



**DOCUMENT  
ENGINEERING**

# CMPSC 104 – Document Engineering

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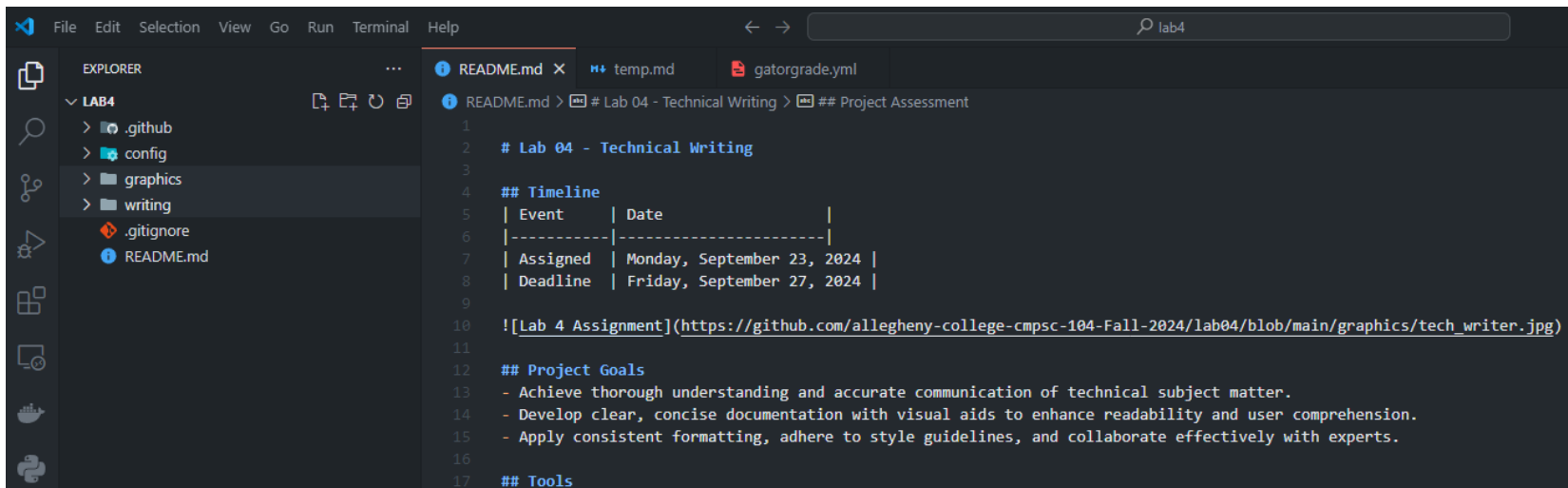


ALLEGHENY COLLEGE

# Overview

## What is Markdown?

Markdown is a lightweight markup language designed for simplicity, allowing users to format plain text with easy-to-read syntax, such as using # for headings and \*\* for bold text (e.g., **bold**).



The screenshot shows a code editor with a dark theme. The Explorer panel on the left shows a folder named 'LAB4' containing files like '.github', 'config', 'graphics', 'writing', '.gitignore', and 'README.md'. The main editor area displays the content of 'README.md', which includes a heading, a table, a link, and a list of goals.

```
1
2 # Lab 04 - Technical Writing
3
4 ## Timeline
5 | Event | Date |
6 |-----|-----|
7 | Assigned | Monday, September 23, 2024 |
8 | Deadline | Friday, September 27, 2024 |
9
10 ![Lab 4 Assignment](https://github.com/allegHENY-college-cmpsc-104-Fall-2024/lab04/blob/main/graphics/tech_writer.jpg)
11
12 ## Project Goals
13 - Achieve thorough understanding and accurate communication of technical subject matter.
14 - Develop clear, concise documentation with visual aids to enhance readability and user comprehension.
15 - Apply consistent formatting, adhere to style guidelines, and collaborate effectively with experts.
16
17 ## Tools
```

