Markdown Latex PDF Builder Comprehensive Guide

- ✅ **Standard Markdown Support**: Headings, lists, tables, links, images, blockquotes, and more.
- 📝 **Text Formatting**: Bold, italic, underline, strikethrough, highlight, superscript, subscript, small caps.
- 💻 **Code Blocks**: Syntax highlighting, inline code, executable Python code with output/plots.
- 📊 **Diagrams**: Mermaid diagrams for flowcharts and graphs.
- 📋 **Task Lists**: Checkboxes for to-do and progress tracking.
- 🦶 **Footnotes**: Inline and reference footnotes.
- 🧮 **Math**: Inline and display math with LaTeX syntax.
- 🏷️ **Definition Lists**: Term-definition pairs.
- 📑 **Tables**: Pipe tables, captions, and alignment.
- ⚠️ **Alerts & Containers**: Note, tip, important, warning, caution, box, and alignment containers.
- 🎨 **Custom Extensions**: Center/right alignment, keyboard shortcuts, line breaks, and more.
- 🏷️ **Metadata & Variables**: JSON metadata, document variables, and title page templates.
- 🌐 **Emoji Support**: Use emojis anywhere in your markdown for expressive documents! 😃

Basic and Advanced Syntax

Headings

```markdown
# Heading 1

## Heading 2

### Heading 3

#### Heading 4

##### Heading 5

###### Heading 6
```

Heading 1

Heading 2

Heading 3

Heading 4

Heading 5

Heading 6

Text Formatting

Bold

```markdown
**bold text** or **bold text**
```

bold text or **bold text**

Italic

```markdown
_italic text_ or _italic text_
```

italic text or *italic text*

Bold + Italic

```markdown
**_bold and italic_** or **_bold and italic_**
```

bold and italic or ***bold and italic***

Strikethrough

```markdown
~~strikethrough text~~
```

~~strikethrough text~~

Highlight

```markdown
==highlighted text==
```

highlighted text

Superscript

```markdown
^superscript^ (e.g., x^2^)
```

superscript (e.g., x^2)

Subscript

```markdown
~subscript~ (e.g., H~2~O)
```

subscript (e.g., H_2O)

Small Caps

```markdown
^^Small Caps Text^^
```

Small Caps Text

Underline

```markdown
--Underlined Text--
```

Underlined Text

Inline Code

```markdown
`inline code`
```

`inline code`

Code Blocks

Code Block Without Language

```markdown
```
plain text code block
```
```

```
plain text code block
```

Code Block With Language

Example 1

```markdown
```python
def hello():
    print("Hello, World!")
```
```

```python
def hello():
    print("Hello, World!")
```

Example 2

````
markdown
```console
$ command
output result
```
````

````
console
$ command
output result
````

> **NOTE**
> For highlighting specific lines in code blocks or making them executable, refer to the **Executable Code Blocks** section below.

Links

Basic Link

```
markdown
[link text](https://example.com?query=1&value=2)
```

link text

Link with Title

```
markdown
[link text](https://example.com "title")
```

link text

Images

Basic Image

```
markdown
![alt text](image.jpg)
```

Image with Title

```markdown
![alt text](image.jpg "title")
```

Figure 1: title

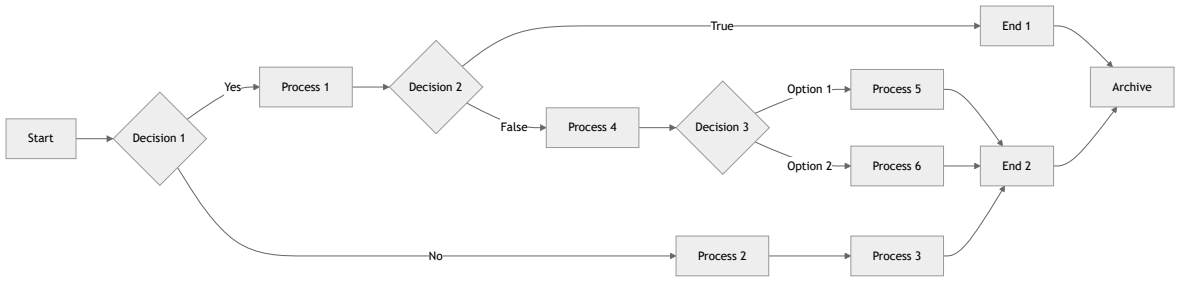
Image from URL

```markdown
![alt
↪  text](https://github.com/abdxdev/markdown-latex-pdf-builder/blob/main/test/image.j
```

