	✔	✔	✔	✔
User	–	–	–	–	✔

💡 Exam tip: **Administrator** has **all** powers (users, themes, plugins, settings). **User** (visitor) can only **read** and comment. In WordPress the roles are called Contributor, Author, Editor and Administrator.

10. Website builders and AI

NEW 2026 **2026: Website builders** such as **Wix, Google Sites and Squarespace** let you build a site with drag and drop and host it for you. Many now have **AI**: you type “a website for our school ICT club with events and a gallery” and the AI drafts pages, text and colours in a minute. WordPress also has AI writing and image tools. AI is a good **start**, but a person must **check facts, spelling, photos and accessibility** before publishing.

Key Words

Web authoring tool – Software used to create and edit web pages.

WYSIWYG – What You See Is What You Get: design visually, code made for you.

Text editor – A program where you type HTML code yourself (Notepad).

Semantic tag – An HTML5 tag that names a page part, e.g. <nav>.

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Responsive design – A layout that changes to fit phones, tablets and computers.	**Static website** – Shows the same fixed pages to every visitor.
Dynamic website – Builds pages using a server program and a database.	**CMS** – Content Management System: manage site content without HTML.
Theme – A ready design that controls the look of a CMS site.	**Plugin** – An add-on that gives a CMS a new feature.
Workflow – The steps content goes through: create, edit, publish, use.	**Administrator** – The CMS role with full control of the site and users.

Sample Q&A

1. What does WYSIWYG mean?

> **Answer:** What You See Is What You Get.

2. Give one advantage of a text editor over a WYSIWYG editor.

> **Answer:** Full control and clean code (and you learn HTML).

3. What is the difference between a static and a dynamic website?

> **Answer:** Static shows the same files to all; dynamic builds pages from a program and database.

4. Name two CMS programs.

> **Answer:** WordPress, Joomla (or Drupal).

5. List the four workflow steps in a CMS.

> **Answer:** Create, edit, publish, use.

6. Which role can add new users and plugins?

> **Answer:** The Administrator.

MCQ

1. Software used to create and edit web pages is a

A. web authoring tool
B. web browser
C. web server
D. search engine

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2. WYSIWYG stands for

A. Write Your Site In Web Graphics
B. What You Save Is What You Give
C. What You See Is What You Get
D. Web Years Site In Your Group

3. Which is a text editor, not a WYSIWYG tool?

A. Notepad
B. Dreamweaver Design view
C. Google Sites
D. Wix

4. Which HTML5 tag is for the site menu?

A. <footer>
B. <nav>
C. <menu-bar>
D. <aside>

5. A layout that changes to fit a phone screen is

A. encrypted
B. linear
C. responsive
D. static

6. The meta tag needed for a page to fit phones is

A. <meta charset="utf-8">
B. <meta name="author" ...>
C. <meta name="phone" ...>
D. <meta name="viewport" ...>

7. To show a video player in HTML5 use

A. <embed flash>
B. <movie>
C. <video controls>
D. <img src="film.mp4">

8. A website that shows each student their own exam result is

A. offline
B. linear
C. static
D. dynamic

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9. A static website is best when

A. you sell products online
B. the content rarely changes
C. you need a database
D. users log in

10. Which is a Content Management System?

A. WordPress
B. Google Chrome
C. FileZilla
D. Notepad

11. In a CMS the look of the site is changed with a

A. database
B. theme
C. domain
D. plugin only

12. The correct CMS workflow order is

A. Edit → Use → Create → Publish
B. Use → Publish → Edit → Create
C. Create → Edit → Publish → Use
D. Publish → Create → Edit → Use

13. Who approves content and makes it live?

A. Publisher
B. Visitor counter
C. Creator
D. User

14. Which role can only read the content?

A. Editor
B. Publisher
C. Administrator
D. User

15. An AI website builder should be used

A. to replace the web host
B. as a start, then checked by a person
C. without checking anything
D. only for passwords

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Structured Questions

1. Compare a text editor and a WYSIWYG editor (two points) and name one example of each. *(2 marks)*

> Text editor: you type HTML, full control, slower (Notepad). WYSIWYG: design visually, code made for you, faster (Dreamweaver).