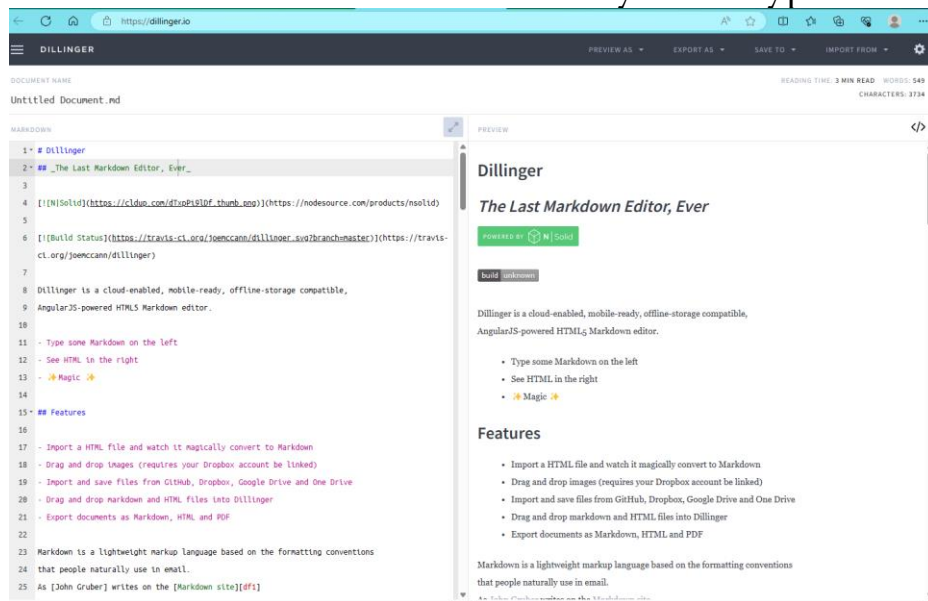
# Overview

## Why Use Markdown?

- **Adaptable:** Use it for anything from websites to presentations. (websites, documents, notes, books, presentations, email messages, and technical documentation.)
- **Movable:** Works across all apps and devices. Easy to switch between Markdown apps without losing data.
- **Universal:** Compatible with any operating system.
- **Long-lasting:** Your files remain readable forever, even if the app you use stops working.
- **Widely Accepted:** Supported on major platforms like Reddit and GitHub.

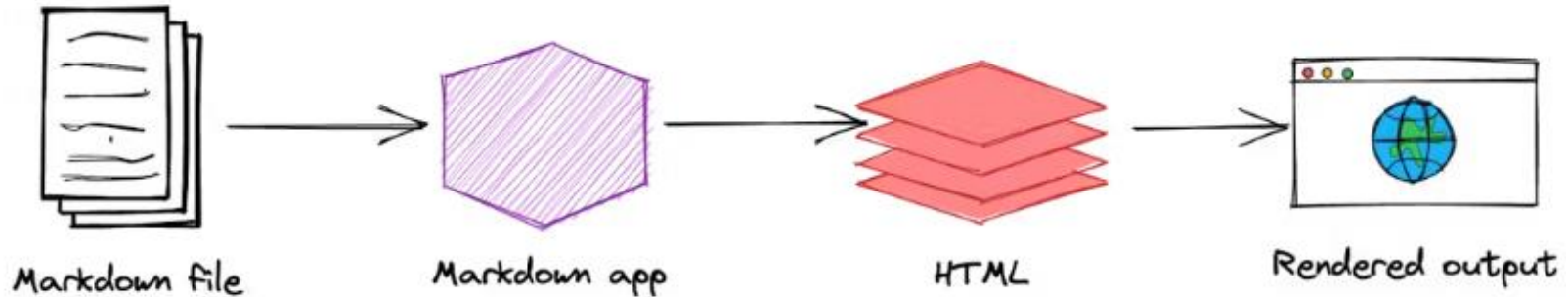
# Getting Started with Markdown

To start using Markdown, try it online without downloading anything. For example, use Dillinger (<https://dillinger.io/>), a free online Markdown editor where you can type on the left side and see a preview on the right.

