



HTML-5



- 
- Uses a **markup system** composed of elements which represent specific content.
 - Markup means that with HTML you declare **what** is presented to a viewer, not **how** it is presented.
 - Visual representations are defined by Cascading Style Sheets (**CSS**) and released by browsers.
 - HTML is sometimes called a programming language but it has no **logic**, so is a markup language.

- 
- HTML tags provide **semantic** meaning and **machine-readability** to the content in the page.
 - An element usually consists of an opening tag (`<element_name>`), a closing tag (`</element_name>`), which contain the element's name surrounded by angle brackets, and the content in between:
`<element_name>...content...</element_name>`

Elements



- Element names can be thought of as **descriptive keywords** for the content they contain, such as video, audio, table, footer.
- A HTML page may consist of potentially **hundreds** of elements which are then read by a web browser, interpreted and rendered into human readable or audible content on the screen.
- For this document it is important to note the **difference** between elements and tag
- Elements: video, audio, table, footer
- Tags: <video> ,<audio> ,<table> ,<footer> ,</html>,</body>


```
<!DOCTYPE html>
<html lang="en">

  <head>
    <meta charset="UTF-8">
    <title>Hello!</title>
  </head>

  <body>
    <h1>Hello World!</h1>
    <p>This is a simple paragraph.</p>
  </body>

</html>
```

- Defines the HTML version used in the document.
- Lang-ISO lang codes. 2 or 3 letters.
- Meta-The charset attribute declares the character encoding. Modern HTML documents should always use UTF-8, even though it is not a requirement.
- Text written between this opening and the closing tag (</title>) will be displayed on the tab of the page or in the title bar of the browser.

Browser Support



- Latest versions of *Apple Safari*, *Google Chrome*, *Mozilla Firefox*, and *Opera* all support many HTML5 features .
- Mobile web browsers that come pre-installed on *iPhones*, *iPads*, and *Android* phones all have excellent support for HTML5.

New Features

- New Semantic Elements
 - `<header>`, `<footer>`, `<section>`...
- Forms 2.0 – Improvements to HTML web forms where new attributes have been introduced for `<input>` tag.
- Persistent Local Storage – To achieve without resorting(depending) to thirdparty plugins

...

- WebSocket – A next-generation bidirectional communication technology for web applications.
- Server-Sent Events – HTML5 introduces events which flow from web server to the web browsers and they are called Server-Sent Events (SSE).
- Canvas – This supports a two-dimensional drawing surface that you can program with JavaScript.



...

- Audio & Video – You can embed audio or video on your webpages without resorting to third-party plugins.
- Geolocation – Now visitors can choose to share their physical location with your web application.
- Microdata – This lets you create your own vocabularies and extend your web pages with custom semantics.
- Drag and drop – Drag and drop the items from one location to another location on the same webpage.



Backward Compatibility

- HTML5 is designed, as much as possible, to be *backward compatible* with existing web browsers.
- Its new features have been built on existing features and allow you to provide fallback content for older browsers.



DOCTYPE

- DOCTYPEs in older versions of HTML were longer because the HTML language was SGML based and therefore required a reference to a DTD.
- HTML 5 authors would use simple syntax to specify DOCTYPE as follows –

```
<!DOCTYPE html>
```
- The above syntax is case-insensitive.



Valid...

- `<!doctype html>`
- `<!dOCtyPe html>`
- `<!DocTYpe html>`



Using Heading

- **<h1>defines the most important heading.**
- **<h6> defines the least important heading**

```
<h1>Main title</h1>
<p>Introduction</p>

  <h2>Reasons</h2>

    <h3>Reason 1</h3>
    <p>Paragraph</p>

    <h3>Reason 2</h3>
    <p>Paragraph</p>

  <h2>In conclusion</h2>
  <p>Paragraph</p>
```

Paragraphs

- `<p>` element defines a paragraph:

