

1 Markdown to LaTeX Comprehensive Guide

This guide demonstrates all supported markdown syntax features for the md-to-luatex converter.

1.1 Headings

```
% % % %  
# Heading 1  
## Heading 2  
### Heading 3  
#### Heading 4  
##### Heading 5  
###### Heading 6
```

markdown

2 Heading 1

2.1 Heading 2

2.1.1 Heading 3

Heading 4

Heading 5

Heading 6

2.2 Text Formatting

2.2.1 Bold

```
**bold text** or __bold text__
```

markdown

bold text or **bold text**

2.2.2 Italic

```
_italic text_ or *italic text*
```

markdown

italic text or *italic text*

2.2.3 Bold + Italic

```
**_bold and italic_* or ***bold and italic***
```

markdown

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

2.2.4 Strikethrough

~~~~strikethrough text~~~~

## markdown

~~strikethrough~~ text

## 2.2.5 Highlight

--highlighted text--

## markdown

highlighted text

## 2.2.6 Superscript

<sup>^superscript^</sup> (e.g.,  $x^2$ )

## markdown

superscript (e.g.,  $x^2$ )

### 2.2.7 Subscript

$\sim$ subscript $\sim$  (e.g., H $\sim$ 2 $\sim$ 0)

markdown

subscript (e.g., H<sub>2</sub>O)

### 2.2.8 Small Caps

:sc[Small Caps Text]

## markdown

## SMALL CAPS TEXT

### 2.2.9 Underline

:u[Underlined Text]

## markdown

## Underlined Text

## 2.2.10 Emojis

□ □ □ □ □ □ □ □ □ □ □ □

## markdown



## markdown

□ □ □ □ □ □ □ □ □



□ □ □ □ □ □ □ □

markdown



## 2.3 Inline Code

`inline code`

markdown

inline code

## 2.4 Code Blocks

### 2.4.1 Fenced Code Block

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

markdown

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

python

### 2.4.2 Code Block Without Language

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

markdown

```
plain text code block
```

### 2.4.3 Terminal Block

```
```terminal
$ command
output result
```
```

markdown

```
$ command
output result
```

text

## 2.5 Links

markdown

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

link text

markdown

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

link text

## 2.6 Images

markdown

```
![alt text](image.png)
```



markdown

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

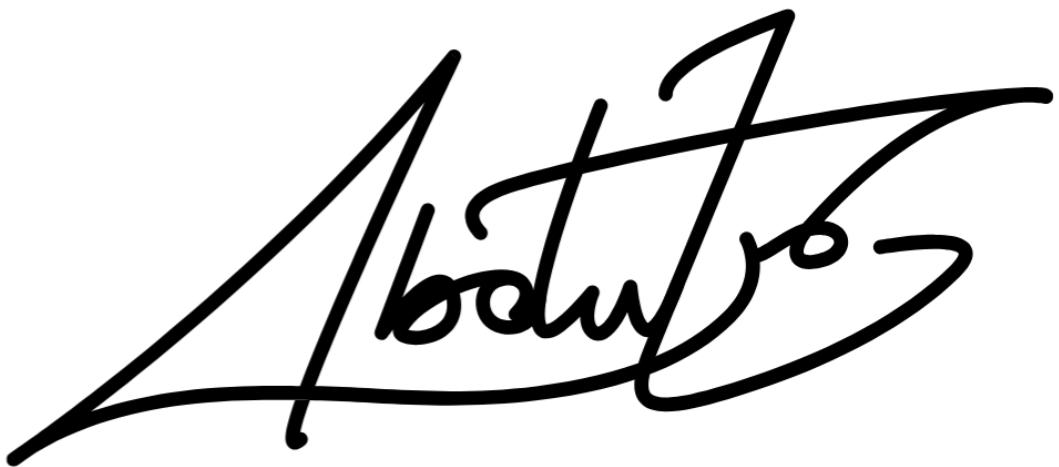
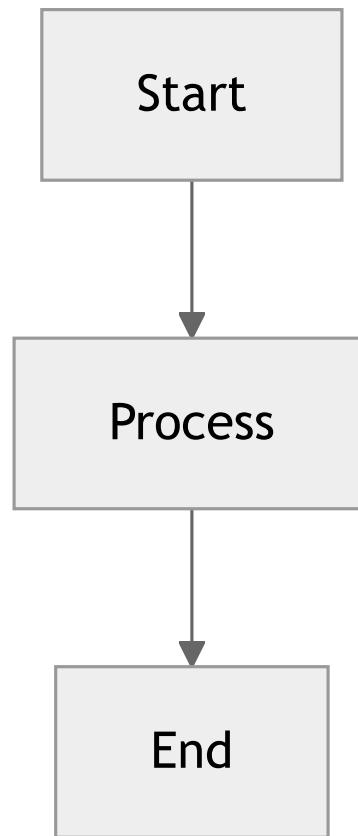


Figure 1: title

## 2.7 Mermaid Diagrams