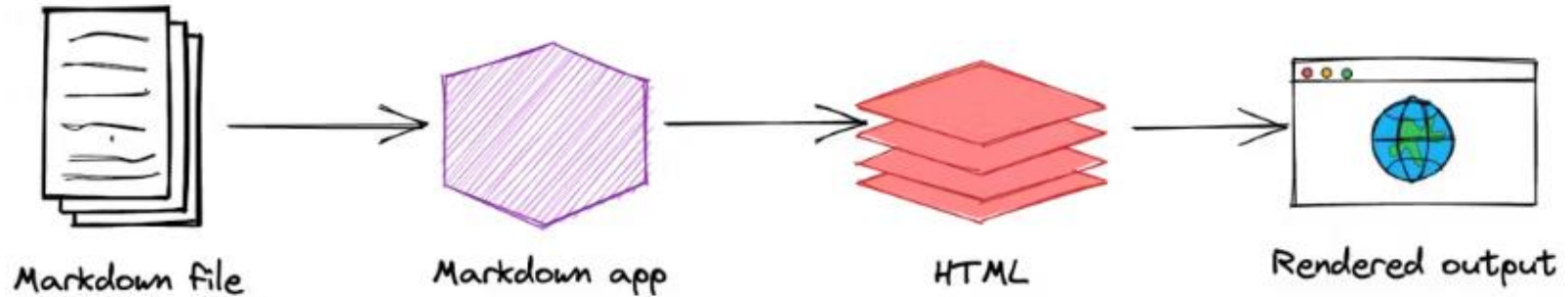


# How Does it Work?

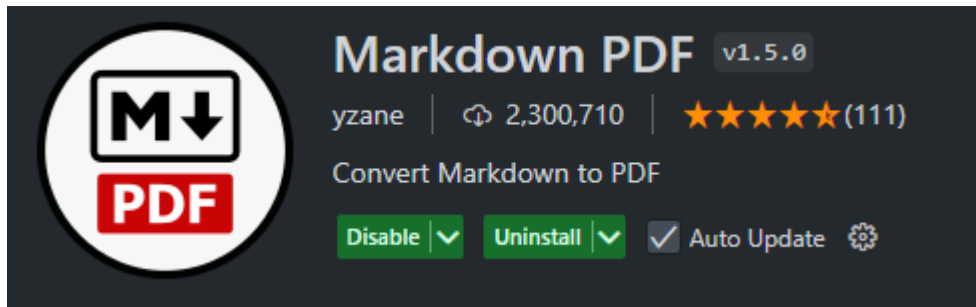
- Markdown text is saved in files with an .md or .markdown extension.
- A Markdown application processes the file, converting the Markdown-formatted text into HTML, suitable for web browsers or print-ready documents.
- Markdown applications use something called a Markdown processor (also commonly referred to as a “parser” or an “implementation”) to take the Markdown-formatted text and output it to HTML format or convert it to another file format, like PDF.



# How Does it Work?



Some Visual Studio Code (VS Code) extensions that can export a Markdown (.md) file as a PDF.



# What's Markdown Good For?

- Markdown is ideal for note-taking, creating web content, and producing print-ready documents.
- The Markdown syntax is simple to pick up, allowing for widespread use across various applications.
- Used for everything from web content and email messages to grocery lists.

# Basic Syntax - Headings

Markdown	HTML	Rendered Output
# Heading level 1	<h1>Heading level 1</h1>	Heading level 1
## Heading level 2	<h2>Heading level 2</h2>	Heading level 2
### Heading level 3	<h3>Heading level 3</h3>	Heading level 3
#### Heading level 4	<h4>Heading level 4</h4>	Heading level 4
##### Heading level 5	<h5>Heading level 5</h5>	Heading level 5
##### Heading level 6	<h6>Heading level 6</h6>	Heading level 6



# Basic Syntax - Alternate Syntax

Markdown	HTML	Rendered Output
Heading level 1 =====	<code>&lt;h1&gt;Heading level 1&lt;/h1&gt;</code>	<b>Heading level 1</b>
Heading level 2 -----	<code>&lt;h2&gt;Heading level 2&lt;/h2&gt;</code>	<b>Heading level 2</b>

# Basic Syntax - Heading

- For compatibility, always put a space between the number signs and the heading name.

