

# 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__
```

**bold text** or **bold text**

markdown

#### 2.2.2 Italic

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

*italic text* or *italic text*

markdown

#### 2.2.3 Bold + Italic

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

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

markdown

### 2.2.4 Strikethrough

markdown

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

~~strikethrough text~~

### 2.2.5 Highlight

markdown

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

highlighted text

### 2.2.6 Superscript

markdown

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

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

### 2.2.7 Subscript

markdown

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

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

### 2.2.8 Small Caps

markdown

```
:sc[Small Caps Text]
```

SMALL CAPS TEXT

### 2.2.9 Underline

markdown

```
:u[Underlined Text]
```

Underlined Text

## 2.3 Inline Code

markdown

```
`inline code`
```

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

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

markdown

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

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

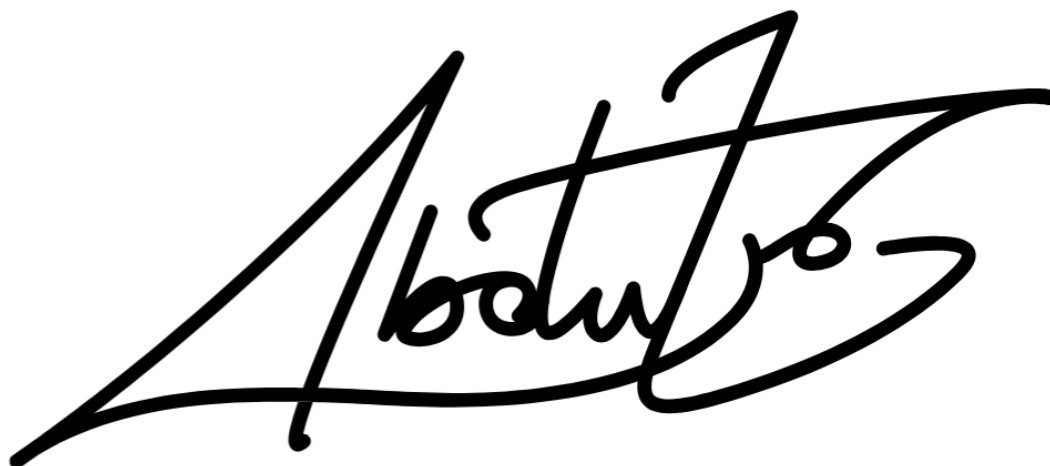
markdown

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

## 2.6 Images

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

markdown



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

markdown

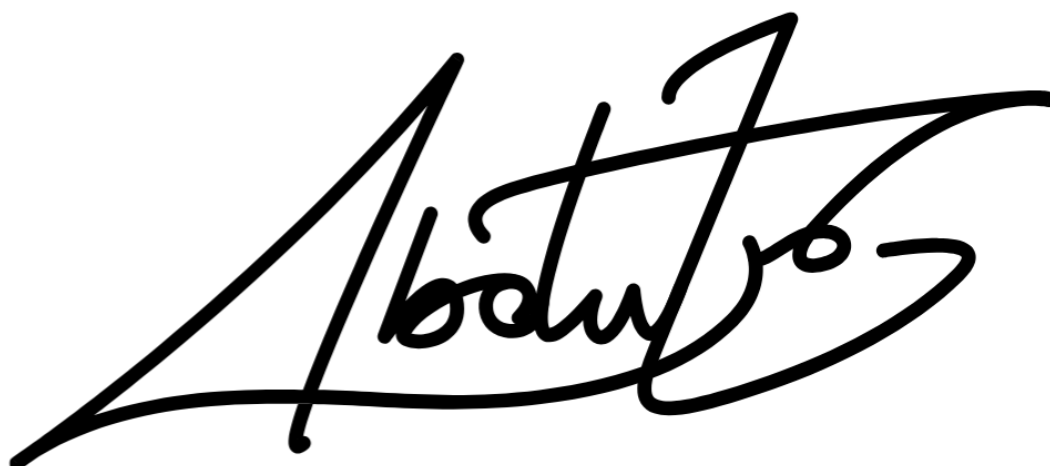
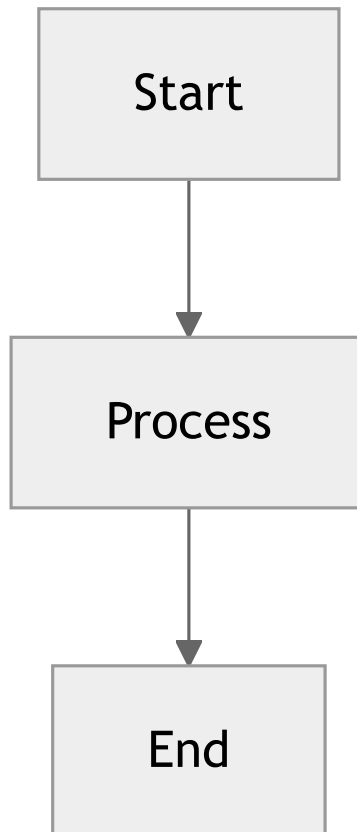


Figure 1: title

## 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

markdown

- 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

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

- ☒ Completed task
- ☐ Incomplete task
- ☐ Partially completed task

## 2.9 Definition Lists