```
```mermaid
graph TD
    A[Start] --> B[Process]
    B --> C[End]
````
```

markdown



## 2.8 Lists

### 2.8.1 Unordered List

```
- 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
```

### 2.8.2 Ordered List

```
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

### 2.8.3 Task Lists

markdown

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

- Completed task
- Incomplete task
- Partially completed task

## 2.9 Definition Lists

markdown

Term 1  
: Definition 1

Term 2  
: Definition 2a  
: Definition 2b

**Term 1**  
Definition 1

**Term 2**  
Definition 2a  
Definition 2b

## 2.10 Tables

### 2.10.1 Pipe Tables

markdown

| Left | Center | Right | Default |
|------|--------|-------|---------|
| L1   | C1     | R1    | Default |
| L2   | C2     | R2    | Default |

| Left | Center | Right | Default |
|------|--------|-------|---------|
| L1   | C1     | R1    | Default |
| L2   | C2     | R2    | Default |

## 2.11 Table with Captions

markdown

| Header 1 | Header 2 | Header 3 |
|----------|----------|----------|
| Cell 1   | Cell 2   | Cell 3   |
| Cell 4   | Cell 5   | Cell 6   |

: Sample Table with Caption

| Header 1 | Header 2 | Header 3 |
|----------|----------|----------|
| Cell 1   | Cell 2   | Cell 3   |
| Cell 4   | Cell 5   | Cell 6   |

Table 1: Sample Table with Caption

## 2.12 Horizontal Rule

markdown

---

markdown

----

markdown

\*\*\*

## 2.13 Math Expressions

### 2.13.1 Inline Math

markdown

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

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

### 2.13.2 Display Math

markdown

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

$$\int_0^\infty e^{-x^2} dx = \frac{\sqrt{\pi}}{2}$$

## 2.14 Footnotes

### 2.14.1 Inline Footnote

markdown

Text with inline footnote<sup>[1]</sup> [This is the footnote content].

Text with inline footnote<sup>[1]</sup> .

### 2.14.2 Reference Footnote

markdown

Text with reference footnote<sup>[^1]</sup>.

[^1]: This is the footnote content.

Text with reference footnote<sup>[2]</sup> .

## 2.15 Keyboard Shortcuts

### 2.15.1 Single Key

markdown

[[Ctrl]]

 Ctrl

### 2.15.2 Key Combination with Plus

markdown

[[Ctrl] + [C]]

  Ctrl + C

## 2.16 Line Break

### 2.16.1 Using Two Spaces

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

---

[1] This is the footnote content

[2] This is the footnote content.

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

Line 1  
Line 2

### 2.16.2 Using Backslash

```
Line 1\
Line 2
```

Line 1  
Line 2

### 2.16.3 Using HTML <br> Tag

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

Line 1  
Line 2

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

Line 1  
Line 2

### 2.16.4 Using Empty Line (Paragraph Break)

```
Line 1
Line 2
```

Line 1  
Line 2

## 2.17 Blockquotes

### 2.17.1 Basic Blockquote

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

This is a blockquote.

### 2.17.2 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.

### 2.17.3 Nested Blockquotes

markdown

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

Level 1  
| Level 2  
| | Level 3

## 2.18 Container Alerts

### 2.18.1 Note Alert

markdown

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

#### NOTE

This is a note alert with blue styling.

### 2.18.2 Tip Alert

markdown

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

#### TIP

This is a tip alert with green styling.

### 2.18.3 Important Alert

markdown

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

#### IMPORTANT

This is an important alert with purple styling.

### 2.18.4 Warning Alert

markdown

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

#### WARNING

This is a warning alert with yellow/orange styling.

### 2.18.5 Caution Alert

markdown

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

#### CAUTION

This is a caution alert with red styling.