`<p>This is a paragraph.</p>`

`<p>This is another`

`paragraph.</p>`

- **Display**

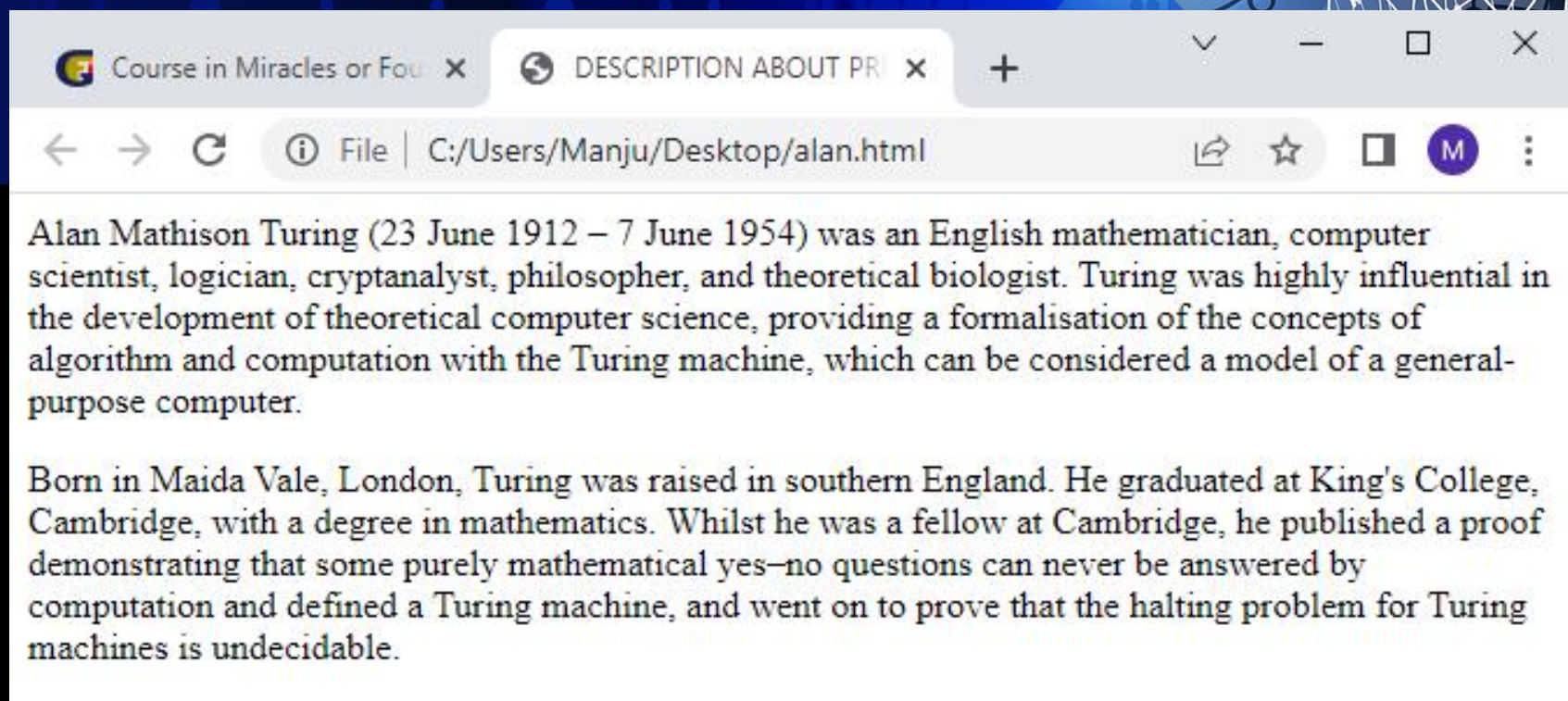
- You cannot be sure “how” HTML will be displayed. **Large** or **small** screens, and **resized** windows will create different results.
- With HTML, you cannot “change the output” by adding **extra** spaces or extra **lines** in your HTML code.

The browser will **remove any extra spaces** and extra lines when the page is displayed.

- **<p>This is another paragraph,
extra spaces will be removed by
browsers</p>**
- **
** Inserts a single line break
- **<pre>** Defines pre-formatted text

```
<html>
<head>
<title>DESCRIPTION ABOUT PRE TAG</title>
</head>
<body>
<p>Alan Mathison Turing (23 June 1912 - 7 June 1954) was an English mathematician,
computer scientist, logician, cryptanalyst, philosopher, and theoretical biologist.
Turing was highly influential in the development of theoretical computer science, providing a formalisation of the concepts of
algorithm and computation with the Turing machine, which can be considered a model of a general-purpose computer.</p>
<p>Born in Maida Vale, London, Turing was raised in southern England. He graduated at King's College,
Cambridge, with a degree in mathematics.
Whilst he was a fellow at Cambridge, he published a proof demonstrating that some purely
mathematical yes-no questions
can never be answered by computation and defined a Turing machine,
and went on to prove that the halting problem for Turing machines is undecidable.</p>
</body>
</html>
```


OUTPUT



Alan Mathison Turing (23 June 1912 – 7 June 1954) was an English mathematician, computer scientist, logician, cryptanalyst, philosopher, and theoretical biologist. Turing was highly influential in the development of theoretical computer science, providing a formalisation of the concepts of algorithm and computation with the Turing machine, which can be considered a model of a general-purpose computer.

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```
<html>
```

```
<head>
```

```
<title>DESCRIPTION ABOUT PRE TAG</title>
```

```
</head>
```

```
<body>
```

```
<p>Alan Mathison Turing (23 June 1912 - 7 June 1954) was an "English mathematician",  
computer scientist, logician, cryptanalyst, philosopher, and theoretical biologist.
```

```
Turing was highly influential in the development of theoretical computer science, providing a formalisation of the concepts of  
algorithm and computation with the Turing machine, which can be considered a model of a general-purpose computer.</p>
```

```
<p><pre>          Born in Maida Vale, London, Turing was raised in southern England. He graduated at King's College,  
Cambridge, with a degree in mathematics.</pre>
```

