



GerdsenAi

GerdsenAI Document Builder

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GerdSenAI Document Builder

A professional document builder that converts Markdown and text files into stunning, professional PDFs with custom styling, terminal-themed code blocks, and intelligent text formatting.

Features

Professional Design

- Custom Cover Pages with logo, title, author, and metadata
- SF Pro Font Support for Apple-style typography (falls back to Helvetica if unavailable)
- 1-inch Margins on all sides for professional printing
- Page Numbers & Headers on all pages except cover
- Logo in Footer for brand consistency

Terminal-Style Code Formatting

- Code Blocks: Black background with bright green text (#00ff00) for authentic terminal appearance
- Inline Code: Bright green (#00c853) Courier-Bold font for visibility
- Syntax Preservation: Proper escaping of special characters
- Multi-line Support: Handles triple-backtick (``) markdown code blocks

Intelligent Text Formatting

- Smart Justification: Automatically switches between justified and left-aligned text based on content
- Dynamic Alignment Rules:
 - Paragraphs with 2+ inline code snippets → Left aligned (prevents spacing issues)
 - Short paragraphs (<150 characters) → Left aligned
 - Long narrative text → Justified for professional appearance
- Word Wrapping: Proper handling of long technical terms
- Hyphenation Support: For better text distribution

Technical Features

- Markdown Support: Full markdown parsing with extensions (tables, footnotes, etc.)
- Metadata Extraction: YAML front matter support for document metadata
- Table Formatting: Professional table styling with alternating row colors
- Blockquote Styling: Distinctive formatting with blue accent border
- Multiple Document Processing: Build single or multiple documents at once
- Configurable Filename Prefix: Add custom prefixes to generated PDFs (default: GerdSenAI_)

Installation and Setup

Prerequisites

All Platforms:

- Python 3.9 or higher
- Git (for cloning the repository)

Platform-specific:

- **macOS:** Homebrew (optional, for additional fonts)
- **Windows:** Windows 10/11 or Windows Subsystem for Linux (WSL)
- **Linux:** Standard package manager (apt, yum, pacman, etc.)

Clone Repository

```
git clone https://github.com/GerdSenAI/GerdSenAI_Document_Builder.git
cd GerdSenAI_Document_Builder
```

Setup Instructions by Platform

1. Ensure Python 3.9+ is installed: bash python3 --version If not installed, download from python.org or use Homebrew: bash brew install python@3.11
2. Create and activate virtual environment: bash python3 -m venv venv source venv/bin/activate
3. Install dependencies: bash pip install -r requirements.txt
4. Make build script executable: bash chmod +x build_document.sh

1. Ensure Python 3.9+ is installed: cmd python --version If not installed, download from python.org and ensure "Add to PATH" is checked.
2. Create and activate virtual environment: cmd python -m venv venv venv\Scripts\activate
3. Install dependencies: cmd pip install -r requirements.txt

4. Build documents using Python directly: cmd python document_builder_reportlab.py --help

1. Ensure Python 3.9+ is installed: bash python3 --version

Ubuntu/Debian:

```
bash sudo apt update sudo apt install python3 python3-pip python3-venv
```

CentOS/RHEL/Fedora:

```
bash sudo yum install python3 python3-pip # CentOS/RHEL sudo dnf install python3 python3-pip  
# Fedora
```

Arch Linux:

```
bash sudo pacman -S python python-pip
```

1. Create and activate virtual environment: bash python3 -m venv venv source venv/bin/activate

2. Install dependencies: bash pip install -r requirements.txt

3. Make build script executable: bash chmod +x build_document.sh

1. Install WSL2 and Ubuntu: powershell wsl --install

2. Open WSL terminal and follow Linux setup instructions above

3. Access Windows files from WSL: bash cd /mnt/c/Users/YourUsername/path/to/project

VSCode Setup

1. Install VSCode: Download from code.visualstudio.com

2. Install Python extension: - Open VSCode - Go to Extensions (Ctrl+Shift+X / Cmd+Shift+X) - Search for "Python" by Microsoft - Click Install

1. Open project in VSCode: bash code .

2. Select Python interpreter: - Press Ctrl+Shift+P (Windows/Linux) or Cmd+Shift+P (macOS) - Type "Python: Select Interpreter" - Choose the interpreter from your virtual environment: macOS/Linux: ./venv/bin/python Windows: .\venv\Scripts\python.exe

