Customizing the LaTeX Template: A Comprehensive Guide

A step-by-step guide to modifying the template structure

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2024-11-09

0.0.1 Overview

This guide provides detailed instructions for customizing the LaTeX template used for PDF generation with Quarto. The template is built using KOMA-Script's `scrartcl` class and includes custom styling for typography, colors, and layout.

0.0.2 Basic Structure

The template is organized into several key sections:

1. Document Class and Basic Packages
2. Font Configuration
3. Color Definitions
4. Header and Footer Setup
5. Title Page Formatting
6. Section Styling

0.0.3 Font Configuration

Current Setup

The template uses three main fonts: - Roboto (main text) - Roboto Slab (headings) - JetBrains Mono (code)
To modify fonts:

```
\setmainfont{NewFont}[
    Path = ./fonts/,
    Extension = .ttf,
    UprightFont = *-Regular,
    BoldFont = *-Bold,
    ItalicFont = *-Italic,
    BoldItalicFont = *-BoldItalic
]
```

Note: Ensure your font files are in the `./fonts/` directory and update the file names accordingly.

0.0.4 Color Scheme

The template uses three main colors:

```
\definecolor{deepnavy}{HTML}{2D3047}   % Primary color for headings
\definecolor{forestgreen}{HTML}{419D78} % Secondary color for subheadings
\definecolor{charcoal}{HTML}{434A4F}   % Tertiary color for text
```

To modify colors: 1. Choose your new color hex codes 2. Update the color definitions 3. Check all references to these colors in the document

0.0.5 Headers and Footers

The current header configuration:

- First page: No headers or footers
- Subsequent pages:
    - Left header: "Shubham Dutta"
    - Right header: Page number

To modify:

```
% Change header text
\ihead*{\headingfont\small\textcolor{charcoal}{Your New Header}}

% Remove headers from first page
\AtBeginDocument{\thispagestyle{empty}}

% Modify header styling
\addtokomafont{pageheadfoot}{\headingfont\small}
```

0.0.6 Title Page Elements

The title page elements are left-aligned with custom spacing. The structure is controlled by the `\maketitle` command:

```
\renewcommand{\maketitle}{%
    \noindent{\usekomafont{title}\@title}\par
    \vspace{0.5em}
    \ifx\@subtitle\@empty\else
        \noindent{\usekomafont{subtitle}\@subtitle}\par
    \fi
    % ... additional elements
}
```

To modify: 1. Adjust `\vspace` values for different spacing 2. Change font styling using `\addtokomafont` 3. Add new elements by extending the `\maketitle` command

0.0.7 Section Styling

Sections are unnumbered and styled with custom colors and fonts:

```
% Remove section numbering
\setcounter{secnumdepth}{-1}

% Section styling
\addtokomafont{section}{\headingfont\color{deepnavy}\Large}
\addtokomafont{subsection}{\headingfont\color{forestgreen}\large}
```

To modify: 1. Enable section numbering: Remove or comment out `\setcounter{secnumdepth}{-1}` 2. Change section appearance: Update `\addtokomafont` commands

0.0.8 Page Geometry

Page margins are set to 25mm on all sides:

```
\geometry{
    top=25mm,
    left=25mm,
    right=25mm,
    bottom=25mm
}
```

To modify: 1. Update values in the geometry settings 2. Use different units if needed (e.g., cm, in)

0.0.9 Common Modifications

1. Adding a Logo

```
% In the preamble
\usepackage{graphicx}

% In the \maketitle command
\includegraphics[width=2in]{path/to/logo}
```

2. Changing Line Spacing

```
% Add to preamble
\usepackage{setspace}
\onehalfspacing  % or \doublespacing
```

3. Modifying Page Numbers

```
% Change format
\renewcommand{\pagemark}{{\headingfont\small\thepage}}

% Change position
\ofoot{\pagemark}  % Move to footer
```

4. Adding Custom Headers

```
% Add to preamble
\usepackage{fancyhdr}
\pagestyle{fancy}
% Configure as needed
```

0.0.10 Using with Quarto

To use this template with Quarto:

1. Save the template as `template.tex`
2. In your Quarto document YAML:

```yaml
format:
  pdf:
    template: template.tex
    keep-tex: true  # Optional: keep generated LaTeX
```

0.0.11 Troubleshooting

Common issues and solutions:

1. **Font not found errors**

   - Ensure fonts are in the correct directory
   - Check font file names match the template
   - Verify font files are accessible

2. **Header/Footer issues**

   - Check `scrpage2` package loading
   - Verify page style commands
   - Check for conflicting packages

3. **Color undefined errors**

   - Ensure `xcolor` package is loaded
   - Verify color definitions
   - Check for typos in color names

0.0.12 Best Practices

1. Always backup the original template before making modifications
2. Test changes incrementally
3. Comment your modifications for future reference
4. Keep a changelog of major modifications
5. Test with different content types (tables, figures, code blocks)

0.0.13 Additional Resources

- KOMA-Script Documentation
- Quarto LaTeX Guide
- LaTeX Font Catalogue