```
Whilst he was a fellow at Cambridge, he published a proof demonstrating that some purely  
mathematical yes-no questions
```

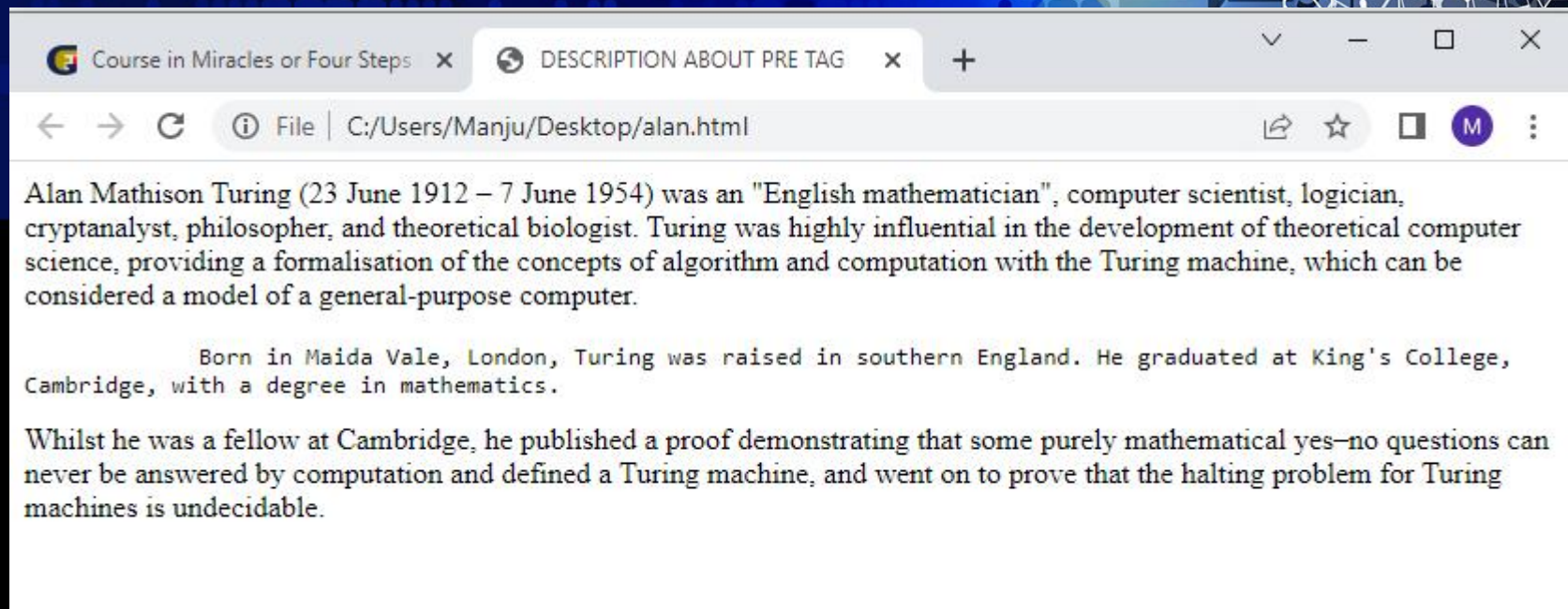
```
can never be answered by computation and defined a Turing machine,
```

```
and went on to prove that the halting problem for Turing machines is undecidable.</p>
```

```
</body>
```

```
</html>
```


OUTPUT



Text Formatting

- Highlighting, bolding, underlining, subscript, and stricken text.



Highlighting

- The `<mark>` element is new in HTML5 and is used to mark or highlight text in a document .



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```
<html>
<head>
<title>DESCRIPTION ABOUT PRE,BR,MARK TAG</title>
</head>
<body>
<p><MARK>Alan Mathison Turing</MARK> (23 June 1912 - 7 June 1954) was an "English mathematician",
computer scientist, logician, cryptanalyst, philosopher, and theoretical biologist.<BR>
Turing was highly influential in the development of <mark>theoretical computer science</mark>, providing a formalisation of the concepts of
algorithm and computation with the Turing machine, which can be considered a model of a general-purpose computer.</p>
<p><pre>        Born in Maida Vale, London, Turing was raised in southern England. He graduated at King's College,
Cambridge, with a degree in mathematics.</pre>
Whilst he was a fellow at Cambridge, he published a proof demonstrating that some purely
mathematical yes-no questions
can never be answered by computation and defined a <mark>Turing machine</mark>,
and went on to prove that the halting problem for Turing machines is undecidable.</p>
</body>
</html>
```



Alan Mathison Turing (23 June 1912 – 7 June 1954) was an "English mathematician", computer scientist, logician, cryptanalyst, philosopher, and theoretical biologist.

Turing was highly influential in the development of **theoretical computer science**, providing a formalisation of the concepts of algorithm and computation with the Turing machine, which can be considered a model of a general-purpose computer.

Born in Maida Vale, London, Turing was raised in southern England. He graduated at King's College, Cambridge, with a degree in mathematics.

Whilst he was a fellow at Cambridge, he published a proof demonstrating that some purely mathematical yes–no questions can never be answered by computation and defined a **Turing machine**, and went on to prove that the halting problem for Turing machines is undecidable.

`<p>Here is some content from an article that contains the <mark>searched query</mark> that we are looking for. Highlighting the text will make it easier for the user to find what they are looking for.</p>`

Output:

Here is some content from an article that contains the **searched query** that we are looking for. Highlighting the text will make it easier for the user to find what they are looking for.

A common standard formatting is black text on a yellow background, but this can be changed with CSS.

Bold, Italic, and Underline

Bold Text

To bold text, use the `` or `` tags:

```
<strong>Bold Text Here</strong>
```

or

```
<b>Bold Text Here</b>
```

What's the difference?

- Semantics.
- **** is used to indicate that the text is fundamentally or semantically **important** to the surrounding text, while **** *indicates no such importance and simply **represents text that should be bolded.***
- If you were to use a **text-to-speech** program would not say the word(s) any differently than any of the other words around it - you are simply drawing **attention** to them without adding any additional importance. By using **, though,** the same program would want to speak those word(s) with a different **tone** of voice to convey that the text is important in some way.



Italic Text

To italicize text, use the `` or `<i>` tags:

```
<em>Italicized Text Here</em>
```

or

```
<i>Italicized Text Here</i>
```

What's the difference?

- Semantics.
- *is used to indicate that the text should have extra emphasis(spl . importance) that should be stressed, while simply represents text which should be set off from the normal text around it.*
- *For example, if you wanted to stress the action inside a sentence, one might do so by emphasizing it in italics via : "Would you just submit the edit already?"*
- *But if you were identifying a book or newspaper that you would normally italicize stylistically, you would simply use : "I was forced to read Romeo and Juliet in high school."*

Underlined Text

- While the `<u>` element itself was deprecated (not recommended) in HTML 4, it was reintroduced with alternate semantic meaning in HTML 5 .
- You might use such a rendering to indicate misspelled text on the page.

