

RMarkdown Template for Assignments

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Throughout the semester, we will use a custom format for reporting analysis results instead of the default RMarkdown template. This short note explains the source code of the suggested version of the analytic report. The template source has three components:

1 YAML Header

In RMarkdown, the **YAML header** (also called the YAML metadata block) is a section at the top of an **.Rmd** file that defines document settings, such as output format, title, author, and other customization options. It uses YAML (YAML Ain't Markup Language) syntax, enclosed between — lines.

```
---
title: 'RMarkdown Source for Statistical Report Template'
author: ''
date: ""
output:
  html_document:
    toc: yes
    toc_float: yes
    toc_depth: 4
    fig_width: 6
    fig_height: 4
    fig_caption: yes
    number_sections: yes
    toc_collapsed: yes
    code_folding: hide
    code_download: yes
    smooth_scroll: yes
    theme: lumen
    highlight: tango
  pdf_document:
    toc: yes
    toc_depth: 4
    fig_caption: yes
    number_sections: yes
  word_document:
    toc: yes
    toc_depth: '4'
---
```

2 CSS

CSS (Cascading Style Sheets)- is a stylesheet language used to control the presentation and layout of web pages. It works alongside HTML (which defines structure) and JavaScript (which adds interactivity) to create visually appealing and responsive websites.

```
```[css, echo = FALSE]
div#TOC li { /* table of content */
 list-style:upper-roman;
 background-image:none;
 background-repeat:none;
 background-position:0;
}

h1.title { /* level 1 header of title */
 font-size: 24px;
 font-weight: bold;
 color: DarkRed;
 text-align: center;
}

h4.author { /* Header 4 - and the author and data headers use this too */
 font-size: 18px;
 font-weight: bold;
 font-family: "Times New Roman", Times, serif;
 color: DarkRed;
 text-align: center;
}

h4.date { /* Header 4 - and the author and data headers use this too */
 font-size: 18px;
 font-weight: bold;
 font-family: "Times New Roman", Times, serif;
 color: DarkBlue;
 text-align: center;
}

h1 { /* Header 1 - and the author and data headers use this too */
 font-size: 20px;
 font-weight: bold;
 font-family: "Times New Roman", Times, serif;
 color: darkred;
 text-align: center;
}

h2 { /* Header 2 - and the author and data headers use this too */
 font-size: 18px;
 font-weight: bold;
 font-family: "Times New Roman", Times, serif;
 color: navy;
 text-align: left;
}

h3 { /* Header 3 - and the author and data headers use this too */
 font-size: 16px;
 font-weight: bold;
 font-family: "Times New Roman", Times, serif;
 color: navy;
 text-align: left;
}

h4 { /* Header 4 - and the author and data headers use this too */
 font-size: 14px;
 font-weight: bold;
 font-family: "Times New Roman", Times, serif;
 color: darkred;
 text-align: left;
}
...

/* Add dots after numbered headers */
.header-section-number::after {
 content: ".";
}
...```

```

### 3 RMarkdown Setup Code Chunk

The RMarkdown setup code chunk is a special R code block used to configure global settings for your entire RMarkdown document. It typically appears at the beginning of your document (after the YAML header).

- **Set Default Options for All Chunks:** Controls how code/output behaves throughout the document using `knitr::opts_chunk$set()`.
- **Load Required Packages:** Preload libraries so they're available for all subsequent chunks.
- **Define Variables/Functions:** Initialize objects or helper functions used across the document.
- **Configure Rendering Behavior:** Adjust caching, figure formats, or error handling globally.

```
```{r setup, include=FALSE}
# code chunk specifies whether the R code, warnings, and output
# will be included in the output files.

if (!require("knitr")) {
  install.packages("knitr")
  library(knitr)
}
#
knitr::opts_chunk$set(echo = TRUE,
                     warning = FALSE,
                     results = TRUE,
                     message = FALSE,
                     comment = NA
)
```
...
```

### 4 Complete Template Source

After opening an R Markdown document, you should delete the default simple YAML and the initial setup code chunk. Then, copy and paste all three components mentioned above (YAML, CSS, and the setup chunk). Whenever you use a new package, include it in the setup code chunk using the suggested conditional statement.

```

```

```
title: "Untitled"
author: "Cheng Peng"
date: "2025-08-10"
output: html_document
```

```

```

```
```{r setup, include=FALSE}
knitr::opts_chunk$set(echo = TRUE)
```

```

```
Introduction
This is an introduction section.
```

```
Including Plots
```

```
You can also embed plots, for example:
```

```
subsection 1
```

```
subsection 2
```