2. Give two differences between static and dynamic websites with an example of each. *(2 marks)*

> Static: same content for all, plain HTML files (club poster site). Dynamic: content changes per visitor, uses a server program and database (exam results, online shop).

3. What is a CMS? Give two advantages for a school. *(3 marks)*

> Software to create, edit and publish web content without HTML. Advantages: teachers can post news easily; many users with roles; themes change the look quickly.

4. Describe the jobs of the Creator, Editor, Publisher, Administrator and User in a CMS. *(4 marks)*

> Creator writes drafts; Editor checks and edits content; Publisher approves and publishes; Administrator manages users, themes, plugins and settings; User reads and comments.

5. Name the five HTML5 semantic tags for page parts and say what each holds. *(4 marks)*

> <header> logo and title; <nav> menu links; <main> main content; <aside> side box; <footer> contact and copyright.

Summary

- Authoring tools: text editor, WYSIWYG, CMS, website builder.
- WYSIWYG = What You See Is What You Get (Design, Code, Split views).
- Tools help with text, layout, multimedia, links, preview, upload.
- HTML5 layout: <header>, <nav>, <main>, <aside>, <footer> + CSS; responsive with @media.
- <audio controls> and <video controls> play media without plug-ins.
- Static = same files for all; dynamic = program + database.
- CMS (WordPress, Joomla, Drupal): themes, plugins, dashboard.
- Workflow: create → edit → publish → use; roles: Creator, Editor, Publisher, Administrator, User.

MCQ answer key – 5.3

1. **A** – Authoring tools make pages; browsers only show them.

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2. **C** – You design and see the result as you work.
3. **A** – In Notepad you type the code yourself.
4. **B** – nav = navigation links.
5. **C** – Responsive design uses CSS media queries.
6. **D** – viewport sets the page width to the device width.
7. **C** – The video element with controls shows play, pause and volume.
8. **D** – It builds the page from a database for each visitor.
9. **B** – Fixed content suits simple HTML files.
10. **A** – WordPress manages content from a dashboard.
11. **B** – Themes control design; content stays the same.
12. **C** – Write, check, make live, read.
13. **A** – The Publisher can publish.
14. **D** – Users (visitors) only read and comment.
15. **B** – AI drafts can have wrong facts or poor accessibility.

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G.C.E. O/L Grade 11 ICT · Lesson 5

5.4 Publishing a Website: Domain Names, Web Hosting, Uploading and Maintenance

Syllabus 14.4. A website on your own computer can be seen only by you. To let the whole world see it, you must **publish** it: get a **domain name**, rent space from a **web hosting** company (often an **ISP**), **upload** the files, switch on **HTTPS** and test it. After that the work is not over – a good site needs regular **maintenance**. This note explains each step with the Sunrise College site.

1. What does publishing mean?

Publishing a website means copying its files to a **web server** – a computer that is always on and connected to the Internet. When someone types your address, their browser asks the web server and it sends the pages back.



Figure 5.11 – The five steps to publish a website.

2. Domain names

A **domain name** is the easy-to-remember name of a website, such as **sunrise.lk**. Behind it is an **IP address** (numbers like 203.0.113.10). The **DNS** (Domain Name System) changes the name into the IP address, like a phone book. You **register** a domain for a yearly fee; Sri Lankan **.lk** names are registered with **LK Domain Registry**.

Ending	Meaning
.com	Company / general
.org	Organisation
.lk	Sri Lanka
.edu.lk	Sri Lankan education
.gov.lk	Sri Lankan government

3. Web hosting and ISPs

Web hosting is renting space on a web server so your site is online all day, every day. An **Internet Service Provider (ISP)** such as **SLT-Mobitel** or **Dialog** gives Internet connections, and many ISPs and hosting companies also sell **web hosting** plans. When you choose a plan, check the **storage**

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space, the **bandwidth** (data sent to visitors each month), **uptime** (for example 99.9%), **e-mail accounts**, free **SSL (HTTPS)**, **backups** and **support**.