`<p> This paragraph contains some misspelled text.</p>`

Abbreviation



- To mark some expression as an abbreviation, use `<abbr>` tag:
- `<p> I like to write <abbr title="Hypertext Markup language">HTML</abbr>!</p>`
- “title” attribute is used to present the full description of such abbreviation.

```
<html>
<head>
<title>DESCRIPTION ABOUT ABBR TAG</title>
</head>
<body>
<p> Abbreviation 1 <abbr title="Hypertext">HTML</abbr>!</p>
<p> Abbreviation 2 <abbr title="Amount ">amt</abbr>!</p>

</body>
</html>
```

DESCRIPTION ABOUT PRE,BR,MA x



File

C:/Users/Manju/Desktop/alan.html



Abbreviation 1 HTML!

Abbreviation 2 amt!

Inserted, Deleted, or Stricken



- To mark text as ***inserted***, use the <ins>tag:
`<ins>New Text </ins>`
- To mark text as ***deleted***, use the tag:
`Deleted Text`
- To ***strike*** through text, use the <s> tag:
`<s>Struck-through text here</s>`

Superscript and Subscript



- To offset text either upward or downward you can use the tags `<sup>` and `<sub>`.
- To create superscript:
`^{superscript here}`
- To create subscript:
`_{subscript here}`

anchors and Hyperlinks



Parameter: href

- Specifies the destination address.
- It can be an **absolute** or **relative** URL, or the name of an anchor.
- An **absolute** URL is the complete URL of a **website** like `http://example.com/`.
- A **relative** URL points to another **directory** and/or document inside the same website, e.g. `/about-us/` points to the directory “**about-us**” inside the root directory (`/`).

Parameter: hreflang

- Specifies the **language** of the resource linked by the href attribute (which must be present with this one).
- Use language values from BCP 47 for HTML5 and RFC 1766 for HTML 4.

ar-SA Arabic Saudi Arabia

cs-CZ Czech Czech Republic

da-DK Danish Denmark

de-DE German Germany

el-GR Modern Greek Greece

en-AU English Australia

en-GB English United Kingdom

en-IE English Ireland

en-US English United States

en-ZA English South Africa

es-ES Spanish Spain

es-MX Spanish Mexico



rel

- Specifies the **relationship** between the current document and the linked document.
- For HTML5, the values must be defined in the specification or registered in the Microformats wiki.
- Ex:author,bookmark,help,license etc.

target

- Specifies where to open the link, e.g. **in a new tab** or window.
- Possible values are `_blank`, `_self`, `_parent`, `_top`.
- Forcing such behaviour is not recommended since it violates the control of the user over a website.

title

- Specifies extra information about a link.
- The information is most often shown as a **tooltip text** when the cursor moves over the link.
- This **attribute** is not restricted to links, it can be used on almost all HTML tags.



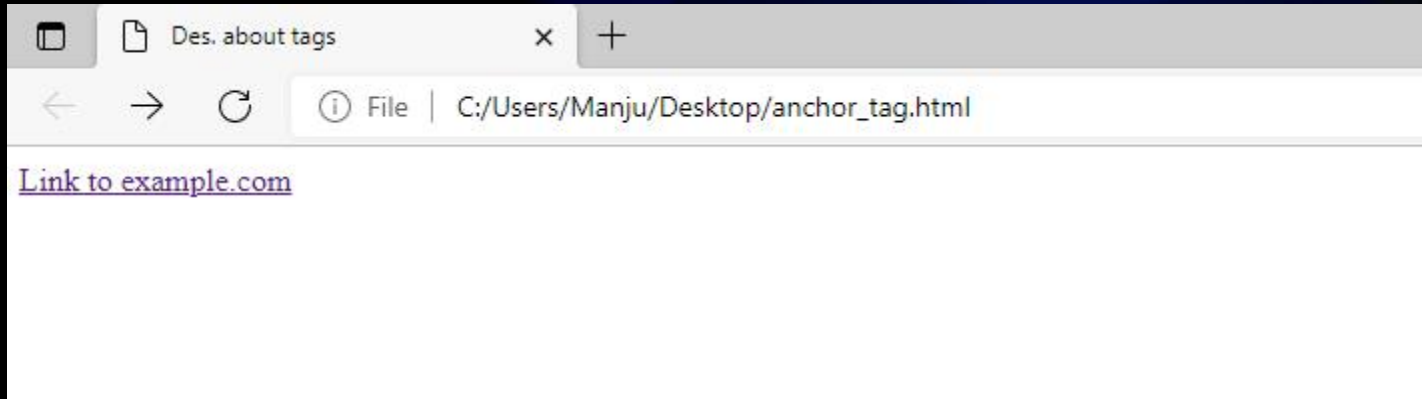


download

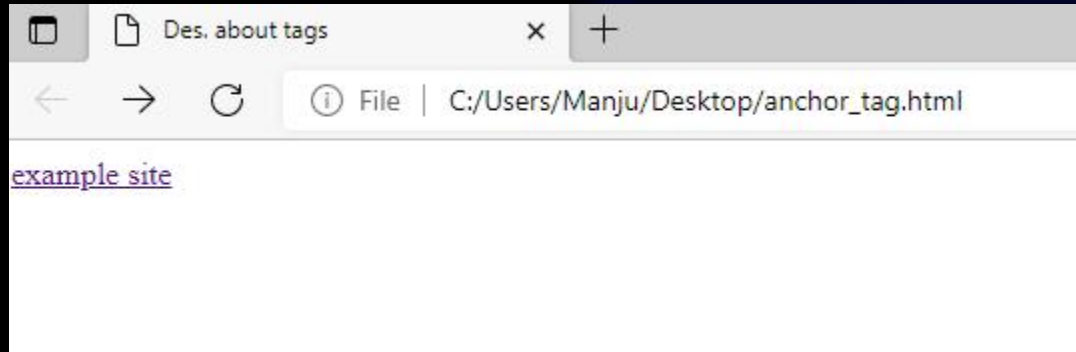
- Specifies that the target will be downloaded when a user clicks on the hyperlink.
- The value of the **attribute** will be the **name** of the downloaded file.
- There are no restrictions on allowed values, and the browser will automatically detect the correct file extension and add it to the file (.img, .pdf, etc.).
- If the value is omitted, the original filename is used.

