Common LaTeX pitfalls

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November 4, 2023

Contents

1 Introduction

Below each red box shows an example of a pitfall, and the following green box or boxed suggest a solution. Each box is usually divided into two regions. The top shows the latex code, and the bottom is the output. Make changes to your reports accordingly.

2 Paragraphs

> **Do not use \\ for paragraphs...**
>
> ```
> Since the current method does not consider the airports
> specifically, it may lack when the estimation is being
> done for countries like Iran, which has a high ground
> time average, and Turkey. \\
> Planes that stay on the ground rather than flying don't
> generate revenue. Furthermore, the amount of time spent
> on the ground affects punctuality for both the next
> flight of that plane and the transit passengers who will
> continue their trip. \\
>
> This results in some inconsistencies for both the company
> and its passengers. For instance, if the destination airport
> does not acquire a sufficient number of technical teams,
> the safety check processes might take longer than expected.
> ```
>
> -
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3 Citations

At the end of sentences, do not use \cite...

```
...of the variables \cite{ridge} \cite{ridge1}.
```

...of the variables Jared (2018) McDonald (2009).

...instead use \citep: automatically encloses inside parantheses, but...

```
...of the variables \citep{ridge,ridge1}.
```

...of the variables (Jared, 2018; McDonald, 2009).

4 Tables

...instead use longtable enviroment. Always add captions with \caption. Always label tables with \label after \caption and refer to it with \ref in the report. Otherwise their numbers will be wrong, they will be orphaned, and nobody will be able to locate them in the final booklet.

```
Table \ref{tbl:divisions-and-options} explains these nodes.

\begin{longtable}{lp{10cm}}
\toprule
Division & Planned month for the option's sale\\
\midrule
SubDivision & Whether an option is for men, women, or child\\
Lifestyle & Style of the option (e.g., casual, formal, etc.)\\
Buyer group & Type of the option (e.g., pants, coat, etc.)\\
Class & Subtype of the option (for coats, etc.)\\
Range & The most specific category of an option.\\
Option & Simplest form of the product, any product is an option.\\
\bottomrule
\caption{Divisions and sale options}
\label{tbl:divisions-and-options}
\end{longtable}
```

Table 1 explains these nodes.

Division	Planned month for the option's sale
SubDivision	Whether an option is for men, women, or child
Lifestyle	Style of the option (e.g., casual, formal, etc.)
Buyer group	Type of the option (e.g., pants, coat, etc.)
Class	Subtype of the option (for coats, etc.)
Range	The most specific category of an option.
Option	Simplest form of the product, any product is an option.

Table 1: Divisions and sale options

Use \toprule, \midrule, \bottomrule instead of \hline.

5 Figures

```
\includegraphics[width=\textwidth]{figures/Figure 2.png}

\begingroup
\leftskip=0cm plus 0.5fil \rightskip=0cm plus -0.5fil
\parfillskip=0cm plus 1fil
Figure 2: Product Line
\\
\par
\endgroup
```


Figure 2: Product Line

Use figure environment. Always add captions with \caption. Always label figures with \label after \caption and refer to it with \ref in the report.

```
\begin{figure}[htb]
\centering
\includegraphics[scale=0.40]{figures/prod-line.png}
\caption{Production line}
\label{fig:prodline}
\end{figure}

Figure \ref{fig:prodline} shows the third production line in the
factory.
```

Figure 1 shows the third production line in the factory.

Since the figure is floating (namely, latex places it to the closest point where the flow of the report is the least disturbed), it will show up not always at the code's location, but somewhere close by. This is absolutely fine.
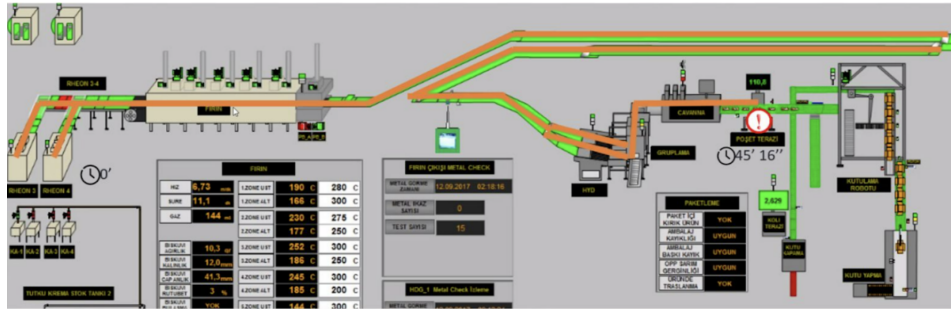
Figure 1: Production line

