Tips and Tricks in LaTeX

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Important points:

1. New para:
   `\\, \par, blank line (recommended)`

2. Little extra space:
   $I = \int e^x \, dx$ ✓
   $I = \int e^x dx$ ✗

3. Align (recommended) vs eqnarray

4. Functions name:
   $\log, \ln, \sin, \cos, \tan, \csc^*, \exp$ ✓
   $log, ln, sin, cos, tan, cosec, exp$ ✗
   *declared math operator

5. Dots:
   As mentioned... ✓
   As mentioned... ✗

6. Page ranges:
   – ✓
   - ✗

7. Avoid to use:
   `\newpage, \bigskip, \medskip, smallskip,`
   `\pagebreak, \linebreak`

8. Cross referencing command:
   `\ref{}, \eqref{}, \pageref{},` ✗
   `\cref{}, \Cref{}, \crefrange{}, \Crefrange{}` ✓

   The `\cref{}`, `\Cref{}`, ... commands all come from the *cleveref* package (clever references). The *cleveref* package should be loaded last as it alters the behaviour of a lot of packages. There are some exceptions to this though see *cleveref.pdf* user documentation page 23.

9. Displaymath:
   `$$---$$, \[\]` (recommended)

10. Angled bracket
    You may be surprised that the keyboard angle brackets (greater than, less than) symbols don't render correctly. This is likely traceable to

an encoding issue. TeX and LaTeX are English language orientated
by original design and thus don't render non ascii characters correctly
without the use of additional packages.

```
\usepackage { ucs }
\usepackage [ utf8x ] { inputenc }
\usepackage [ T1 ] {fontenc }
```

```
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\usepackage [ utf8x ] { inputenc }
\usepackage [ T1 ] {fontenc }
```

```python
import numpy as np

def incmatrix(genl1, genl2):
    m = len(genl1)
    n = len(genl2)
    M = None #to become the incidence matrix
    VT = np.zeros((n*m,1), int)  #dummy variable

    #compute the bitwise xor matrix
    M1 = bitxormatrix(genl1)
    M2 = np.triu(bitxormatrix(genl2),1)

    for i in range(m-1):
        for j in range(i+1, m):
            [r,c] = np.where(M2 == M1[i,j])
            for k in range(len(r)):
                VT[(i)*n + r[k]] = 1;
                VT[(i)*n + c[k]] = 1;
                VT[(j)*n + r[k]] = 1;
                VT[(j)*n + c[k]] = 1;

    if M is None:
        M = np.copy(VT)
    else:
        M = np.concatenate((M, VT), 1)

    VT = np.zeros((n*m,1), int)

    return M
```

11. Delimiters size
    `\left[...\right]`, `\left(...\right)`, `\left\{\right\}`,
    `\big, \bigg, \biggr, \biggm, \biggl, \Big, \Bigg, \Biggl, \Biggm, \Biggr`,
    e.g. $\left[\frac{e^e-1}{\ln(100)}+6\right], \left[\frac{e^e-1}{\ln(100)}+6\right], \Big|$

12. Uppercase in references: `{Letter}`

13. Inverted commas:
    load `\usepackage{csquote}` package in the preamble and use `\enquote{---}`
    or from the keyboard

14. Order of packages

15. Add extra line: `\enlargethispage{number\baslineskip}`

16. Clean auxiliary files

Common errors:

1. ! Extra `}` or forgotten `$`
   ⇒ check `{each}` and `$each$`

2. ! Emergency stop
   missing `\end{document}` or wrong spelling

3. ! I can't write on file ' '
   Close opened pdf (specially in Acrobat)

4. ! Paragraph ended before ... was complete
   wrong command name e.q. `\smalll`,
   missing `}`

5. ! Too many `}`'s
   missing `{`

6. ! Undefined control sequence
   command name is not spelled correctly

7. ! Missing `$` inserted
   `$---$, or \begin{math}---\end{math} or \ensuremath{---}`

8. ! LaTeX Error: File 'name.sty' not found
   misspelled package name,
   download required package first and put it in the same folder

9. ! LaTeX Error: Option clash for package
   change the order of package,
   remove the option

10. ! LaTeX Error: Missing `\begin{document}`
    Avoid to type any printable text in the preamble

11. ! File ended while scanning use of `\end`
    May be you have not closed something properly, e.g. forgot to use `}`

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

Contrary to popular belief, Lorem Ipsum is not simply random text. It has roots in a piece of classical Latin literature from 45 BC, making it over 2000 years old. Richard McClintock, a Latin professor at Hampden-Sydney College in Virginia, looked up one of the more obscure Latin ordsContrary to popular belief, Lorem Ipsum is not simply random text.