Link to another site

- This is the basic use of the <a> (anchor element):
<a href=<http://example.com/>>Link to example.com
- <http://example.com/>->URL
- Link to example.com->anchor text



- `example site`



Link to an anchor



- Anchors can be used to **jump to specific tags** on an HTML page.
- The tag can point to any element that has an id attribute

Suppose you've created a page (page1.html) on many topics:

```
<h2>First topic</h2>
<p>Content about the first topic</p>
<h2>Second topic</h2>
<p>Content about the second topic</p>
```

Once you have several sections, you may want to create a Table of Contents at the top of the page with quick-links (or bookmarks) to specific sections.

If you gave an id attribute to your topics, you could then link to them

```
<h2 id="Topic1">First topic</h2>
<p>Content about the first topic</p>
<h2 id="Topic2">Second topic</h2>
<p>Content about the second topic</p>
```

Now you can use the anchor in your table of contents:

```
<h1>Table of Contents</h1>
  <a href='#Topic1'>Click to jump to the First Topic</a>
  <a href='#Topic2'>Click to jump to the Second Topic</a>
```

The pre element

First topic

Content about the first topic

Second topic

Content about the second topic

Table of Contents

[Click to jump to the First Topic](#) [Click to jump to the Second Topic](#)

Link that dials a number



- If the value of the href-attribute begins with **tel:**, your device will dial the number when you click it.
- This works on mobile devices or computers/tablets running software – like Skype or FaceTime – that can make phone calls

`Call us`

Most devices and programs will prompt the user in some way to confirm the number they are about to dial.

Open link in new tab/window



- `Text Here`
- The target attribute specifies where to open the link.
- By setting it **to _blank**, you tell the browser to open it in a new tab or window (per user preference).

Link that runs email client



- If the value of the href-attribute begins with **mailto:** it will try to open an email client on click.

```
<a href="mailto:example@example.com">Send email</a>
```

- Cc and Bcc You can also add addresses for cc- or bcc-recipients using the following syntax:
- ```
Send email
```

**Send**

**Cancel**

**Save as Draft**

Draft auto-saved at 11:43 AM

TO:

Readers

CC:

Everyone

Who

Uses

Email

BCC:

It's

A Secret

SUBJECT:

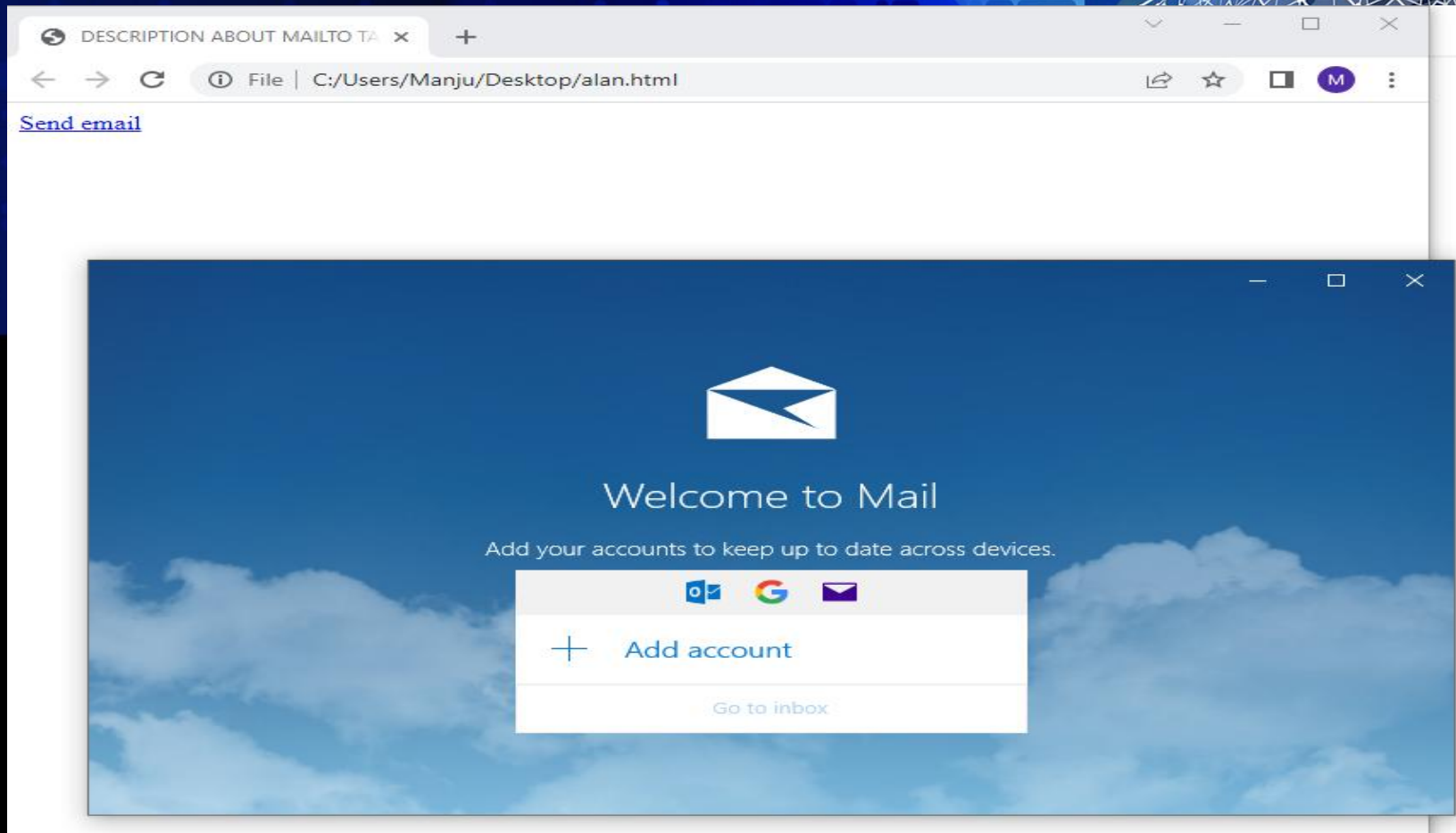
The Difference Between CC and BCC



```
<html>
<head>
<title>DESCRIPTION ABOUT MAILTO TAG</title>
</head>
<body>

Send email

</body>
</html>
```