Type of hosting	Features
Free hosting	No cost; adverts, little space, sub-domain
Shared hosting	Many sites on one server; cheap; good for schools
VPS / cloud	Own share of a server; grows with visitors
Dedicated server	A whole server for one site; costly

4. How much space does the school site need?

Add up the size of all files. Then compare with the hosting plan (1 GB = 1,048,576 KB).

Files	Count	Size each	Total
HTML pages	12	40 KB	480 KB
Photos	80	250 KB	20,000 KB
Videos	4	25,600 KB	102,400 KB
All files	96	–	122,880 KB = 120 MB

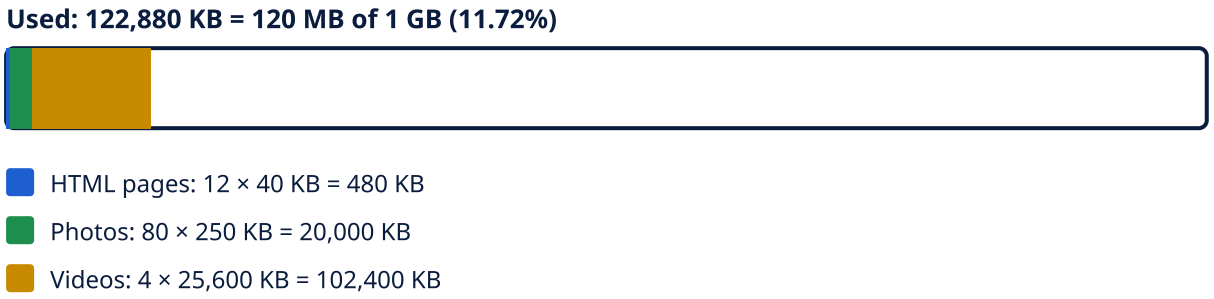


Figure 5.12 – The school site uses 120 MB, only 11.72% of a 1 GB plan. Videos take the most space.

Upload time: 120 MB = 960 megabits. At 8 Mbps: 960 ÷ 8 = **120 seconds** (= 2 minutes). **Bandwidth:** if 3,000 visitors each load 2 MB in a month, the site sends 3,000 × 2 = **6,000 MB** (about 6 GB).

> 💡 Remember: **1 byte = 8 bits**, so MB × 8 = megabits. Internet speed is in **bits** per second (Mbps), file size is in **bytes**.

5. Uploading the files

The host gives you a login. You upload the files to the server folder (often **public_html**) using one of these ways. Keep the **same folders and file names** you used on your computer, or the links and pictures will break. File names should be **lowercase with no spaces** (about-us.html, not About Us.html).

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FTP / SFTP program FTP / SFTP වැඩසටහන	**Host file manager** Host file manager
CMS dashboard CMS dashboard	**Git / builder** Git / builder

6. HTTPS and testing

HTTPS encrypts the data between the visitor and the server, using an **SSL/TLS certificate**. Browsers show a **padlock** and warn people about sites without it. Most hosts give a **free certificate** (Let's Encrypt). After uploading, **test** the site: open every page on a phone and a computer, click every link, check pictures, forms and spelling, and check the speed.

7. Making the site easy to find

- Give every page a clear **<title>** and a short description – this is what Google shows.
- Add the site to **Google Search Console** so Google finds all pages (this is part of **SEO**, search engine optimisation).
- Share the link on the school social media pages and in letters to parents.

8. Maintaining a website

Maintenance means keeping the site **correct, working and safe** after it is published. An old site with last year's dates makes people stop visiting. Make a timetable and share the jobs among the team.

