A LaTeX Document Templates

Ross

Contents

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Created: November 26, 2019
Last Updated: December 25, 2019

List of source codes

1. Random Text

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.

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2. Common Eenvironment

2.1   List

2.1.1   Unordered list

- Sth
- Sth
- $\cdots$

2.1.2   Ordered list

(1) Sth
(2) Sth
(3) $\cdots$

More beautiful by using 1

> **12**
> - Sth
> - Sth
> - ...

```
\begin{mybox}{12}
    \begin{itemize}[leftmargin = 10pt]
        \item Sth
        \item Sth
        \item $\cdots$
    \end{itemize}
\end{mybox}
```

Listing 1   *mybox*

2.2   Table

Table 1   *This is a table*

NUMBER	NAME	AGE	ID	GENDER
001	*	*	*	*
002	*	*	*	*
003	*	*	*	*
004	*	*	*	*
005	*	*	*	*

```latex
\begin{table}[ht]
    \centering
    \begin{center}
        \caption{\em This is a table}
        \vskip 0.1in
        \label{table}
        \begin{tabular}{c|cccc}
          \hline
          \hline
          \rule{0pt}{3ex}
          NUMBER & NAME & AGE & ID & GENDER
                                \rule[-1.2ex]{0pt}{0pt} \\\hline
        001 & * & * & * & * \\
        002 & * & * & * & * \\
        003 & * & * & * & * \\
        004 & * & * & * & * \\
        005 & * & * & * & * \\
          \hline
          \hline
        \end{tabular}
    \end{center}
\end{table}
```

Listing 2   *Table*

2.3   Figure

2.3.1   figure

Figure 1   *figure*

2.3.2   subfigure

(a) *subfigure 1*   **(b)** *subfigure 2*
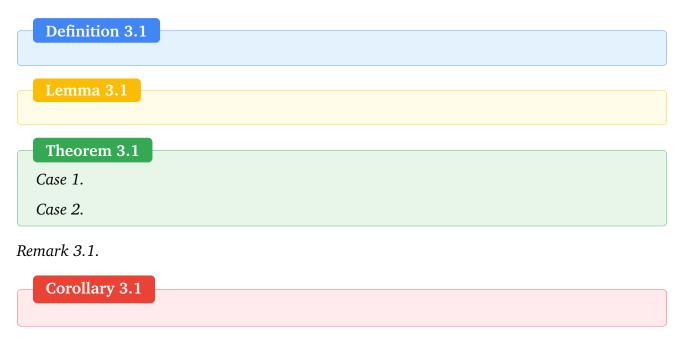
Figure 2   *subfigure*

```latex
\begin{figure}[H]
    \centering
    \begin{subfigure}{.48\textwidth}
        \centering
        % include first image
        \includegraphics[width=.5\linewidth]{google.png}
        \caption{\em subfigure 1}
        \label{fig:v21}
    \end{subfigure}
    \begin{subfigure}{.48\textwidth}
        \centering
        % include second image
        \includegraphics[width=.5\linewidth]{google.png}
        \caption{\em subfigure 2}
        \label{fig:v22}
    \end{subfigure}
    \caption{\em subfigure}
    \label{fig:v2}
\end{figure}
```

Listing 3   *Subfigure*

3. Theorem Class Environments

Definition 3.1

Lemma 3.1

Theorem 3.1

Case 1.

Case 2.

Remark 3.1.

Corollary 3.1

Example 3.1.

Proof.

∎

4. Math Equations

To prove $a = b$, we need to prove

No number

$$a < b + \epsilon, b < a + \epsilon.$$

Numbered

$$a < b + \epsilon, b < a + \epsilon. \tag{4.1}$$

PNP/Stokes equations

$$
\begin{cases}
\partial_t - \nabla \cdot [D_i(\nabla C_i + q_i \nabla \Phi C_i) - \boldsymbol{u}C_i] = F_i, & (4.2) \\
-\nabla \cdot (\epsilon \nabla \Phi) = (C_1 - C_2) + F_3, & (4.3) \\
\partial_t \boldsymbol{u} - \Delta \boldsymbol{u} + \nabla p = -(C_1 - C_2)\nabla \Phi + F_4, & (4.4) \\
\nabla \cdot \boldsymbol{u} = 0. & (4.5)
\end{cases}
$$

Matrix

$$
\begin{bmatrix}
2 & -1 & 0 \\
-1 & 2 & -1 \\
0 & -1 & 2
\end{bmatrix}
$$

References

[1]

[2]

[3]

A. Codes

```python
import matplotlib.pyplot as plt import numpy as np

plt.figure(num = 1, figsize=(8, 6)) n = np.linspace(1,100,100)
plt.plot(n, 1/n, 'bx') plt.xlabel(r'$ n $')
plt.ylabel(r'$ \frac{1}{n} $')

plt.figure(num = 2, figsize=(8, 6)) n = np.linspace(1,100,100)
plt.plot(n, np.sin(n)/n, 'bx') plt.xlabel(r'$ n $')
plt.ylabel(r'$ \frac{\sin(n)}{n} $')

plt.show()
```

Listing 4   *Python*

```matlab
figure()
plot(XX,YY,'k-'),hold on plot(XX',YY','k-'), hold on
B= plot(boundary(3,:), boundary(4,:), 'b.', 'markersize', 25);
hold on
I = plot(index(:,1), index(:,2), 'r.', 'markersize',25);
hold off
axis equal
set(gca,'xtick',[],'ytick',[])
xlim(X)
ylim(Y)
set(gca,'looseInset',[0 0.01 0 0.01])
h = legend([B, I], 'boundary nodes', 'inside nodes', 'Location','bestoutside');
set(h, 'Fontsize', 10)
```

Listing 5   *Matlab*