# Subject and body text

- You can populate the subject and body for the new email as well:

<a

href="mailto:john@gmail.com?subject=invitation+subject&body=message+text">Send email</a>

# Lists

- HTML offers three ways for specifying lists:
  - ordered lists
  - unordered lists
  - description lists.
- **Ordered lists** use *ordinal sequences*(**ordered sequence**) to indicate the order of list elements



...

- **Unordered lists** use a *defined symbol* such as a *bullet* to list elements in no designated order
- **Description lists** use *indents* to list elements with their children.



# Ordered List

- An ordered list can be created with the `<ol>` tag and each list item can be created with the `<li>` tag as in the example below:

```

 Item
 Another Item
 Yet Another Item

```

This will produce a numbered list (which is the default style):

1. Item
2. Another Item
3. Yet Another Item

# Manually changing the numbers

- List will start at this defined number, and continue incrementing by one as usual.

```
<ol start="3">
 Item
 Some Other Item
 Yet Another Item

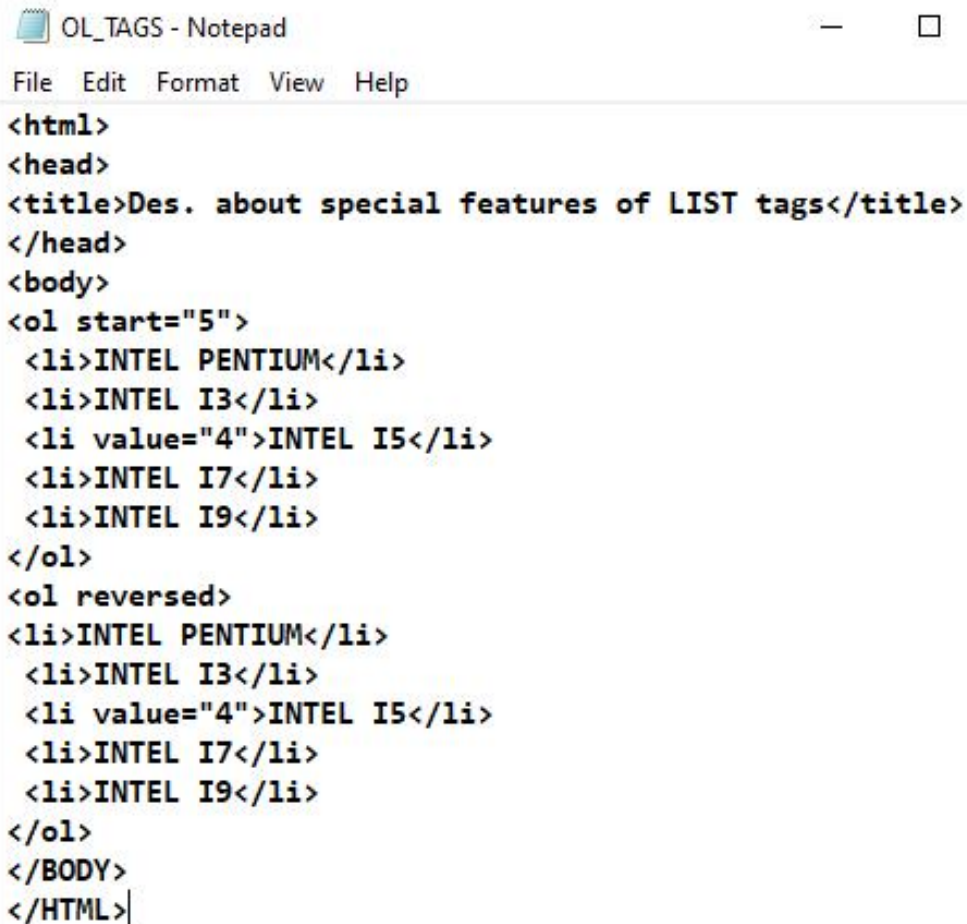
```

This will produce a numbered list (which is the default style):

3. Item
4. Some Other Item
5. Yet Another Item

5. INTEL PENTIUM  
6. INTEL I3  
4. INTEL I5  
5. INTEL I7  
6. INTEL I9

5. INTEL PENTIUM  
4. INTEL I3  
4. INTEL I5  
3. INTEL I7  
2. INTEL I9



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```
<html>
<head>
<title>Des. about special features of LIST tags</title>
</head>
<body>
<ol start="5">
 INTEL PENTIUM
 INTEL I3
 <li value="4">INTEL I5
 INTEL I7
 INTEL I9