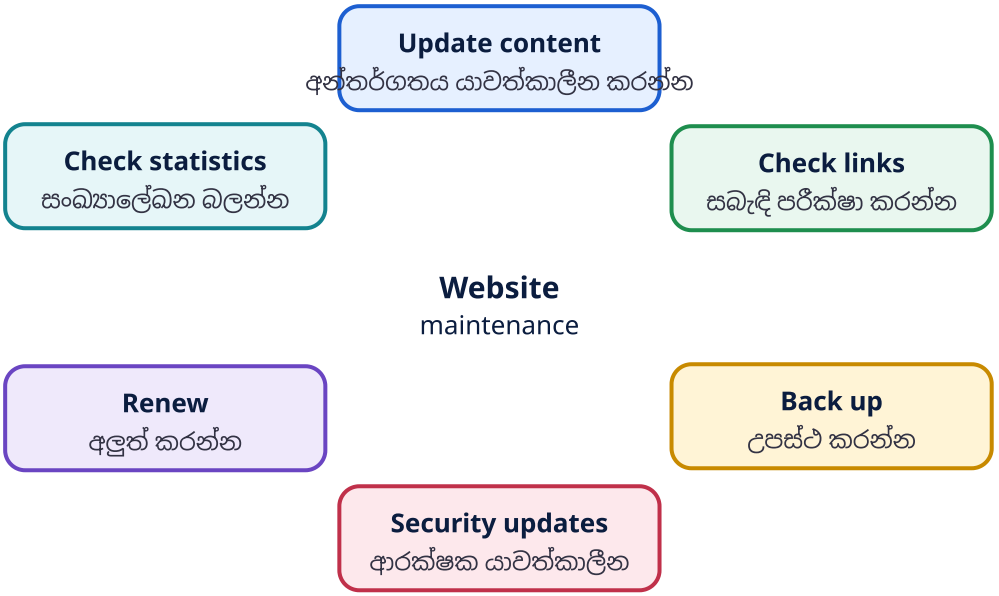


Figure 5.13 – Website maintenance is a cycle of regular jobs.

Job	What to do

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Update content	News, dates, results
Check links	Fix broken links (404)
Back up	Copy files and database
Security updates	Update CMS, plugins, passwords
Renew	Domain, hosting and SSL
Check statistics	Visitors, speed, errors

💡 A **404 error** (“Page not found”) means a link points to a page that is missing or was renamed. Check links after every change.

9. Safe and legal publishing

- Get **permission** before putting students’ photos or names online.
- Never publish phone numbers, home addresses or marks of individual students.
- Use strong passwords and **two-step verification** for the hosting and CMS logins.
- Respect **copyright**: use your own or licensed media and give credit.

NEW 2026 **2026:** Many school and personal sites now use **free static hosting** (GitHub Pages, Netlify, Cloudflare Pages) with free HTTPS, or a website builder that hosts for you. Google ranks sites by **mobile speed and HTTPS**, so small images and a padlock matter. AI tools can check broken links, suggest alt text and write page descriptions, but a person should review them.

Key Words

Publishing – Copying website files to a web server so anyone can see them.

Web server – A computer, always online, that sends web pages to browsers.

Domain name – The easy name of a website, e.g. sunrise.lk.

DNS – Domain Name System: changes domain names into IP addresses.

Web hosting – Renting space on a web server for a website.

ISP – Internet Service Provider: gives Internet access and often hosting.

Bandwidth – The amount of data a site may send to visitors each month.

Uptime – The percentage of time a site is online.

FTP – File Transfer Protocol: used to upload files to a server.

HTTPS – Secure HTTP: encrypts data using an SSL/TLS certificate.

Maintenance – Keeping a site up to date, working and safe.

404 error – Page not found: a broken or wrong link.

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Sample Q&A

1. What is web hosting?

> **Answer:** Renting space on a web server so the site is online all the time.

2. What does DNS do?

> **Answer:** It changes a domain name into the IP address of the server.

3. How big are all the school site files?

> **Answer:** 122,880 KB = 120 MB.

4. How long does the upload take at 8 Mbps?

> **Answer:** 120 × 8 = 960 megabits ÷ 8 = 120 seconds.

5. Why should a website use HTTPS?

> **Answer:** It encrypts data, shows a padlock and browsers trust it.

6. Give three website maintenance jobs.

> **Answer:** Any three: update content, check links, back up, security updates, renew domain and hosting, check statistics.