✓ Do this	✗ Don't do this
<code># Here's a Heading</code>	<code>#Here's a Heading</code>

- Put blank lines before and after a heading for compatibility.

✓ Do this	✗ Don't do this
<pre>Try to put a blank line before...  # Heading  ...and after a heading.</pre>	<pre>Without blank lines, this might not look right. # Heading Don't do this!</pre>

# Basic Syntax - Paragraphs

Markdown	HTML	Rendered Output
I really like using Markdown.	<code>&lt;p&gt;I really like using Markdown.&lt;/p&gt;</code>	I really like using Markdown.
I think I'll use it to format all of my documents from now on.	<code>&lt;p&gt;I think I'll use it to format all of my documents from now on.&lt;/p&gt;</code>	I think I'll use it to format all of my documents from now on.

# Basic Syntax - Paragraphs



✓ Do this	✗ Don't do this
<p>Don't put tabs or spaces in front of your paragraphs.</p> <p>Keep lines left-aligned like this.</p>	<p>This can result in unexpected formatting problems.</p> <p>Don't add tabs or spaces in front of paragraphs.</p>

# Basic Syntax - Line Breaks

To create a line break or new line, end a line with **two or more spaces**, and then type return.

Markdown	HTML	Rendered Output
<pre>This is the first line. And this is the second line.</pre>	<pre>&lt;p&gt;This is the first line.&lt;br&gt; And this is the second line.&lt;/p&gt;</pre>	<p>This is the first line. And this is the second line.</p>

# Basic Syntax - Line Breaks

 Do this	 Don't do this
<pre>First line with two spaces after. And the next line.</pre>	<pre>First line with a backslash after.\ And the next line.</pre>
<pre>First line with the HTML tag after.&lt;br&gt; And the next line.</pre>	<pre>First line with nothing after. And the next line.</pre>

# Basic Syntax – Emphasis (Bold)

Markdown	HTML	Rendered Output
I just love <b>bold text</b> .	I just love <strong>bold text</strong>.	I just love <b>bold text</b> .
I just love __bold text__.	I just love <strong>bold text</strong>.	I just love <b>bold text</b> .
Love <b>is</b> bold	Love<strong>is</strong>bold	Love <b>is</b> bold

✓ Do this	✗ Don't do this
Love <b>is</b> bold	Love__is__bold

# Basic Syntax – Emphasis (Italic)

Markdown	HTML	Rendered Output
Italicized text is the <code>*cat's meow*</code> .	Italicized text is the <code>&lt;em&gt;cat's meow&lt;/em&gt;.</code>	Italicized text is the <i>cat's meow</i> .
Italicized text is the <code>_cat's meow_</code> .	Italicized text is the <code>&lt;em&gt;cat's meow&lt;/em&gt;.</code>	Italicized text is the <i>cat's meow</i> .
<code>A*cat*meow</code>	<code>A&lt;em&gt;cat&lt;/em&gt;meow</code>	<i>Acatmeow</i>

✓ Do this	✗ Don't do this
<code>A*cat*meow</code>	<code>A_cat_meow</code>



# Basic Syntax – Blockquotes

To create a blockquote, add a > in front of a paragraph.

```
> Dorothy followed her through many of the beautiful rooms in her castle.
```

The rendered output looks like this:

Dorothy followed her through many of the beautiful rooms in her castle.

# Blockquotes with Multiple Paragraphs

Blockquotes can contain multiple paragraphs. Add a > on the blank lines between the paragraphs.

```
> Dorothy followed her through many of the beautiful rooms in her castle.  
>  
> The Witch bade her clean the pots and kettles and sweep the floor and keep the fire
```

The rendered output looks like this:

Dorothy followed her through many of the beautiful rooms in her castle.

The Witch bade her clean the pots and kettles and sweep the floor and keep the fire fed with wood.