<ol reversed>
 INTEL PENTIUM
 INTEL I3
 <li value="4">INTEL I5
 INTEL I7
 INTEL I9

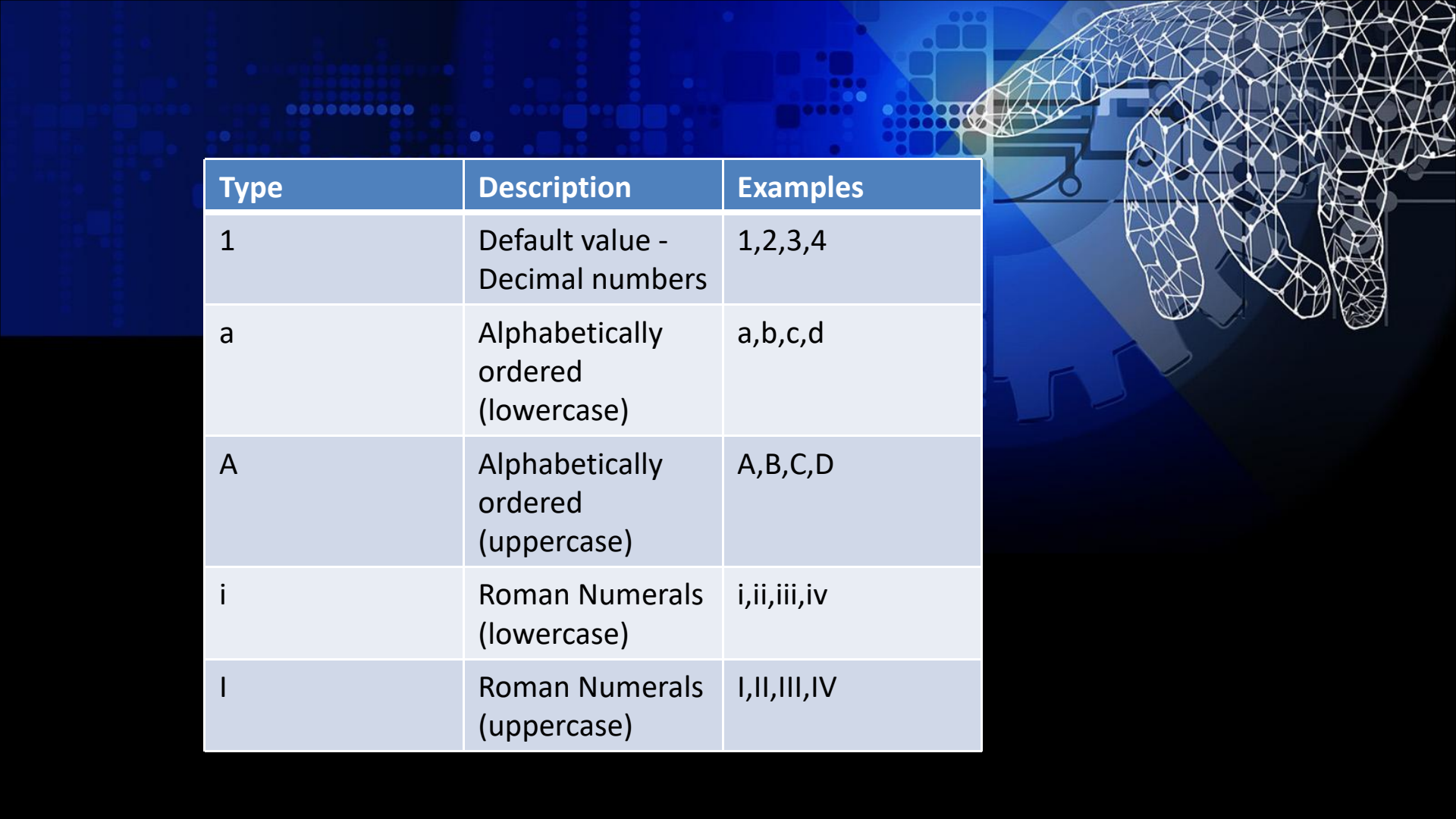
</BODY>
</HTML>
```



# Changing the type of numeral

- You can easily change the type of numeral shown in the list item marker by using the type attribute.





Type	Description	Examples
1	Default value - Decimal numbers	1,2,3,4
a	Alphabetically ordered (lowercase)	a,b,c,d
A	Alphabetically ordered (uppercase)	A,B,C,D
i	Roman Numerals (lowercase)	i,ii,iii,iv
I	Roman Numerals (uppercase)	I,II,III,IV

- a. OS
- b. GUI
- c. CUI

\*OL\_TAGS - Notepad

File Edit Format View Help

```
<html>
<head>
<title>Des. about special features of LIST tags</title>
</head>
<body>
<ol type="a">
 OS
 GUI
 CUI

</BODY>
</HTML>
```

# Unordered List

```

 Item
 Another Item
 Yet Another Item

```

This will produce a bulleted list (which is the default style):

- Item
- Another Item
- Yet Another Item



# Nested lists

- Needs of a plant
- Parts of a plant
  - Roots
  - Stem
  - Leaves
- Uses of a plant

```
*OL_TAGS - Notepad
File Edit Format View Help
<html>
<head>
<title>Des. about special features of LIST tags</title>
</head>
<body>

Needs of a plant
Parts of a plant

Roots
Stem
Leaves

Uses of a plant

</BODY>
</HTML>
```

# Description List



- A description list (or definition list, as it was called before HTML5) can be created with the **dl** element.
- It consists of name-value groups, where
  - name is given in the '**dt**' element
  - value is given in the '**dd**' element.

Rickson

BCA-IBM

Renish

BCA-Non IBM

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File Edit Format View Help

```
<html>
<head>
<title>Des. about special features of LIST tags</title>
</head>
<body>
 <dl>
 <dt>Rickson</dt>
 <dd>BCA-IBM</dd>
 <dt>Renish</dt>
 <dd>BCA-Non IBM</dd>
 </dl>
</BODY>
</HTML>
```


# Tables

- The HTML `<table>` element allows web authors to display tabular data (such as text, images, links, other tables, etc.) in a two dimensional table with rows and columns of cells.