Mermaid Diagrams

markdown

```
```mermaid
graph LR;
  A[Start] --> B{Decision 1};
  B -- Yes --> C[Process 1];
  B -- No  --> D[Process 2];
  C --> E{Decision 2};
  D --> F[Process 3];
  E -- True --> G[End 1];
  E -- False --> H[Process 4];
  H --> I{Decision 3};
  I -- Option 1 --> J[Process 5];
  I -- Option 2 --> K[Process 6];
  J --> L[End 2];
  K --> L;
  F --> L;
  G --> M[Archive];
  L --> M;
```
```



Lists

Unordered List

```markdown
- Item 1
- Item 2
  - Nested item 2.1
  - Nested item 2.2
- Item 3
```

- Item 1
- Item 2
  - Nested item 2.1
  - Nested item 2.2
- Item 3

Ordered List

```markdown
1. First item
2. Second item
   1. Nested item 2.1
   2. Nested item 2.2
3. Third item
```

1. First item
2. Second item
   1. Nested item 2.1
   2. Nested item 2.2
3. Third item

Task Lists

```markdown
- [x] Completed task
- [ ] Incomplete task
- [/] Partially completed task
```

- ☑ Completed task
- ☐ Incomplete task
- ▣ Partially completed task

Definition Lists

```markdown
Term 1
: Definition 1

Term 2
: Definition 2a
: Definition 2b
```

Term 1
: Definition 1

Term 2
: Definition 2a
: Definition 2b

Tables

Table without Caption

```markdown
| Left | Center | Right | Default |
| :--- | :----: | ----: | ------- |
| L1   |   C1   |    R1 | Default |
| L2   |   C2   |    R2 | Default |
| L3   |   C3   |    R3 | Default |
```

Left	Center	Right	Default
L1	C1	R1	Default
L2	C2	R2	Default
L3	C3	R3	Default

Table with Captions

```markdown
| Header 1 | Header 2 | Header 3 |
| -------- | -------- | -------- |
| Cell 1   | Cell 2   | Cell 3   |
| Cell 4   | Cell 5   | Cell 6   |
| Cell 7   | Cell 8   | Cell 9   |

: Sample Table with Caption
```

Header 1	Header 2	Header 3
Cell 1	Cell 2	Cell 3
Cell 4	Cell 5	Cell 6
Cell 7	Cell 8	Cell 9

Table 1: Sample Table with Caption

Horizontal Rule

```markdown
---
```

```markdown
---
```

```markdown
---
```

Math Expressions

Inline Math

```markdown
This is inline math: $E = mc^2$
```

This is inline math: $E = mc^2$

Display Math

```markdown
$$
\int_{0}^{\infty} e^{-x^2} dx = \frac{\sqrt{\pi}}{2}
$$
```

$$\int_{0}^{\infty} e^{-x^2} dx = \frac{\sqrt{\pi}}{2}$$

Footnotes

Inline Footnote

```markdown
Text with inline footnote^[This is the footnote content].
```

Text with inline footnote[1] .

---

[1] This is the footnote content

Reference Footnote

```markdown
Text with reference footnote[^1].

[^1]: This is the footnote content.
```

Text with reference footnote[2] .

Keyboard Shortcuts

Single Key

```markdown
[[Ctrl]]
```

Ctrl

Key Combination with Plus

```markdown
[[Ctrl] + [C]]
```

Ctrl + C

Line Break

Using Two Spaces

Put two spaces at the end of a line 1 to create a line break.

```markdown
Line 1<space><space>
Line 2
```

Line 1
Line 2

Using Backslash

```markdown
Line 1\
Line 2
```

Line 1
Line 2

---

[2] This is the footnote content.

Using HTML `<br>` Tag

```markdown
Line 1<br>
Line 2
```

Line 1
Line 2

```markdown
Line 1<br/>
Line 2
```

Line 1
Line 2

Using Empty Line (Paragraph Break)

```markdown
Line 1

Line 2
```

Line 1
Line 2

Blockquotes

Basic Blockquote

```markdown
> This is a blockquote.
```

> This is a blockquote.

Multi-line Blockquote

```markdown
> This is a blockquote.
> It can span multiple lines.
>
> And multiple paragraphs.
```

> This is a blockquote. It can span multiple lines.
> And multiple paragraphs.