3. Verify setup: - Open a Python file (e.g., document_builder_reportlab.py) - Check bottom-left corner shows correct Python version and virtual environment

Create `.vscode/settings.json` for consistent project settings:

```
{
  "python.defaultInterpreterPath": "./venv/bin/python",
  "python.terminal.activateEnvironment": true,
  "python.linting.enabled": true,
  "python.linting.pylintEnabled": true,
  "files.associations": {
    "*.md": "markdown"
  }
}
```

Repository Structure

```

GerdSenAI_Document_Builder/
└── To_Build/ # Place your .md or .txt files here
└── PDFs/ # Generated PDFs are saved here
└── Assets/ # Logo and cover images
    └── GerdSenAI_Neural_G_Invoice.png
└── SF_Pro/ # SF Pro font files (optional)
    └── SF-Pro-Rounded-Regular.otf
    └── SF-Pro-Rounded-Bold.otf
    ...
└── .vscode/ # VSCode configuration (auto-created)
    └── settings.json
└── venv/ # Virtual environment (auto-created)
    └── document_builder_reportlab.py # Main document builder
    └── build_document.sh # Shell script for easy building (macOS/Linux)
    └── config.yaml # Default configuration
    └── requirements.txt # Python dependencies
    └── LICENSE.txt # MIT License
    └── README.md # This file

```

Usage

Building Documents

1. Place your markdown files in the To_Build folder
 2. Activate virtual environment: bash source venv/bin/activate
 3. Build specific document: bash ./build_document.sh your_document.md
 4. Build all documents: bash ./build_document.sh --all
 5. Setup environment: bash ./build_document.sh --setup
 6. Clean PDFs: bash ./build_document.sh --clean
 7. Show help: bash ./build_document.sh --help
-
1. Activate virtual environment:

macOS/Linux:

bash source venv/bin/activate

Windows:

cmd venv\Scripts\activate

1. Build documents: bash python document_builder_reportlab.py --help python document_builder_reportlab.py input_file.md python document_builder_reportlab.py --all

Document Format

```
---
title: Your Document Title
author: Your Name
date: August 22, 2025
version: 1.0.0
---

# Introduction

Your content here with **bold**, *italic*, and `inline code`.

## Code Example

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

```

Features

- Bullet points
- With smart formatting
- And proper spacing

```
### Configuration

Edit `config.yaml` to customize default settings:

```yaml
default:
 author: "Your Name"
 company: "Your Company"
 version: "1.0.0"
 filename_prefix: "GerdSenAI_" # Prefix for generated PDFs

margins:
 top: 25 # mm
 right: 20 # mm
 bottom: 25 # mm
 left: 20 # mm
```

```

The `filename_prefix` setting adds a custom prefix to all generated PDFs:

- Default: `GerdSenAI_`
- Example output: `GerdSenAI_document_20250822_123456.pdf`
- Set to empty string ("") to disable prefix

Styling Features

Code Blocks

- Terminal Theme: Black background (#000000) with bright green text (#00ff00)
- Border: Dark gray (#333333) for definition
- Padding: 8pt for comfortable reading

- Font: Courier monospace for authenticity

Inline Code

- Color: Bright green (#00c853)
- Font: Courier-Bold for emphasis
- Size: 10pt for visibility

Text Alignment Logic

The document builder intelligently decides text alignment:

| Content Type | Alignment | Reason |
|----------------------------------|-----------|----------------------------|
| Long paragraphs (>150 chars) | Justified | Professional appearance |
| Short paragraphs (<150 chars) | Left | Prevents excessive spacing |
| Paragraphs with 2+ code snippets | Left | Avoids justification gaps |
| Headers | Left | Standard formatting |
| Code blocks | Left | Preserves formatting |

Advanced Features

Custom Fonts

The builder supports SF Pro fonts but falls back gracefully to system fonts:

1. **Primary:** SF Pro Rounded (if available)
2. **Fallback:** Helvetica, Arial, sans-serif

Metadata Support

Documents can include metadata in YAML front matter:

- **title:** Document title (shown on cover and headers)
- **author:** Author name
- **date:** Publication date
- **version:** Document version
- **subtitle:** Optional subtitle for cover page