```
<table>
 <tr>
 <th>Heading 1/Column 1</th>
 <th>Heading 2/Column 2</th>
 </tr>
 <tr>
 <td>Row 1 Data Column 1</td>
 <td>Row 1 Data Column 2</td>
 </tr>
 <tr>
 <td>Row 2 Data Column 1</td>
 <td>Row 2 Data Column 2</td>
 </tr>
</table>
```



- 
- This will render a `<table>` consisting of three total rows (`<tr>`): one row of header cells (`<th>`) and two rows of content cells (`<td>`). `<th>` elements are tabular headers and `<td>` elements are tabular data. You can put whatever you want inside a `<td>` or `<th>`



**Heading 1/Column 1 Heading 2/Column 2**

Row 1 Data Column 1 Row 1 Data Column 2

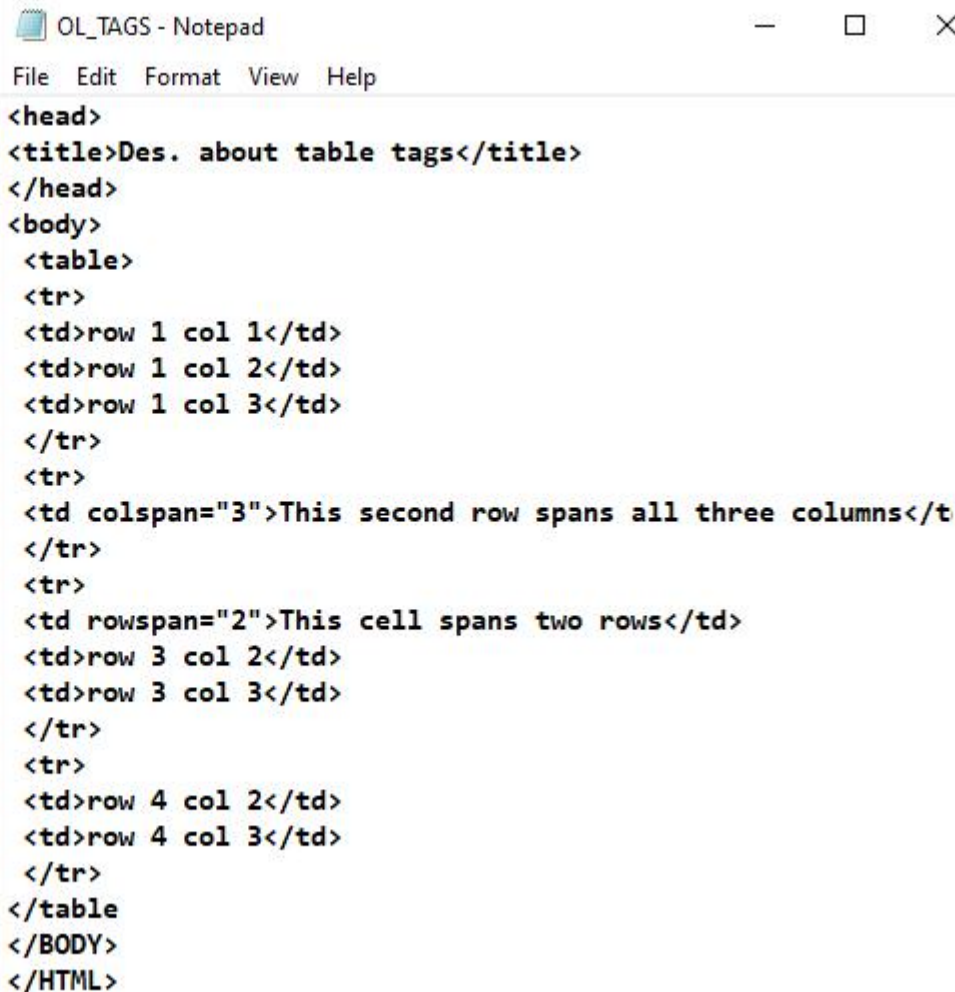
Row 2 Data Column 1 Row 2 Data Column 2

# Spanning columns or rows

row 1 col 1	row 1 col 2	row 1 col 3
This second row spans all three columns		
This cell spans two rows	row 3 col 2	row 3 col 3
	row 4 col 2	row 4 col 3



row 1 col 1	row 1 col 2	row 1 col 3
This second row spans all three columns		
This cell spans two rows	row 3 col 2	row 3 col 3
	row 4 col 2	row 4 col 3



```
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File Edit Format View Help
<head>
<title>Des. about table tags</title>
</head>
<body>
<table>
<tr>
<td>row 1 col 1</td>
<td>row 1 col 2</td>
<td>row 1 col 3</td>
</tr>
<tr>
<td colspan="3">This second row spans all three columns</td>
</tr>
<tr>
<td rowspan="2">This cell spans two rows</td>
<td>row 3 col 2</td>
<td>row 3 col 3</td>
</tr>
<tr>
<td>row 4 col 2</td>
<td>row 4 col 3</td>
</tr>
</table>
</BODY>
</HTML>
```

# Character Encoding

- HTML 5 authors can use simple syntax to specify Character Encoding as follows –  
`<meta charset="UTF=8">`
- The HTML 5 removes extra information required and you can use simply following syntax –

