

# Computing Year 8 Unit: Computing systems

## Keyword

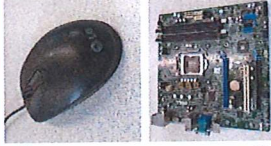
## Definition

Logic programming	A type of computer programming that is based on formal logic rules
Hardware	Physical items in computing
Software	Non-physical items e.g. programs
Artificial Intelligence	Any machine that performs tasks that typically require intelligence in humans
Machine learning	A type of AI in which a range of techniques are used to attempt to imitate the way that humans learn
Boolean	AND OR NOT
Logical operators	+ - = > < >= <= !=

## Threshold concept—

- Understand the purpose of Boolean logic
- Understand the definition of hardware and software and the differences between them
- Understand what an instruction is
- Understand what execute means in computing terms

**Hardware** can be **internal** (inside the PC/laptop/mobile phone case) or **external** (outside the case).



**External hardware** examples:

- Mouse
- Keyboard

**Internal hardware** examples:

- CPU (Central processing unit)
- Processor
- Motherboard

Software can be placed into two categories: system software and application software based on the task(s) it performs.

**Application software** is designed to perform tasks that the user wants to complete.

Examples include:

Word processors, Spreadsheet software, Presentation software, Web browsers, Games

**System software** is designed to control the hardware of the computer. It provides an interface between the hardware and the application software.

The computer's operating system is an example of system software. It performs tasks such as memory management and processor scheduling which are necessary for the application software to run. Examples of operating systems include:

Windows, MacOS, iOS



Artificial intelligence (AI) today



A picture "painted" by an AI

AI today mostly focuses on individual aspects of intelligent behaviour.

Examples include:

- Game playing (Chess, Go)
- Deep Fakes
- Image recognition
- Facial recognition
- Natural language processing
- Targeted advertising
- Spam filtering

Machine learning (ML)



Tesla engineers have made use of machine learning in the development of their self driving cars

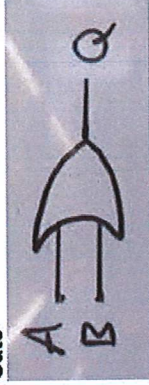
There are several different approaches that can be taken to machine learning.

One is "supervised learning". This is where the machine is provided with examples to learn from.

Another approach is "reinforcement learning". This is where the machine is provided with feedback on its attempts to perform a task and it then uses this feedback to improve.

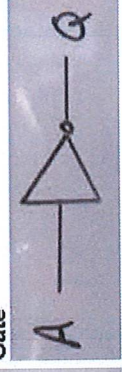
OR

Gate



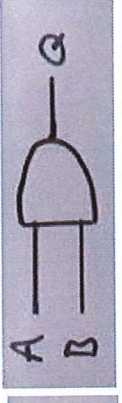
NOT

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AND

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# Computing Year 8 Unit: Developing for the web

## Keyword

## Definition

HTML	Hyper Text Markup Language. The language used to write and display web
HTML Tag	Used to define a HTML element (part of a page) such as a paragraph or heading
Modify	To change
Head	The head of a HTML page is a container for metadata (data about data)
Body	The body of a HTML web page is the part where the visible content goes
CSS	Cascading style sheets (CSS) is the language that is used to format and style
Hyperlink	A link in a document or webpage that
Browser	A program (such as Google Chrome, Mozilla Firefox or Microsoft Edge) which can understand HTML, CSS and JavaScript code and display a website
Search term	A word that the user types into a search engine as part of a search query

## Threshold concept—

- Describe what HTML is
- Describe what CSS is
- Describe what the WWW and the Internet are
- Create a basic website

### HTML Tags

HTML tags help the browser to know how to display a web page to the user.

HTML tags within the `<body></body>` tags define how the content of a page should be rendered by the browser.

HTML tags elsewhere, particularly those within the `<head></head>` tags are used for metadata, which is data about data. For example, in the `head` tags may contain the title of the web page.

### Headings

Heading tags tell the browser to format the text within them in bold and a larger font size. This means that the text can then be used as a paragraph heading.

`<h1></h1>` tags produce the heading with the largest font size.

`<h2></h2>` tags produce the heading with the smallest font size.

`h2`, `h3`, `h4` and `h5` tags produce headings with font sizes in between `h1` and `h6`.

**Example:** The code `<h1>Learning HTML</h1>` produces this result in the browser.

### Paragraphs

The `<p></p>` tag tells the browser that the text in between the tags should be formatted as one paragraph.

### Bold text

The `<b></b>` tag can be used to make text bold.

### Adding images

Images can be added to HTML pages using the `img` tag. This is an example of a self-closing tag. This is because, unlike the majority of HTML tags, a closing tag is not required.

### Example:

```

<h1>Learning HTML</h1>
```

```
<!DOCTYPE html>
<html>
  <head>
    <title>My first website</title>
  </head>
  <body>
    <h1>My first website</h1>
    <p>My first paragraph.</p>
  </body>
</html>
```