# Nested Blockquotes

Blockquotes can be nested. Add a >> in front of the paragraph you want to nest.

```
> Dorothy followed her through many of the beautiful rooms in her castle.  
>  
>> The Witch bade her clean the pots and kettles and sweep the floor and keep the fire
```

The rendered output looks like this:

Dorothy followed her through many of the beautiful rooms in her castle.

The Witch bade her clean the pots and kettles and sweep the floor and keep the fire fed with wood.

# Blockquotes with Other Elements

Blockquotes can contain other Markdown formatted elements.

*Notes:* **Not** all elements can be used — you'll need to experiment to see which ones work.

```
> #### The quarterly results look great!  
>  
> - Revenue was off the chart.  
> - Profits were higher than ever.  
>  
> *Everything* is going according to **plan**.
```

The rendered output looks like this:


**The quarterly results look great!**

- Revenue was off the chart.
- Profits were higher than ever.

*Everything* is going according to **plan**.

# Blockquotes Best Practices

For compatibility, put blank lines before and after blockquotes.

 <b>Do this</b>	 <b>Don't do this</b>
<p>Try to put a blank line before...</p> <pre>&gt; This is a blockquote</pre> <p>...and after a blockquote.</p>	<p>Without blank lines, this might not look right.</p> <pre>&gt; This is a blockquote</pre> <p>Don't do this!</p>



# Basic Syntax – Lists

To create an ordered list, add line items with numbers followed by periods.

The numbers don't have to be in numerical order, but the list should **start with the number one**

Markdown	HTML	Rendered Output
<pre>1. First item 2. Second item 3. Third item 4. Fourth item</pre>	<pre>&lt;ol&gt;   &lt;li&gt;First item&lt;/li&gt;   &lt;li&gt;Second item&lt;/li&gt;   &lt;li&gt;Third item&lt;/li&gt;   &lt;li&gt;Fourth item&lt;/li&gt; &lt;/ol&gt;</pre>	<pre>1. First item 2. Second item 3. Third item 4. Fourth item</pre>
<pre>1. First item 1. Second item 1. Third item 1. Fourth item</pre>	<pre>&lt;ol&gt;   &lt;li&gt;First item&lt;/li&gt;   &lt;li&gt;Second item&lt;/li&gt;   &lt;li&gt;Third item&lt;/li&gt;   &lt;li&gt;Fourth item&lt;/li&gt; &lt;/ol&gt;</pre>	<pre>1. First item 2. Second item 3. Third item 4. Fourth item</pre>
<pre>1. First item 8. Second item 3. Third item 5. Fourth item</pre>	<pre>&lt;ol&gt;   &lt;li&gt;First item&lt;/li&gt;   &lt;li&gt;Second item&lt;/li&gt;   &lt;li&gt;Third item&lt;/li&gt;   &lt;li&gt;Fourth item&lt;/li&gt; &lt;/ol&gt;</pre>	<pre>1. First item 2. Second item 3. Third item 4. Fourth item</pre>
<pre>1. First item 2. Second item 3. Third item     1. Indented item     2. Indented item 4. Fourth item</pre>	<pre>&lt;ol&gt;   &lt;li&gt;First item&lt;/li&gt;   &lt;li&gt;Second item&lt;/li&gt;   &lt;li&gt;Third item     &lt;ol&gt;       &lt;li&gt;Indented item&lt;/li&gt;       &lt;li&gt;Indented item&lt;/li&gt;     &lt;/ol&gt;   &lt;/li&gt;   &lt;li&gt;Fourth item&lt;/li&gt; &lt;/ol&gt;</pre>	<pre>1. First item 2. Second item 3. Third item     1. Indented item     2. Indented item 4. Fourth item</pre>

# Basic Syntax – Ordered Lists

 <b>Do this</b>	 <b>Don't do this</b>
<ul style="list-style-type: none"><li>1. First item</li><li>2. Second item</li></ul>	<ul style="list-style-type: none"><li>1) First item</li><li>2) Second item</li></ul>

# Starting Unordered List Items With Numbers

If you need to start an unordered list item with a number followed by a period, you can use a backslash (\) to escape the period.