Page Layout

- Cover Page: Automatically generated with logo and metadata

- Headers: Document title on all pages except cover
- Footers: Page numbers and centered logo
- Margins: 1 inch on all sides for professional printing

Troubleshooting

Common Issues

macOS/Linux:

```
# Ensure venv exists
python3 -m venv venv
source venv/bin/activate
```

Windows:

```
# Ensure venv exists
python -m venv venv
venv\Scripts\activate
```

If you see warnings about SF Pro fonts:

- These are optional - the document will still build correctly
- Uses Helvetica as fallback
- To use SF Pro, ensure .otf files are in the SF Pro directory

```
chmod +x build_document.sh
```

```
# Activate venv first
source venv/bin/activate # macOS/Linux
# OR
venv\Scripts\activate # Windows

# Then reinstall
pip install -r requirements.txt
```

1. Press Ctrl+Shift+P / Cmd+Shift+P
2. Type "Python: Select Interpreter"
3. Choose the virtual environment Python
4. Restart VSCode if needed

If you encounter path-related errors on Windows:

- Use forward slashes `/` in paths when possible
- Ensure virtual environment is activated
- Use `python` instead of `python3` on Windows

Dependencies and Credits

This project is built with the following excellent open-source packages:

Core Dependencies

- ReportLab (>=4.0.0) - Powerful PDF generation library
- License: BSD-style license
- Used for: PDF creation, styling, and layout management
- Python-Markdown (>=3.5.0) - Markdown to HTML converter
- License: BSD License
- Used for: Converting Markdown syntax to HTML for processing
- Beautiful Soup 4 (>=4.12.0) - HTML/XML parser
- License: MIT License
- Used for: HTML parsing and manipulation
- Pillow (>=10.0.0) - Python Imaging Library
- License: HPND License
- Used for: Image processing and manipulation
- PyYAML (>=6.0) - YAML parser and emitter
- License: MIT License
- Used for: Configuration file parsing and YAML front matter

Optional Dependencies

- Watchdog (>=3.0.0) - File system monitoring
- License: Apache License 2.0
- Used for: Automatic rebuilding on file changes
- PyMdown Extensions (>=10.0) - Markdown extensions
- License: MIT License
- Used for: Enhanced Markdown features (tables, code blocks, etc.)

System Requirements

- Python 3.9+ - Programming language runtime
- Git - Version control system for cloning repository

Font Credits

- SF Pro - Apple's system font family (optional)
- Used with permission for enhanced typography
- Falls back to system fonts (Helvetica, Arial) if unavailable

Development Tools

- VSCode - Recommended IDE with Python extension
- Pylance - Python language server for VSCode

Performance Notes

Build Times

- Single document: ~1-3 seconds
- Multiple documents: ~2-5 seconds per document
- Large documents (>50 pages): ~5-10 seconds

Memory Usage

- Typical usage: 50-100MB RAM
- Large documents with images: 100-200MB RAM
- Batch processing: Scales linearly with document count

Output Quality

- Resolution: 300 DPI for print quality
- Color Space: RGB for digital viewing
- Compression: Optimized for file size while maintaining quality

License

MIT License

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Contributing

Contributions are welcome! Please feel free to submit a Pull Request.

Development Setup

1. Fork the repository
2. Create a feature branch
3. Follow the setup instructions for your platform
4. Make your changes
5. Test thoroughly across platforms
6. Submit a pull request

Code Style

- Follow PEP 8 for Python code
- Use meaningful variable names
- Add comments for complex logic
- Update documentation for new features

Author

GerdSenAI

- Advanced AI solutions for document processing
- Professional document automation tools

Acknowledgments

- ReportLab Team for providing excellent PDF generation capabilities
- Python Software Foundation for the Markdown library
- Beautiful Soup contributors for robust HTML parsing
- Pillow maintainers for comprehensive image processing
- PyYAML developers for reliable YAML parsing
- Open Source Community for making these tools freely available
- Apple Inc. for the SF Pro font family design inspiration
- VSCode Team for the excellent development environment

Quick Start: Place your markdown files in the `To_Build` folder, activate your virtual environment, and run `./build_document.sh` (macOS/Linux) or `python document_builder_reportlab.py` (all platforms) to generate professional PDFs with terminal-style code formatting and intelligent text alignment.