MCQ

1. Publishing a website means

A. copying its files to a web server
B. e-mailing the code to friends
C. saving it on a pen drive
D. printing every page

2. Which changes sunrise.lk into an IP address?

A. FTP
B. DNS
C. HTML
D. CMS

3. Which domain ending is for Sri Lankan education?

A. .com
B. .org
C. .edu.lk
D. .gov.lk

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4. Renting space on a server so a site is always online is

A. web browsing
B. web design
C. web hosting
D. web searching

5. SLT-Mobitel and Dialog are examples of

A. search engines
B. browsers
C. CMSs
D. ISPs

6. The total size of the school site files is

A. 100 MB
B. 1 GB
C. 120 MB
D. 19.53 MB

7. Which files take the most hosting space?

A. HTML pages
B. CSS files
C. Photos
D. Videos

8. Uploading 120 MB at 8 Mbps takes about

A. 120 seconds
B. 960 seconds
C. 15 seconds
D. 8 seconds

9. The data a host lets your site send to visitors each month is

A. storage
B. bandwidth
C. uptime
D. domain

10. A program used to upload files to a web server is

A. FileZilla (FTP)
B. Audacity
C. Excel
D. Notepad

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11. The padlock in the address bar means the site uses

A. HTML4
B. FTP
C. DNS only
D. HTTPS

12. A 99.9% uptime means the site is

A. 99.9% faster
B. visited by 99.9% of people
C. online almost all the time
D. 99.9% full

13. A "404 Page not found" error is fixed by

A. correcting the broken link
B. buying more storage
C. changing the colour scheme
D. adding more videos

14. Which is a website maintenance job?

A. Choosing the audience
B. Backing up files and the database
C. Writing the purpose
D. Drawing the first wireframe

15. Before putting a student photo on the school site you should

A. remove the alt text
B. get permission
C. add the home address
D. make it bigger

Structured Questions

1. List the steps to publish a website. *(4 marks)*

> Make and test the files; register a domain name; choose a web host (ISP); upload with FTP or the file manager; switch on HTTPS and test online.

2. Give four things to check when choosing a web hosting plan. *(2 marks)*

> Storage space, bandwidth, uptime, free SSL, e-mail accounts, backups, support, price (any four).

3. Calculate the space needed for the school site and the percentage of a 1 GB plan used. *(2 marks)*

> 12 × 40 + 80 × 250 + 4 × 25,600 = 122,880 KB = 120 MB; 122,880 ÷ 1,048,576 × 100 = 11.72%.

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4. What is the role of an ISP in publishing a website? *(2 marks)*

> It connects users and servers to the Internet, and often rents web hosting space, domain names and e-mail.

5. Why is website maintenance needed? Give three tasks. *(2 marks)*

> To keep the site correct, working and safe so visitors return. Tasks: update content, fix broken links, back up, install security updates, renew domain/hosting.

Summary

- Publish = copy files to a web server that is always online.
- Domain name (sunrise.lk) → DNS → IP address.
- Web hosting from ISPs or hosting companies: storage, bandwidth, uptime, SSL.
- Hosting types: free, shared, VPS/cloud, dedicated.
- School site: 120 MB of 1 GB; upload 120 s at 8 Mbps.
- Upload with FTP/SFTP (FileZilla), file manager or CMS; keep folders and names.
- HTTPS padlock; test on phone and PC; add to Google Search Console.
- Maintain: update, check links, back up, security, renew, statistics.

MCQ answer key – 5.4

1. **A** – Files on a web server can be seen by anyone online.
2. **B** – DNS works like a phone book for the Internet.
3. **C** – .edu.lk = education in Sri Lanka.
4. **C** – A host keeps your files online 24 hours a day.
5. **D** – They are Internet Service Providers.
6. **C** – 122,880 KB ÷ 1024 = 120 MB.
7. **D** – 4 videos × 25,600 KB = 102,400 KB.
8. **A** – Change MB to megabits (× 8), then divide by the speed.
9. **B** – Bandwidth = data transferred.
10. **A** – FileZilla is an FTP/SFTP program.
11. **D** – HTTPS encrypts data with SSL/TLS.
12. **C** – Uptime is the share of time the server is working.
13. **A** – 404 means the link points to a missing page.
14. **B** – The others are planning steps done before building.
15. **B** – Privacy and safety come first.

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