Nested Blockquotes

```markdown
> Level 1
>
> > Level 2
> >
> > > Level 3
```

> Level 1
>
> > Level 2
> >
> > > Level 3

Container Alerts

Note Alert

```markdown
::: note
This is a note alert with blue styling.
:::
```

NOTE

This is a note alert with blue styling.

Tip Alert

```markdown
::: tip
This is a tip alert with green styling.
:::
```

TIP

This is a tip alert with green styling.

Important Alert

```markdown
::: important
This is an important alert with purple styling.
:::
```

> **IMPORTANT**
> This is an important alert with purple styling.

Warning Alert

```markdown
::: warning
This is a warning alert with yellow/orange styling.
:::
```

> **WARNING**
> This is a warning alert with yellow/orange styling.

Caution Alert

```markdown
::: caution
This is a caution alert with red styling.
:::
```

> **CAUTION**
> This is a caution alert with red styling.

Text Alignment Containers

Center Alignment

```markdown
::: center
This text is centered
:::
```

This text is centered

Right Alignment

```markdown
::: right
Right-aligned text
:::
```

Right-aligned text

Box Container

Basic Box

```markdown
::: box
Text in a bordered box
:::
```

Text in a bordered box

Executable Code Blocks

The converter supports executing code blocks in various languages directly within your markdown and including their output or generated plots in the final PDF.

Supported Languages

- `python` (with persistent state across blocks - like Jupyter notebooks!)
- `javascript`
- `powershell`
- `bash`

Properties

- `.execute` : Execute the code block
- `.show-code` : Display the source code in the output
- `.show-output` : Display execution output/plot (default)
- `.hide-code` : Explicitly hide the source code (default)
- `.hide-output` : Hide execution output/plot
- `.cache` : Cache the execution output (default)
- `.no-cache` : Do not use cache and force re-execution
- `.highlightlines` : Highlight specific lines in the code block
- `.format=png|pdf` : Set plot output format (default: pdf, Python only)

Example 1: Python with Output

````markdown
```python {.execute .show-code .highlightlines=2,4-6}
print("Line 1")
print("Line 2")
print("Line 3")
print("Line 4")
print("Line 5")
print("Line 6")
```
````

```python
print("Line 1")
print("Line 2")
print("Line 3")
print("Line 4")
```

```python
print("Line 5")
print("Line 6")
```

```output
Line 1
Line 2
Line 3
Line 4
Line 5
Line 6
```

Example 2: JavaScript Execution

````markdown
```javascript {.execute .show-code}
const a = 5;
const b = 10;
console.log(`The sum of ${a} and ${b} is ${a + b}.`);
```
````

```javascript
const a = 5;
const b = 10;
console.log(`The sum of ${a} and ${b} is ${a + b}.`);
```

```output
The sum of 5 and 10 is 15.
```