6 Bib File

Do not use "date" field. Do not use "OPT" in the field names.

```
@article{Thul_and_Powell,
author = {L. Thul and W. Powell},
title = {Stochastic Optimization for Vaccine and Testing Kit
Allocation for the COVID-19 Pandemic},
journaltitle = {European Journal of Operational Research},
date = {June 2023},
OPTvolume = {304},
OPTnumber = {1},
OPTdoi = {10.1016/j.ejor.2021.11.007},
OPTurl = {https://www.sciencedirect.com/science/article/S03hub},
OPTurldate = {Oct. 25, 2023},
}
```

Use "year" and "month" fields instead of "date" field. Remove "OPT" from the field names.

```
@article{Thul_and_Powell,
author = {L. Thul and W. Powell},
title = {Stochastic Optimization for Vaccine and Testing Kit
Allocation for the COVID-19 Pandemic},
journaltitle = {European Journal of Operational Research},
year = 2023,
month = 6,
volume = {304},
number = {1},
doi = {10.1016/j.ejor.2021.11.007},
url = {https://www.sciencedirect.com/science/article/S03hub},
urldate = {Oct. 25, 2023},
}
```

7 Work packages and Gantt Chart

7.1 Work packages

1. Export work packages from PMS as an Excel file.

2. Keep only Subject, Assignee, Start date, Finish date columns.

3. Convert the Excel document to LaTeX table. You can upload Excel file to https://tableconvert.com/excel-to-latex. Select Borders: None.

4. Copy the tabular environment to your report.

5. Replace "tabular" with "longtable". Add \toprule, \midrule, and \bottomrule.

6. Add caption and label for references.

> **Export work packages from PMS as Excel file and convert relevant columns to LaTeX.**
>
> ```
> \begin{longtable}{p{6cm}llll}
> \toprule
> Subject & Assignee & Start date & Finish date \\
> \midrule
> Problem Analysis & ~ & 09 Oct 2023 & 17 Nov 2023 \\
> Modeling & ~ & 06 Nov 2023 & 29 Dec 2023 \\
> Verification & ~ & 27 Nov 2023 & 29 Dec 2023 \\
> Validation & ~ & 29 Jan 2024 & 15 Mar 2024 \\
> Pilot Study & ~ & 01 Apr 2024 & 03 May 2024 \\
> User Interface Prototype & ~ & 29 Jan 2024 & 12 Apr 2024 \\
> Proposal Report & ~ & 11 Oct 2023 & 25 Oct 2023 \\
> 1. Description of the System & merve erdem & 11 Oct 2023 & 25 Oct 2023 \\
> 2. Current System Analysis and Problem Definition & Dila Nil Cansu & 11 Oct 2023 & 25 Oct 2023
> 3. Review of Resources & Eylül Asuman & 11 Oct 2023 & 25 Oct 2023 \\
> 4. Proposed Solution Strategy & Aslı Simge Kara & 11 Oct 2023 & 25 Oct 2023 \\
> 5. Outcome and Deliverables & Kayra Işık & 11 Oct 2023 & 25 Oct 2023 \\
> 6. Project Plan and Work Package Assignments & Hüseyin Bora Taşkın & 11 Oct 2023 & 25 Oct 2023
> Bluesky Enter of Work Package Assignments & Bengisu Özbudak & 11 Oct 2023 & 25 Oct 2023 \\
> Data Analysis & ~ & 09 Oct 2023 & 17 Nov 2023 \\
> Resource Review & ~ & 09 Oct 2023 & 17 Nov 2023 \\
> Current System Analysis & ~ & 09 Oct 2023 & 17 Nov 2023 \\
> Setting Key Objectives & ~ & 06 Nov 2023 & 29 Dec 2023 \\
> Constraints & ~ & 06 Nov 2023 & 29 Dec 2023 \\
> First Progress Report & ~ & 17 Nov 2023 & 24 Dec 2023 \\
> Forecasting & ~ & 06 Nov 2023 & 29 Dec 2023 \\
> \bottomrule
> \end{longtable}
> ```
> -
> See Table 2 for the work packages, assignees, start and end dates.