Markdown	HTML	Rendered Output
<pre>- 1968\. A great year! - I think 1969 was second best.</pre>	<pre>&lt;ul&gt;   &lt;li&gt;1968. A great year!&lt;/li&gt;   &lt;li&gt;I think 1969 was second best.&lt;/li&gt; &lt;/ul&gt;</pre>	<ul style="list-style-type: none"><li>• 1968. A great year!</li><li>• I think 1969 was second best.</li></ul>



# Unordered List

## ✓ Do this

- First item
- Second item
- Third item
- Fourth item

## ✗ Don't do this

- + First item
- \* Second item
- Third item
- + Fourth item

# Basic Syntax – Code

To denote a word or phrase as code, enclose it in backticks (`).

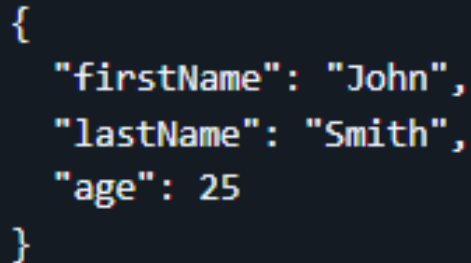
Markdown	HTML	Rendered Output
At the command prompt, type `nano`.	At the command prompt, type <code>nano</code>.	At the command prompt, type nano.

# Fenced Code Blocks

Depending on your Markdown processor or editor, you'll use three backticks (```) or three tildes (~~~) on the lines before and after the code block.

```
~~~  
{  
  "firstName": "John",  
  "lastName": "Smith",  
  "age": 25  
}  
~~~
```

The rendered output looks like this:



```
{  
  "firstName": "John",  
  "lastName": "Smith",  
  "age": 25  
}
```

# Syntax Highlighting

```
```json
```

```
{  
  "firstName": "John",  
  "lastName": "Smith",  
  "age": 25  
}
```



```
{  
  "firstName": "John",  
  "lastName": "Smith",  
  "age": 25  
}
```

# Basic Syntax – Links

To create a link, enclose the link text in brackets (e.g., [Google]) and then follow it immediately with the URL in parentheses (e.g., (https://www.google.com)).

My favorite search engine is [Google](https://www.google.com/).

The rendered output looks like this:

My favorite search engine is [Google](https://www.google.com/).

# Basic Syntax – Images

To add an image, add an exclamation mark (!), followed by alt text in brackets, and the path or URL to the image asset in parentheses. You can optionally add a title in quotation marks after the path or URL.

`![text](URL)`

`![DocEngineering](https://github.com/allegHENY-college-cmpsc-104-Fall-2024/lab01/blob/main/graphics/DocEng_logo.png)`

# Tables

To add a table, use **three** or more hyphens (---) to create each column's header, and use pipes (|) to separate each column. For compatibility, you should also add a pipe on either end of the row.

```
| Syntax      | Description |
| -----    | -----    |
| Header      | Title       |
| Paragraph   | Text        |
```

Cell widths can vary, as shown below. The rendered output will look the same.

The rendered output looks like this:

Syntax	Description
Header	Title
Paragraph	Text

# Alignment

You can align text in the columns to the left, right, or center by adding a colon (:) to the left, right, or on both side of the hyphens within the header row.