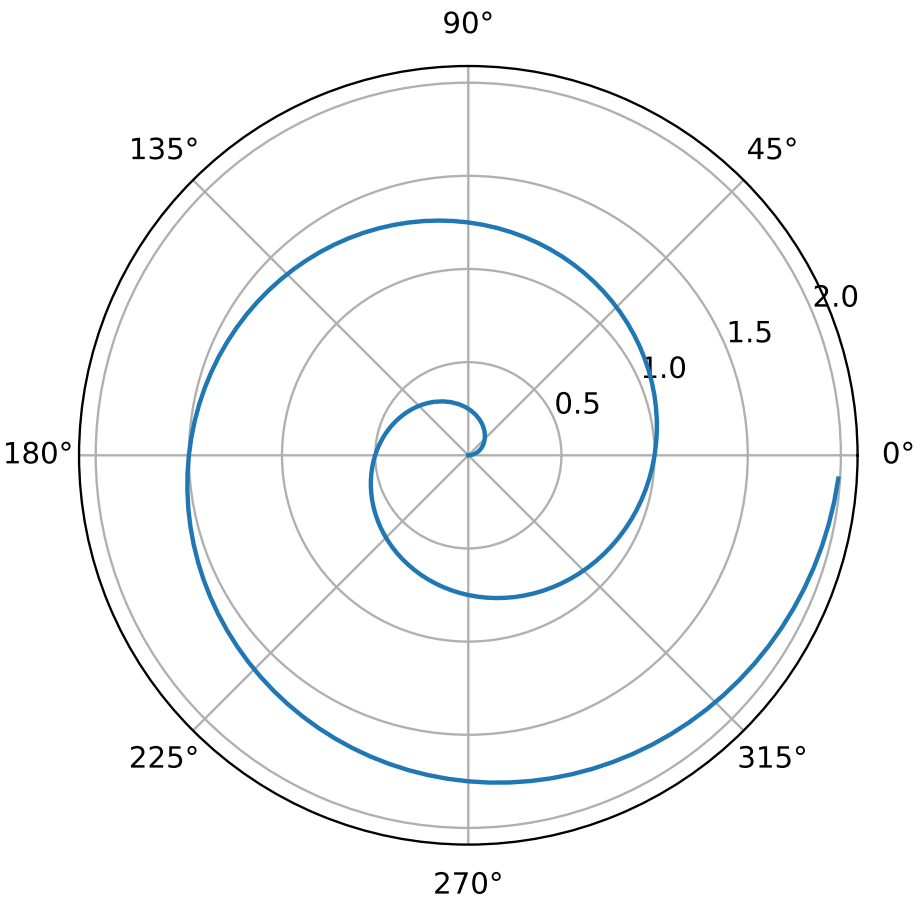
Example 3: Python Plotting

> **NOTE**
>
> The following example generates a polar plot using matplotlib. Install the required packages if you haven't already.
>
> ```powershell
> python -m pip install matplotlib numpy
> ```

````markdown
```python {.execute}
import numpy as np
import matplotlib.pyplot as plt

r = np.arange(0, 2, 0.01)
theta = 2 * np.pi * r
fig, ax = plt.subplots(
  subplot_kw = {'projection': 'polar'}
```
````

```markdown
)
ax.plot(theta, r)
ax.set_rticks([0.5, 1, 1.5, 2])
ax.grid(True)
plt.show()
```
```




# Document Metadata (JSON)

Document metadata is configured in a separate JSON file:

```json
{
  "title": "Document Title",
  "subtitle": "Course Name",
  "submittedto": "Professor Name",
  "university": "University Name",
  "department": "Department Name",
  "date": "January 1, 2025",
  "submittedby": [
    {
      "name": "Student Name",
```
```

```json
      "roll": "Registration Number"
    }
  ],
  "variables": {},
  "titleTemplate": "no-title",
  "enableContentPage": false,
  "tocDepth": 3,
  "enablePageCredits": false,
  "moveFootnotesToEnd": false,
  "footnotesAsComments": false,
  "enableThatsAllPage": false,
  "headingNumbering": true
}
```

Settings

- `title` : Document title
- `subtitle` : Document subtitle
- `submittedto` : Name of the person to whom the document is submitted
- `university` : Name of the university or institution
- `department` : Name of the department
- `date` : Date of submission
- `submittedby` : List of submitters with their names and registration numbers
- `variables` : Define custom variables to use throughout the document. See below
- `titleTemplate` : Controls the style of the title page. Options include:
  - `no-title` : No title (disabled) - Default
  - `university-title` : Full university title page with logo - Good for assignments and reports
  - `header-title` : Title header above content - Good for notes
  - `separate-page-title` : Title on separate page - Good for when table of content is enabled
- `enableContentPage` : Set to `true` to include a table of contents page
- `tocDepth` : Set the depth of the table of contents (1-6)
- `enablePageCredits` : Set to `true` to include credits
- `moveFootnotesToEnd` : Set to `true` to move all footnotes to the end of the document
- `footnotesAsComments` : Set to `true` to render footnotes as comments
- `enableThatsAllPage` : Set to `true` to include a ”That’s All” page at the end of the document
- `headingNumbering` : Set to `true` to enable automatic numbering of headings

`variables` Usage

You can define variables in the JSON metadata file and use them throughout your markdown document. Variables are defined under the `"variables"` key and referenced using `{{variable_name}}` syntax.

Example JSON with variables:

```json
{
  "variables": {
    "author": "abd",
    "version": "1.2.3",
```

```json
    "course": "CS 101",
    "semester": "Fall 2025",
    "university_full": "University of Engineering and Technology"
  }
}
```

```markdown
This report was written by {{author}} for {{course}} during
↪  {{semester}}.

Software version: {{version}}

Institution: {{university_full}}
```

This report was written by abd for CS 101 during Fall 2025.
Software version: 1.2.3
Institution: University of Engineering and Technology