Subject	Assignee	Start date	Finish date
Problem Analysis		09 Oct 2023	17 Nov 2023
Modeling		06 Nov 2023	29 Dec 2023

Verification		27 Nov 2023	29 Dec 2023
Validation		29 Jan 2024	15 Mar 2024
Pilot Study		01 Apr 2024	03 May 2024
User Interface Prototype		29 Jan 2024	12 Apr 2024
Proposal Report		11 Oct 2023	25 Oct 2023
1. Description of the System	Merve Erdem	11 Oct 2023	25 Oct 2023
2. Current System Analysis and Problem Definition	Dila Nil Cansu	11 Oct 2023	25 Oct 2023
3. Review of Resources	Eylül Asuman	11 Oct 2023	25 Oct 2023
4. Proposed Solution Strategy	Aslı Simge Kara	11 Oct 2023	25 Oct 2023
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Constraints		06 Nov 2023	29 Dec 2023
First Progress Report		17 Nov 2023	24 Dec 2023
Forecasting		06 Nov 2023	29 Dec 2023

Table 2: Work packages

7.2 Gantt chart

1. Press **Gantt Chart All Activity** button at the bottom of the left menu of Work packages in PMS.

2. Zoom out/in, if possible, to fit the entire picture into one screen. If not, repeat the next step after splitting the view.

3. Save a screenshot as a readable/high resolution image (png or jpg).

4. Include the image to your report in a figure environment. Add caption and label. Refer to Gantt chart in the body of the report.

> **Download Gantt chart from PMS as an image.**
>
> ```latex
> \begin{figure}[!htb]
> \includegraphics[width=\textwidth]{figures/gantt-chart.png}
> \caption{Gantt chart of our work packages}
> \label{fig:gantt}
> \end{figure}
>
> Figure \ref{fig:gantt} shows the Gantt chart of our work packages.
> ```
> --
> Figure 2 shows the Gantt chart of our work packages.

8 Appendices

> **Avoid uninformative titles**
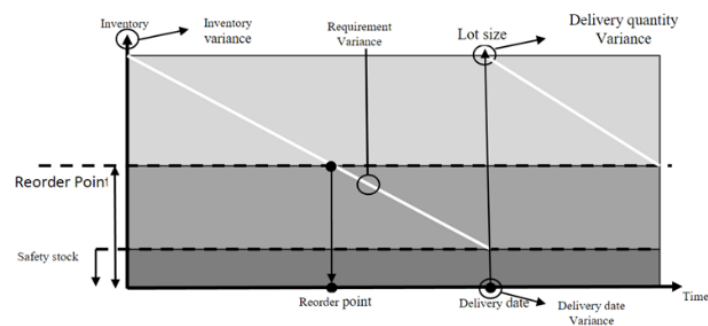>
>
>
> **Appendices**
>
> **A   Appendix 1**
>
> Figure 1: Safety Stock and Delivery Relation

Instead of "Appendix 1", a more informative title like "Components of a stock decision" is better.

If the appendix contains just figure(s), the appendix can be removed altogether, and the figure(s) can be carried to a point where a figure was mentioned in the body of report. Figures floats – do not worry if they show up at the top/bottom of the page before or after where you thought you placed – that is fine.