## 2.19 Text Alignment Containers

### 2.19.1 Center Alignment

markdown

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

This text is centered

### 2.19.2 Right Alignment

markdown

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

Right-aligned text

## 2.20 Box Container

### 2.20.1 Basic Box

```
```box
Text in a bordered box
```
```

Text in a bordered box

## 2.21 Executable Python Code Blocks

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

### 2.21.1 Prerequisites

For Python code execution to work, you need Python installed on your system. To generate plots with matplotlib, install the required packages:

```
python -m pip install matplotlib numpy
```

### 2.21.2 Available Properties

- **.execute** - Execute the code block (required)
- **.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

### 2.21.3 Examples 1

```
```python {.execute}
print("Hello, World!")
````
```

Hello, World!

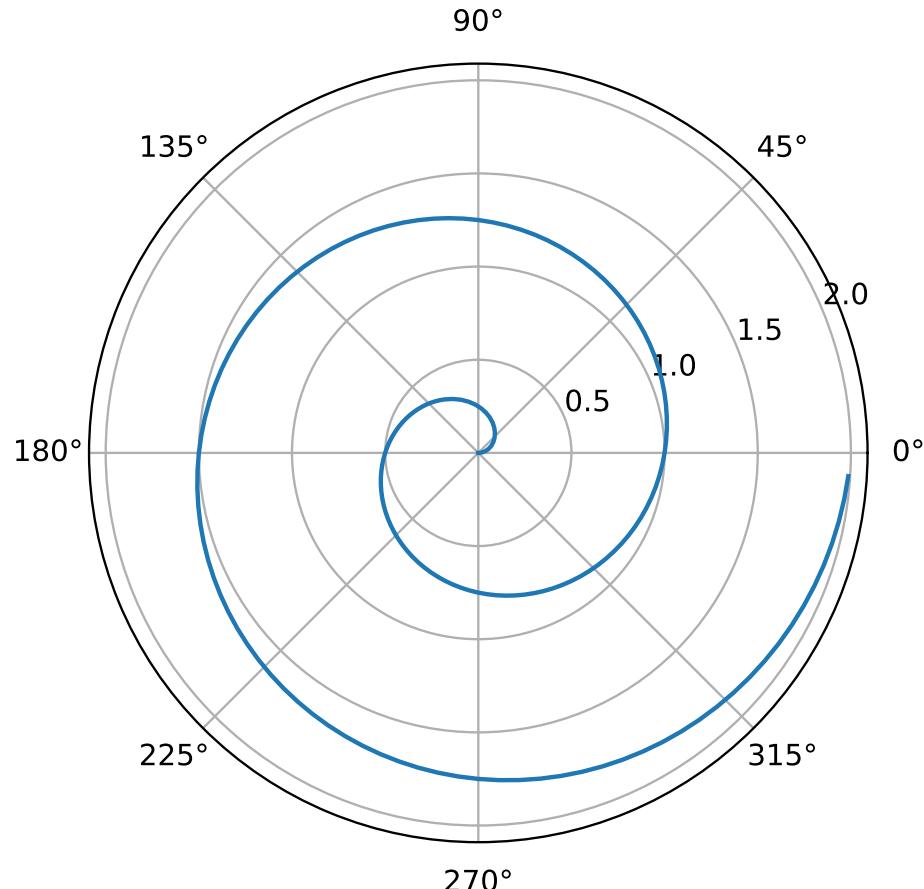
### 2.21.4 Examples 2

```
```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'}
)````
```

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

markdown



## 2.22 Document Metadata (JSON)

Document metadata is configured in a separate JSON file:

```
{
  "title": "Document Title",
  "subtitle": "Course Name",
  "submittedto": "Professor Name",
  "university": "University Name",
  "department": "Department Name",
  "date": "January 1, 2024",
  "submittedby": [
    {
      "name": "Student Name",
      "roll": "Registration Number"
    }
  ],
  "titleTemplate": 1,
  "enableContentPage": false,
```

json

```

"enablePageCredits": false,
"moveFootnotesToEnd": false,
"enableThat'sAllPage": false,
"tocDepth": 3,
"variables": {}
}

```

json

### 2.22.1 Title Template Modes

The `titleTemplate` setting controls how the title page is displayed:

- **0** : No title (disabled)
- **1** : Full university title page with logo (default) - Good for assignments and reports
- **2** : Title header above content - Good for notes
- **3** : Title on separate page - Good for when the contents are enabled

### 2.22.2 JSON Variables

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:**

```

{
  "variables": {
    "author": "abd",
    "version": "1.2.3",
    "course": "CS 101",
    "semester": "Fall 2025",
    "university_full": "University of Engineering and Technology"
  }
}

```

json

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

Software version: {{version}}

Institution: {{university\_full}}

markdown

This report was written by abd for CS 101 during Fall 2025.

Software version: 1.2.3

Institution: University of Engineering and Technology