Document Structure

```
\RequirePackage[l2tabu]{nag}
% % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % % %

% % % % % % % % % % %Packages % % % % % % % % % % % % % % % % % % %
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\documentclass[12pt,a4paper,twoside,openright]{report}

% % % % Fonts type and spacing % % % % % % % % %
\usepackage[T1]{fontenc}
\usepackage[english]{babel}
\usepackage[sc]{mathpazo}
\linespread{1.05} % Palatino needs more leading (space between lines)
%\usepackage{times}
%\usepackage{mathptmx}
%\usepackage[varg]{txfonts}
\usepackage[onehalfspacing]{setspace}

% % % % AMS packages % % % % % % % % % % % % % % % % %
\usepackage{amsmath}
\usepackage{amssymb}
\usepackage{amsfonts}

% % % % Layout % % % % % % % % % % % % % % % % % % % %
\usepackage{geometry}
\geometry{ %
 a4paper,
 total={210mm,297mm},
 inner=3.5cm,
 outer=2.5cm,
 top=2.5cm,
 bottom=2.5cm,
 }
%\usepackage{anysize}
%\marginsize{3.5cm}{2.5cm}{2.5cm}{2.5cm}
\usepackage[stretch=10,shrink=10]{microtype}
\usepackage{fancyhdr}
```

```
  \pagestyle{fancy}
\usepackage{emptypage}
%emptypage:to Remove haeader from the blank page in twosided layout
\usepackage{afterpage}
\usepackage{ragged2e} %\justifying
\usepackage{quotchap}
  \qsetcnfont{pnc}
%\usepackage[Sonny]{fncychap}
%\usepackage{background}
% \backgroundsetup{contents=Draft,scale=4,position={2,-3.5},opacity=1}
\usepackage{fancybox}
 \raggedbottom
% \raggedbottom : No extra vertical space is added.

% % % % % % % % % Graphics % % % % % % % % % % % % %
\usepackage[demo]{graphicx}
%\graphicspath{{image1/}{image2/}}
\usepackage{float}
\usepackage{grffile} %grffile is used to allow spaces in images in pdfTeX
\usepackage{caption}
 %\captionsetup{font={small, singlespacing}, justification=justified}
\usepackage{subcaption}

% % % % % % % Lists % % % % % % % % % % % % % % % % %
\usepackage[intoc]{nomencl}
  \makenomenclature
\usepackage[round]{natbib}
\usepackage[toc,page]{appendix}
%\usepackage{chapterbib}
\usepackage{tocbibind}
%\usepackage[undotted]{minitoc}

% % % % Title % % % % % % % % % % % % % % % % % % % %
\usepackage{titletoc}
\usepackage[toctitles]{titlesec}
%\usepackage{tocloft}
%\usepackage{titlepage}

% % % % Misc % % % % % % % % % % % % % % % % % % % %
\usepackage{bm}
\usepackage{enumerate}
```

```latex
\usepackage[version=3]{mhchem}
\usepackage{booktabs}
\usepackage{array}
\usepackage{longtable}
\usepackage{multirow}
\usepackage{calc}
\usepackage{cancel}
\usepackage{vector}
\usepackage{soul}
\usepackage{colonequals}
\usepackage[normalem]{ulem}
\usepackage{ifthen}
\usepackage{etoolbox}
\usepackage{empheq}
\usepackage{color}
\usepackage[table]{xcolor}
\usepackage{multirow}
\usepackage[bottom]{footmisc}
\usepackage{numprint}
\usepackage[allowlitunits]{siunitx}
\usepackage{nicefrac}
\usepackage{xfrac}
\usepackage{theorem}
\usepackage{listings}
\usepackage{lscape}
\usepackage{xspace}
\usepackage{commath}
\usepackage{vector}
\usepackage{tensor}
\usepackage{eucal}
\usepackage[euler]{textgreek}
\usepackage[Euler]{upgreek}
\usepackage{filecontents}
\usepackage[nomargin,footnote,index]{fixme}
\usepackage{hyphenat}
\usepackage{csquotes}
\usepackage{lipsum}
\usepackage{verbatim}
\usepackage{filecontents}
\usepackage{hyperref}
 \hypersetup{
```

```
        bookmarks=true,          % show bookmarks
        unicode=false,           % non-latin characters in Acrobat's bookmarks
        pdftitle={Ch},           % title
        pdfauthor={Chandra Has},% author
        pdfnewwindow=true,       % links in new window
        colorlinks=true,         % false: boxed links; true: colored links
        citecolor=blue,          % color of links to bibliography
        urlcolor=green           % color of external links
 }


 % % %Packages must be loaded after hyperref % % % % %
\usepackage[capitalise]{cleveref}
\usepackage{algorithm}
\usepackage{bookmark}
\usepackage[toc]{glossaries}
  \makeglossaries
\usepackage{imakeidx}
  \makeindex[title=Index 1]
%  \makeindex[name=p,title=Index 2]

% % % Customm commands % % % % % % % % % % % % % % % % % % %
\definecolor{chaptergrey}{rgb}{.5 .5 .5}
\newcommand{\printpageintoc}{\addtocontents{toc}{~\hfill\textbf{Page}\par}}
% \printpageintoc works with "afterpage" package

\renewcommand{\bibname}{References}

\begin{document}

\thispagestyle{empty}
\include{Title}

\cleardoublepage
\phantomsection
\pagestyle{plain}
\pagenumbering{roman}
\addcontentsline{toc}{chapter}{Abstract}
\include{Abstract}

\cleardoublepage
\phantomsection
```

```latex
\include{Dedication}

\cleardoublepage
\phantomsection
\include{Declaration}

\cleardoublepage
\phantomsection
\include{Acknowledgements}

\cleardoublepage
\phantomsection
\printnomenclature

\cleardoublepage
\phantomsection
\printpageintoc
\tableofcontents

\cleardoublepage
\phantomsection
\listoffigures

\cleardoublepage
\phantomsection
\listoftables

\cleardoublepage
\phantomsection
\pagestyle{fancy}
\pagenumbering{arabic}
\setcounter{page}{1}
\include{chap01}
\include{chap02}

\cleardoublepage
\phantomsection
\addcontentsline{toc}{chapter}{References}
\bibliographystyle{apalike}
\bibliography{mybib}
```

```
\cleardoublepage
\phantomsection
\appendix
\include{app01}

 \end{document}
%%-------------------------------------------------- % %
```

Bibliography

Asthana, R., M. K. Awasthi, and G. S. Agrawal (2012). Kelvin-Helmholtz instability of two viscous fluids in porous medium. *Int J. Appl Math Mech 8*(14), 1–13.