References

Jared, J. (2018). An Explanation of the Objective Functions in Regularized and Ordinary Least Squares Regression. Accessed: 2023-10-10.
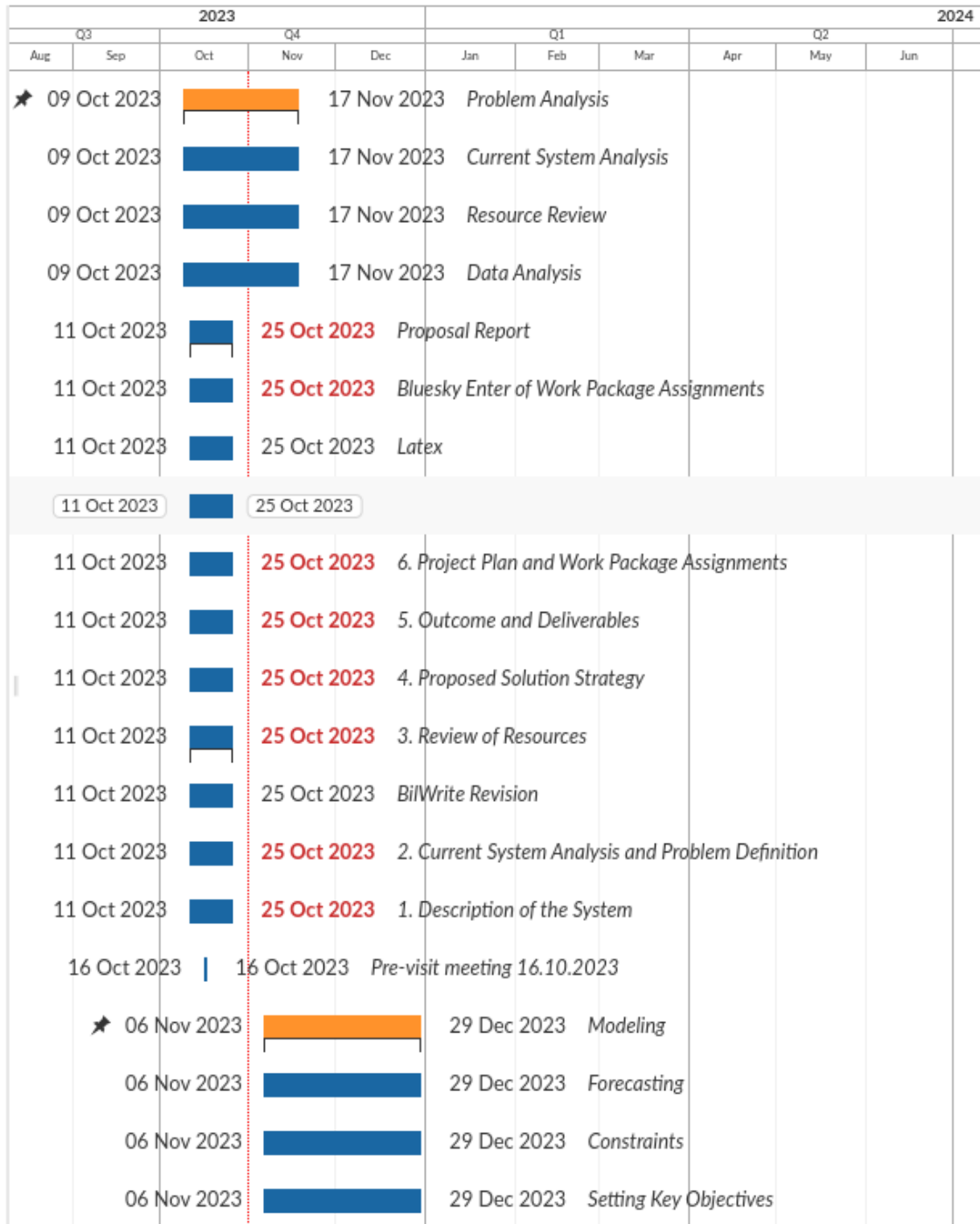
McDonald, G. C. (2009, July). Ridge regression. *WIREs Computational Statistics 1.*

Figure 2: Gantt chart of work packages