```
| Syntax      | Description | Test Text      |
| :---       | :----:     | ---:           |
| Header     | Title      | Here's this    |
| Paragraph  | Text       | And more       |
```

The rendered output looks like this:

Syntax	Description	Test Text
Header	Title	Here's this
Paragraph	Text	And more



# GitHub Flavored Markdown (GFM) Heading IDs

On Github, heading IDs are automatically generated based on the heading text, which is converted to lowercase and spaces replaced by hyphens.

**### My Section Title**

You can link to it with: [Go to My Section](#my-section-title)

[Ref: GitHub Flavored Markdown \(GFM\)](#)

# Strikethrough

You can strikethrough words by putting a horizontal line through the center of them. The result looks ~~like this~~.

~~The world is flat.~~ We now know that the world is round.

The rendered output looks like this:

~~The world is flat.~~ We now know that the world is round.

# Task Lists

Task lists (also referred to as checklists and todo lists) allow you to create a list of items with checkboxes.

- [x] Write the press release
- [ ] Update the website
- [ ] Contact the media

The rendered output looks like this:

- ☒ Write the press release
- ☐ Update the website
- ☐ Contact the media

# Emoji

1. Copying and Pasting Emoji: In most cases, you can simply copy an emoji from a source like [Emojipedia](#) and paste it into your document. ✅ 🐱 💀 😂 😆
2. Using Emoji Shortcodes ([list](#)): Some Markdown applications allow you to insert emoji by typing emoji shortcodes. These begin and end with a colon and include the name of an emoji.

Gone camping! :tent: Be back soon.

That is so funny! :joy:

The rendered output looks like this:

Gone camping! 🏕️ Be back soon.

That is so funny! 😂

# Highlight

In GitHub Flavored Markdown (GFM), == syntax for highlighting text is not supported, However, we can add custom highlighting using HTML tags, such as the `<mark>` tag

I need to highlight these `<mark>very important words</mark>`.

The rendered output looks like this:

I need to highlight these **very important words**.

# Subscript & Superscript

GitHub Flavored Markdown (GFM) does not natively support subscript or superscript syntax. However, you can use HTML tags within Markdown files on GitHub to achieve subscript or superscript effects.

`H<sub>2</sub>O`

Water is represented as `H<sub>2</sub>O` in chemical notation.

`x<sup>2</sup>`

The rendered output looks like this:      $\text{H}_2\text{O}$

$x^2$

Water is represented as  $\text{H}_2\text{O}$  in chemical notation.

# Admonitions


Admonitions are frequently used in documentation to call attention to warnings, notes, and tips.

> :warning: **Warning:** Do not push the big red button.

> :memo: **Note:** Sunrises are beautiful.

> :bulb: **Tip:** Remember to appreciate the little things in life.

The rendered output looks like this:

 **Warning:** Do not push the big red button.

 **Note:** Sunrises are beautiful.

 **Tip:** Remember to appreciate the little things in life.

# YouTube Videos

GitHub Flavored Markdown (GFM) does not natively support subscript or superscript syntax. However, you can use HTML tags within Markdown files on GitHub to achieve subscript or superscript effects.

`[![Image alt text](https://img.youtube.com/vi/YOUTUBE-ID/0.jpg)](https://www.youtube.com/watch?v=YOUTUBE-ID)`

`https://www.youtube.com/watch?v=PYCxct2e0zI`



YouTube ID

YouTube automatically generates an image for every video (`https://img.youtube.com/vi/YOUTUBE-ID/0.jpg`)

`[![Less Than Jake — Scott Farcas Takes It On The Chin](https://img.youtube.com/vi/PYCxct2e0zI/0.jpg)](https://www.youtube.com/watch?v=PYCxct2e0zI)`



# Websites

Markdown is especially useful for creating website content.

- Blot.im (<https://blot.im/>) allows you to easily convert Markdown files to a website by dragging them into a Dropbox folder.
- Jekyll (<https://jekyllrb.com>) is a powerful static site generator that integrates with GitHub Pages for free hosting.
- Ghost (<https://ghost.org/>) offers a free, open-source blogging platform with Markdown support.

# Documents

Here are some Markdown document authoring applications I recommend:

- **Mac:** [MacDown](#), [iA Writer](#), or [Marked 2](#)
- **iOS / Android:** [iA Writer](#)
- **Windows:** [ghostwriter](#) or [Markdown Monster](#)
- **Linux:** [ReText](#) or [ghostwriter](#)
- **Web:** [Dillinger](#) or [StackEdit](#)

# Reference and Resources

- Markdown guide (<https://www.markdownguide.org/getting-started/>)
- [John Gruber's Markdown documentation](#). The original guide written by the creator of Markdown.
- [Markdown Tutorial](#). An open source website that allows you to try Markdown in your web browser.
- [Awesome Markdown](#). A list of Markdown tools and learning resources.
- [Typesetting Markdown](#). A multi-part series that describes an ecosystem for typesetting Markdown documents using [pandoc](#) and [ConTeXt](#).