To convert Markdown to PDF in Python, there are several tools and libraries available, each with its own features and installation processes. Here are some of the most notable options:

1. `markdown-pdf` Python Module

The `markdown-pdf` module is a free, open-source Python tool that allows you to convert Markdown files to PDF. It supports UTF-8 encoded text, embedding images, creating a Table of Contents, and using custom CSS for styling.

Installation

```
pip install markdown-pdf
```

Usage

```
from markdown_pdf import MarkdownPdf, Section

# Create a PDF with a Table of Contents (TOC) from headings up to level 2
pdf = MarkdownPdf(toc_level=2)

# Add sections to the PDF
pdf.add_section(Section("# Title
", toc=False))
pdf.add_section(Section("# Head1

![python](img/python.png)

body
", user_css="h1 {text-align:center;}"))
pdf.add_section(Section("## Head2

### Head3

", paper_size="A4-L"))
```

```
# Set PDF metadata
pdf.meta["title"] = "User Guide"
pdf.meta["author"] = "Vitaly Bogomolov"

# Save the PDF to a file
pdf.save("guide.pdf")
```

This module uses `markdown-it-py` to convert Markdown to HTML and `PyMuPDF` to convert HTML to PDF[3].

2. `md2pdf` Python Module

The `md2pdf` tool is another Python-based solution that uses WeasyPrint for converting HTML to PDF.

Installation

```
pip install md2pdf
```

Usage

```
from md2pdf.core import md2pdf

# Convert a Markdown file to PDF
md2pdf(pdf="output.pdf", md="input.md", css="style.css")
```

This tool allows you to specify custom CSS and activate Markdown extras like fenced code blocks[17].

3. `markdown2` and `pdfkit`

You can use `markdown2` to convert Markdown to HTML and `pdfkit` to convert HTML to PDF.

Installation

```
pip install markdown2 pdfkit
```

Usage

```
import markdown2
import pdfkit

# Read the Markdown file
with open("input.md", "r") as f:
    markdown_text = f.read()

# Convert Markdown to HTML
html_text = markdown2.markdown(markdown_text)

# Save HTML to a file
with open("output.html", "w") as f:
    f.write(html_text)

# Convert HTML to PDF
pdfkit.from_file("output.html", "output.pdf")
```

This method uses `wkhtmltopdf` for the HTML to PDF conversion, which must be installed and available in your PATH[9].

4. `md-to-pdf` CLI Tool

The `md-to-pdf` tool is a command-line interface (CLI) tool that can be used programmatically in Python scripts.

Installation

```
npm install -g md-to-pdf
```

Usage

```
md-to-pdf input.md
```

This tool uses `Marked` to convert Markdown to HTML and `Puppeteer` to convert HTML to PDF. It supports custom stylesheets, headers, footers, and more[2].

5. `Pandoc`

Pandoc is a versatile document converter that can convert Markdown to PDF using LaTeX.

Installation

```
sudo apt-get install pandoc
sudo apt-get install texlive
```

Usage

```
pandoc input.md -o output.pdf
```

Pandoc supports a wide range of formatting options and can be customized extensively using LaTeX templates[7].

Each of these tools has its own strengths and can be chosen based on your specific needs, such as ease of use, customization options, or integration with other tools.

Citations: [1] https://www.markdowntopdf.com [2] https://www.npmjs.com/package/md-to-pdf [3] https://github.com/vb64/markdown-pdf [4] https://pypi.org/project/mdpdf/ [5] https://github.com/ljpengelen/markdown-to-pdf [6] https://gist.github.com/justincbagley/ec0a6334cc86e854715e459349ab1446 [7] https://tiiny.host/blog/pandoc-markdown-pdf/ [8] https://stackoverflow.com/questions/17630486/how-to-convert-a-markdown-file-to-pdf [9] https://gist.github.com/engineervix/2385a54a4019b3f4526e [10] https://github.com/topics/markdown-to-pdf?l=python [11] https://marketplace.visualstudio.com/items?itemName=yzane.markdown-pdf [12] https://python-markdown.github.io/reference/ [13] https://github.com/yzane/vscode-markdown-pdf [14] https://python-markdown.github.io [15] https://www.honeybadger.io/blog/python-markdown/ [16] https://stackoverflow.com/questions/58960478/python-library-for-dynamic-documents [17] https://github.com/jmaupetit/md2pdf [18] https://github.com/trentm/python-markdown2 [19] https://github.com/Python-Markdown/markdown [20] https://pypi.org/project/Markdown/