```
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

```
| 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

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

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

## 2.14 Footnotes

### 2.14.1 Inline Footnote

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

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

### 2.14.2 Reference Footnote

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

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

## 2.15 Keyboard Shortcuts

### 2.15.1 Single Key

```
[[Ctrl]]
```

Ctrl

### 2.15.2 Key Combination with Plus

```
[[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.



markdown

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

Line 1  
Line 2

### 2.16.2 Using Backslash

markdown

```
Line 1\
Line 2
```

Line 1  
Line 2

### 2.16.3 Using HTML `<br>` Tag

markdown

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

Line 1  
Line 2

markdown

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

Line 1  
Line 2

### 2.16.4 Using Empty Line (Paragraph Break)

markdown

```
Line 1
Line 2
```

Line 1  
Line 2

## 2.17 Blockquotes

### 2.17.1 Basic Blockquote

markdown

```
> 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

```

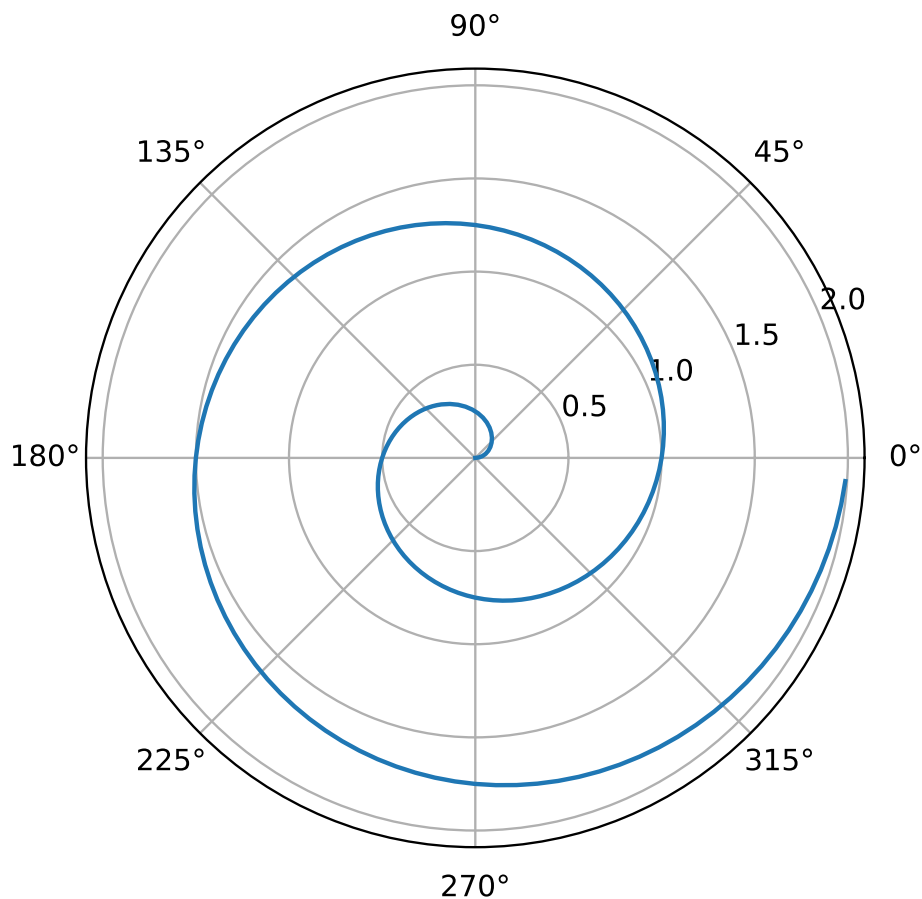
```python {.execute}
import numpy as np
import matplotlib.pyplot as plt

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,  
"enableThatsAllPage": false,  
"tocDepth": 3,  
"variables": {}  
}
```

### 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"  
  }  
}
```

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